City of Los Altos

Source Reduction and Recycling Element

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Source Reduction and Recycling Element

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Executive Summary

The California Integrated Waste Management Act of 1989 (Assembly Bill 939) mandates that by January 1, 1995 each California city and county must divert 25 percent of all solid waste from landfill or transformation facilities through source reduction, recycling and composting activities. By January 1, 2000, the required waste diversion is 50 percent. AB 939 responds to the pressing need to divert materials from landfills in order to preserve decreasing site capacity and diminishing natural resources.

AB 939 and related legislation require each city prepare, adopt and submit to the county a source reduction and recycling element (SRRE) that includes the following components:

- waste generation study
- source reduction
- recycling
- composting
- special waste
- education and public information
- solid waste facility capacity
- funding
- integration.

In addition, the city must prepare, adopt and submit a household hazardous waste (HHW) element as a separate document.

An integrated waste management hierarchy is established by AB 939.

- source reduction to reduce generation of wastes
- recycling and composting of materials
- environmentally safe transformation of wastes (incineration, destructive distillation, gasification and pyrolysis)
- environmentally safe landfilling

The City of Los Altos' SRRE applies this hierarchy as a planning tool in the selection of programs designed to meet diversion goals.

Goals of SRRE

Meeting the state-mandated waste diversion goals of 25 and 50 percent by years 1995 and 2000 respectively is the primary goal of the City of Los Altos SRRE.

The following goals have guided the development of the city's SRRE:

- Meet or exceed state-mandated waste diversion rates through source reduction, recycling and composting.
- Maximize source reduction, recycling and composting opportunities in the City of Los Altos.
- Minimize adverse environmental impacts and ensure public health and safety.
- Increase public awareness of the need to reduce and recycle the solid waste stream and provide information on how to participate as individuals and in community programs.
- Expand and develop a sense of community pride in order to maximize participation in source reduction, recycling, and composting programs.
- Encourage and foster the participation of solid waste refuse collectors as well as the commercial sector in the waste management planning process and the implementation of selected programs.
- Develop and expand local and regional markets for diverted materials.
- Ensure proper disposal of wastes that cannot be reduced, reused, recycled or composted.
- Divert hazardous wastes from disposal in landfills.
- Extend the lifetime of existing landfills in Santa Clara County.

Mandated Format of SRRE

Title 14, Chapter 9 of the California Code of Regulations (CCR) specifies the required substance and format of the SRRE to be prepared by each city and county in California. The components of the SRRE that address source reduction, recycling, composting and special waste must contain the following sections:

- objectives
- existing conditions
- evaluation of alternatives
- program implementation
- monitoring and evaluation

The regulations dictate that the alternatives considered for these four components must be evaluated in accordance with ten criteria that reflect a wide range of technical economic, institutional, and socio-political issues.

The remaining components of the city's SRRE (education/public information, disposal facility capacity, funding, integration) deviate somewhat in format from the first four. The

apparent lack of consistency in the format is dictated by the regulations for Planning Guidelines and Procedures for Preparing and Revising Countywide Integrated Waste Management Plan (Title 14, CCR, Division 7, Chapter 9, Articles 3,6.1, 6.2, 7 and 8).

Waste Generation Study

In compliance with AB 939, the City of Los Altos identified quantities of solid waste that are currently being diverted or have the potential of being diverted from the Newby Island Landfill in San Jose. In addition, the city identified the composition and quantity of solid wastes disposed of in the landfill.

Los Altos also conducted a waste diversion study to estimate the quantities of materials diverted from the landfill. Diversion results were obtained from 1) city records, 2) collectors of recyclables, and 3) surveying local businesses on their diversion activities.

Not all possible sources of diversion were reached, consequently the data of the diversion study reflects conservative estimates.

A summary of the city's waste stream by generator is shown in Figure ES.1. The composition of waste generated is summarized in Figure ES.2. Table ES.1 is a summary of wastes generated through diversion and disposal.

Figure ES.1

Disposed Waste by Generator

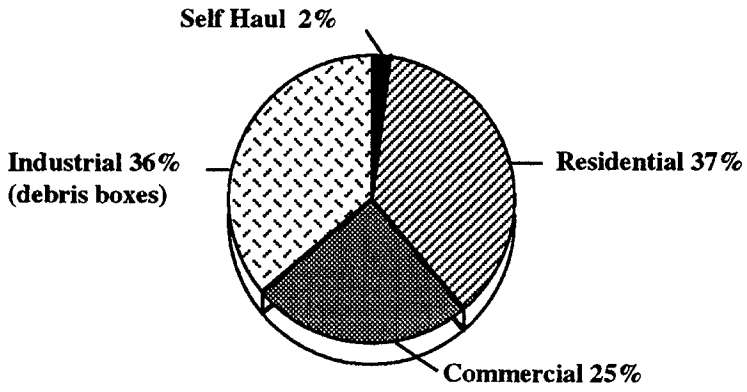
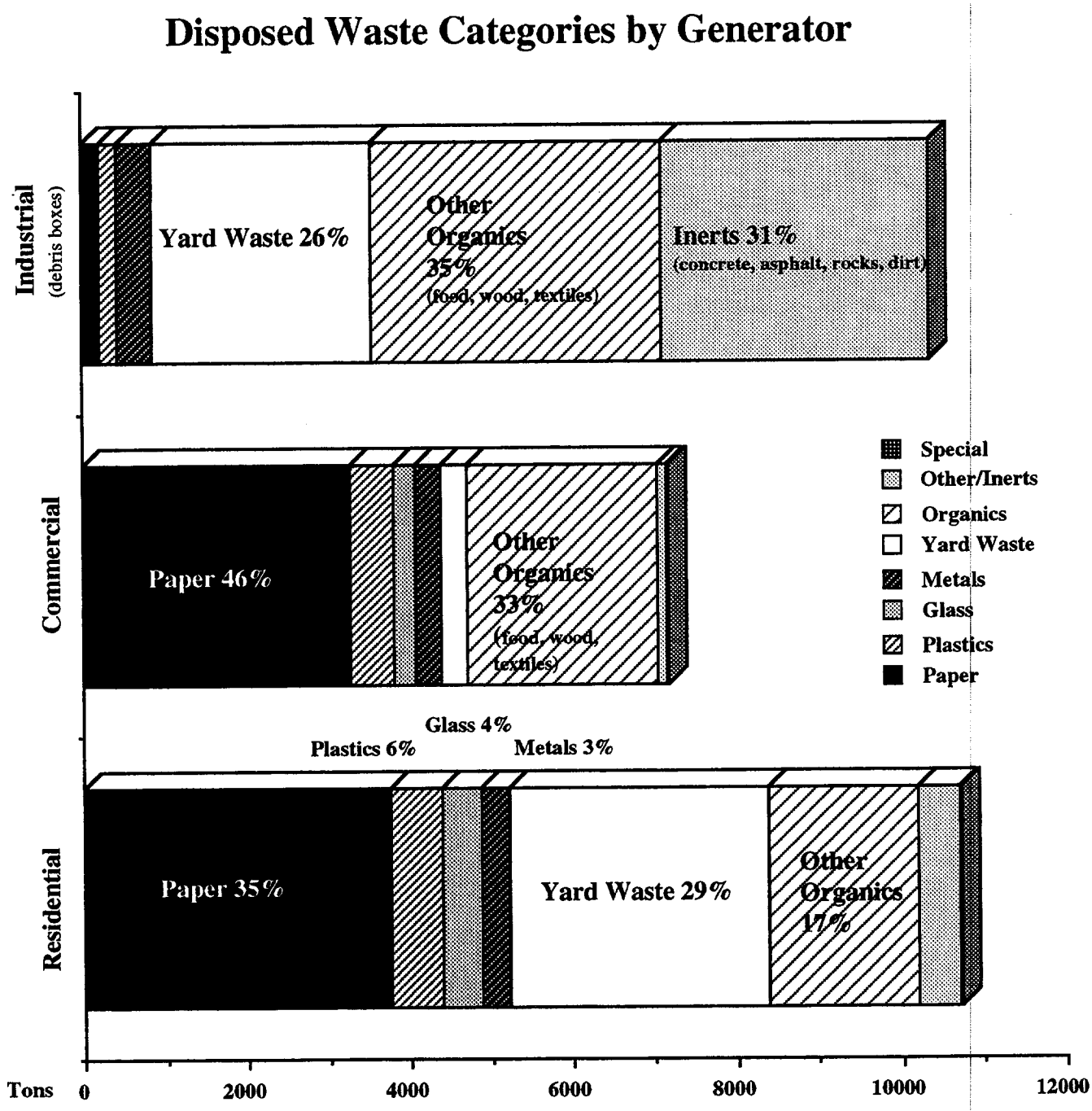


Figure ES.2



Since self haul waste accounts for only 2%, it was not included in this graph

Table ES.1
Quantities and Percentages of
Wastes Diverted from the City's Waste Stream

Waste Source	Quantities Generated tons/year (1990)	Quantities Diverted tons/year (1990)	Percent Diversion
Residential	15,375	4,024	35%
Commercial	7,889	349	4%
Industrial	6,830	0	0%
Total	30,094	4,373	15%

Materials Targeted for Diversion

Programs identified in the SRRE for source reduction, recycling, composting have been chosen to target these materials for diversion from landfilling:

- paper
- plastic
- glass
- metals
- yard waste
- other organics
- special wastes
- inerts (asphalt, concrete and soil)

Selected Programs

Based of the City of Los Altos' current waste generation profile, the diversion programs selected to meet required solid waste reduction goals of 25 percent by 1995 (short-term planning period) and 50 percent by 2000 (medium-term planning period) are summarized below.

Source Reduction

Short-Term Planning Period
- develop public education and technical assistance
- modify rate structures
- initiate regulatory programs (procurement/purchase preferences)

Medium-Term Planning Period
- continue and modify as needed short-term period programs

Recycling

Short-Term Planning Period

- continue nine-year-old residential curbside collection program for single and multi-family dwellings
- expand use of curbside program in multi-family dwellings
- continue curbside collection of commercial corrugated cardboard and residential drop-off locations
- initiate procurement/purchase preferences program

Medium-Term Planning Period

- divert inert solids from construction debris boxes (industrial sector) to a materials processor
- as markets develop, add materials to be accepted into existing programs
- expand opportunities in the commercial sector

Composting

Short-Term Planning Period

- implement residential curbside yard waste to composting program

Medium-Term Planning Period

- add commercial sector to curbside program
- implement diversion program from debris boxes

Special Wastes

Solid waste requiring collection, processing and disposal procedures that differ from those typically needed for other municipal waste is considered special waste. Examples of special wastes are sewage sludge, ash, asbestos, tires, white goods, mattresses, abandoned vehicles and dead animals. White goods (with the exception of refrigeration units with CFCs) are the only special wastes taken for disposal at Newby Island Landfill. Other special wastes and half of the white goods generated in Los Altos are currently being diverted into recycling channels. Other special wastes however are not countable as diversion. Should white goods no longer count toward diversion (as is anticipated by recent legislation), Los Altos will still meet its waste reduction goals.

Education and Public Information

Public information and educational programs are vital successfully meeting solid waste reduction goals. Los Altos will continue to target sectors to increase participation in existing and new waste reduction efforts. The entire community will be informed about expansions/modifications and new programs.

Los Altos will continue to develop extensive multi-media public awareness programs to support waste diversion goals. Business and community groups will be encouraged to continue public information and educational activities.

Disposal Facility Capacity

There are no permitted solid waste disposal facilities within the city limits of Los Altos. All of the city's disposed waste (with the exception of less than one percent self-hauled) is currently exported to the permitted Newby Island Landfill in San Jose through the year 2018. There are no plans to establish a disposal facility in Los Altos during the short or medium-term planning periods.

Based on disposal needs projections, Los Altos will not require additional disposal capacity from any other landfill during the 15 year planning period.

Integration

All solid waste programs selected by Los Altos will be integrated with one another to promote source reduction, recycling and composting, and environmentally safe transformation and disposal. Los Altos will work with other jurisdictions and agencies whenever feasible to develop waste reduction programs, public education and end-user markets. A combination of existing programs with new programs and activities supported by aggressive public awareness will contribute to Los Altos meeting diversion targets mandated by law. Figures ES.3-6 show current and projected diversion activities to meet AB 939 mandated goals.

Funding

Solid waste management programs in the City of Los Altos are funded by an "enterprise" fund exclusively for this use. Revenues for this fund include 1) surcharges/user fees for special programs such as cleanups, household hazardous waste, composting and recycling; 2) administration; 3) grants; 4) disposal tipping fees. Franchise fees for refuse collection by Los Altos Garbage Company go into the general fund. Surcharges and fees are adjusted regularly based on projected costs. The recycling program is funded through regular customer rates. It is anticipated that the yard waste to composting program will be likewise funded.

In fiscal year 1990-91 the fund balance of the solid waste management enterprise fund was $650,000. In addition to funding city administration, public awareness and special programs, this fund is used for disposal costs. Currently two staff persons administer solid waste programs part-time (at 10 and 55 percent). No additional staffing is anticipated in the short-term planning period but will be reviewed in the medium-term period.

Conclusion

Currently Los Altos is diverting 15 percent of its solid waste generated. With the addition of a composting program and increased support for source reduction activities and existing recycling programs, Los Altos can expect to divert 36 percent of its waste stream by 1995. By 2000 the city expects to divert 51 percent of its generated waste by adding inerts and other materials for recycling.

Figure ES.3
Current Diversion Program Results

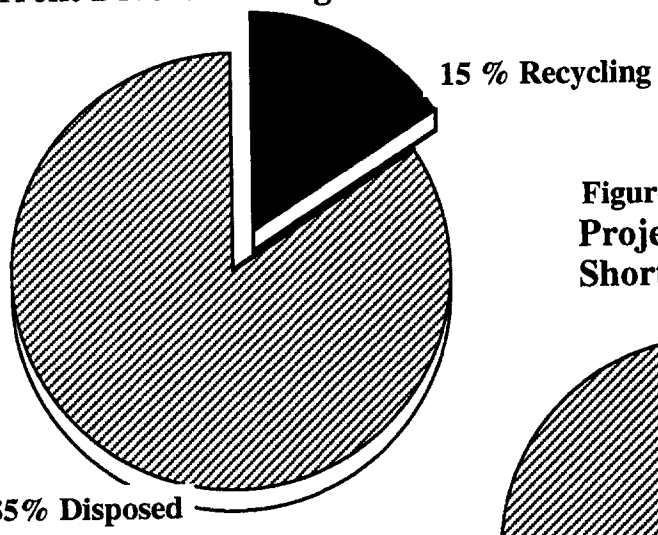


Figure ES.4
Projected 36% Short Term Diversion

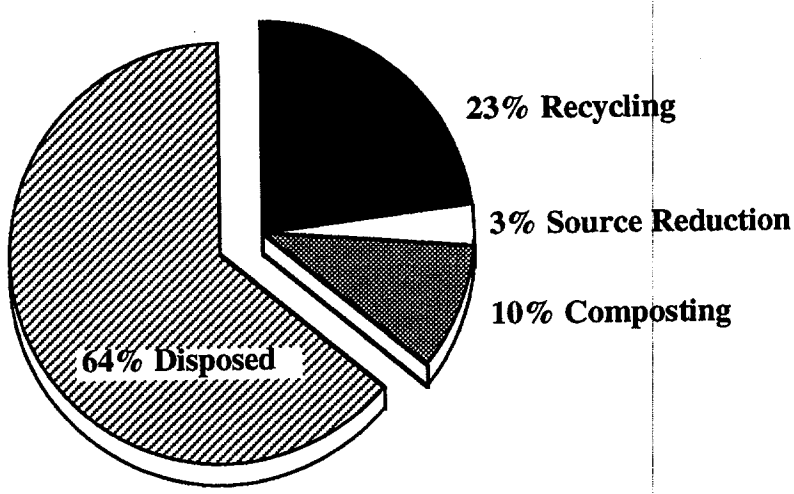


Figure ES.5
Projected 51% Medium Term Diversion

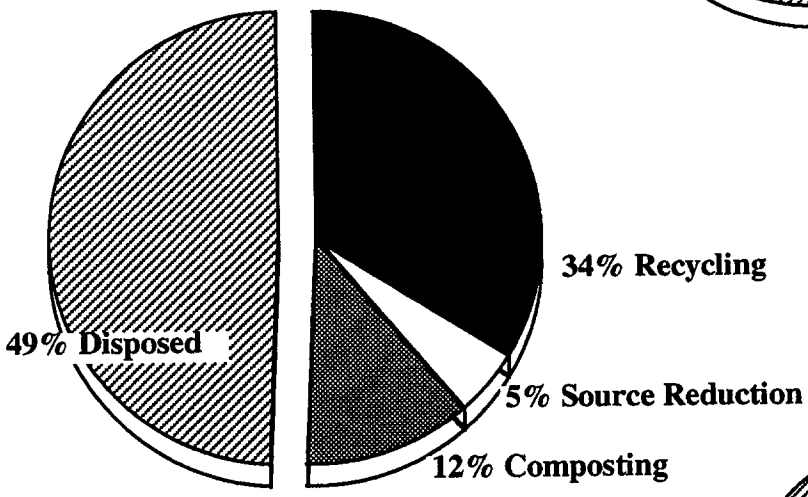
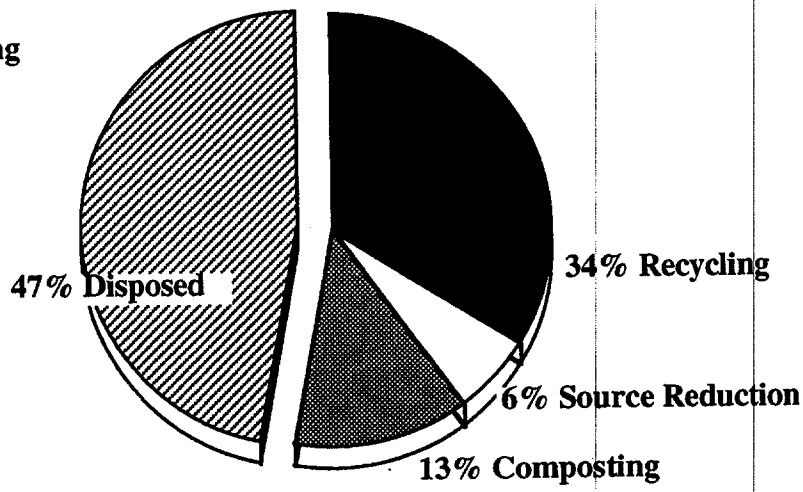


Figure ES.6
Projected 53% 15 Year Diversion



Waste Characterization Component

Introduction

This section presents the results of a waste disposal and diversion characterization study performed by the City of Los Altos. The waste characterization was conducted to satisfy the requirements of an AB 939 initial study. As required by AB 939, the study was divided into two parts: a waste disposal characterization and a waste diversion characterization When combined, the results of the disposal and diversion characterization yield the total amount of solid waste generated in Los Altos according to the equation defined by AB 939.

Generation = Disposal + Diversion

Generation	— the total quantity of solid waste generated with the jurisdiction
Disposal	— the total quantity of solid waste, generated within the jurisdiction, which is transformed or disposed in permitted solid waste facilities
Diversion	— the total quantity of solid waste, generated within the jurisdiction, which is diverted from permitted solid waste transformation and disposal facilities, through existing source reduction, recycling and composting programs.

The waste disposal characterization was performed using quantitative field methodology. Waste diversion quantities were determined using a material accounting system that collected information from both the generators of diverted materials and from the collectors of those materials. When combined, the information from the two sources amounted to a comprehensive accounting of solid wastes diverted from the Los Altos waste stream.

The waste generation study also attempted to measure the amount of source reduction occurring in Los Altos. As with the diversion study, a survey technique was developed to estimate the amount of source reduction occurring with several clearly defined materials or products. Details of the source reduction, waste disposal, and waste diversion studies are presented in the following sections. Using information from the waste generation study and the other components of the SRRE, a 15 year projection is included for the amounts and types of waste expected to be generated under the current solid waste management conditions as well as those proposed in the SRRE.

Demographic Information

The City of Los Altos is located 37 miles south of San Francisco in northwestern Santa Clara County. Neighboring cities are Palo Alto, Mountain View, Sunnyvale, Cupertino and the Town of Los Altos Hills. The city is seven square miles in area and consists of residential,

commercial and open space land use. According to information provided by the city's planning department, the preliminary data from the 1990 census shows 10,107 housing units (90 percent single family) and a population of 26,303. The preliminary census statistics indicates lower population and number of households than projected by the Association of Bay Area Governments (ABAG) for 1990. ABAG projections were used to extrapolate 15 year projections for this component.

Preliminary 1990 census data indicates that the population mixture is:

86.4%	White	.4%	Black
10.0%	Asian	.2%	American Indian
3.0%	Hispanic		

The commercial sector in Los Altos consists of small businesses and retail. There are eight elementary schools, nine private schools and one high school in Los Altos. There is no industry in Los Altos. ABAG projections estimate a total of 8,500 jobs of which 15 percent are held by Los Altos residents.

Waste Stream Flow

Los Altos' waste stream has been segmented into the following sources:

- Residential — waste from single and multi-family dwellings
- Commercial — waste from retail, service, education and governmental operations
- Industrial/Debris Box — waste of roll-off boxes from residential and commercial construction and demolition (Los Altos has no industry)
- Self-haul — waste hauled by businesses directly to various landfills in Santa Clara County and the BFI transfer station in San Carlos (San Mateo County)
- Curbside Recycling — waste from single and multi-family dwellings collected for recycling of metal, glass, plastic, newspaper and motor oil
- Commercial Recycling — waste from retail, service, education and governmental operations collected for recycling of cardboard and high grade paper
- AB 2020 — beverage container waste from all sectors via California AB 2020 redemption centers
- Non-profit — waste from all sectors for recycling of various materials

After collection, wastes generated in Los Altos enter one of four channels: landfill disposal, transformation via incineration, composting, or recycling. Under present regulations, channeling waste into recycling and composting qualifies as waste diversion.

Disposed Waste Characterization Study

To obtain information presented in this document, a waste characterization study was conducted on existing conditions regarding disposed waste quantities. The results of the study establish baseline data collected in other studies to compute waste generation. Baseline data will

be used to assist in the monitoring and documentation of the progress of programs implemented to achieve the mandated 25 percent and 50 percent diversion goals of AB 939.

Cal Recovery Inc. was retained to plan and conduct a waste characterization study for the cities of Los Altos, Cupertino, Town of Los Altos Hills and portions of north Santa Clara County surrounding these jurisdictions. The complete study (including objectives, methodology an results) by Cal Recovery, Inc. is in Appendix A.

Current Solid Waste Practices

Solid waste destined for disposal is collected by the city's franchised hauler, Los Altos Garbage Company (LAGCo). Wastes collected for disposal by LAGCo are landfilled at the permitted BFI Newby Island Landfill in San Jose for which the city has a 30 year contract.

Small haulers, residents, and contractors also self-haul wastes directly to landfills. Self-haul wastes generally consist of bulky items that are not suitable for collection by conventional residential and commercial methods.

There is no permitted waste disposal facility in Los Altos. Waste from the city is destined for disposal at BFI's Newby Island Landfill in San Jose.

Sampling Methodology

The complete Disposed Waste Characterization Study by Cal Recovery, Inc. which details methodology and results is included in Appendix A of the SRRE. Selection of vehicles for study was accomplished with an as-needed procedure. This is an unbiased method because the investigator has nor prior knowledge of the contents or history of the load randomly selected when the vehicle was needed.

Self haul vehicles were visually surveyed at two landfills (Guadalupe Mines Landfill and Newby Island). From a total of 725 vehicles surveyed, most were primarily from Santa Clara County. Less than two percent of the loads disposed were attributed to Los Altos. However, due to the small amount of self haul waste disposed by the city, the total number of loads sampled provided a representative composition of the city's self haul waste stream. Data was obtained from hauler and landfill records.

Disposed Waste Composition and Quantities

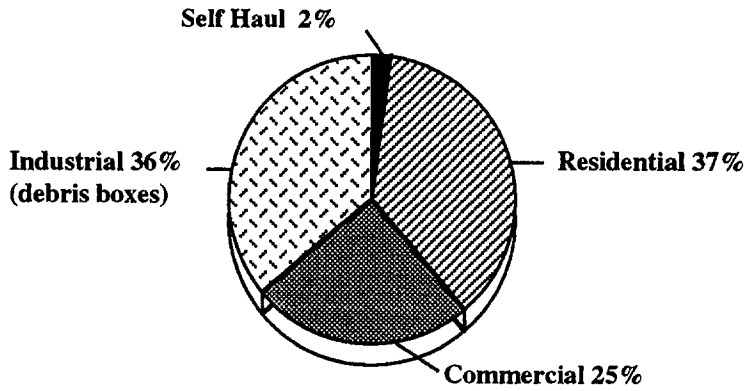
Tonnages of Los Altos' disposed waste are quantified from hauler (LAGCo) and landfill operator (BFI Newby Island) records. All wastes are weighed at the landfill.

Total Los Altos disposal tonnage is estimated at 28,728 for 1991. The pie chart in Figure 1.1 shows the percentage (by weight) of Los Altos' total disposed waste by generator. As shown, the residential and industrial (debris boxes) sector comprise the largest portions of the disposed waste stream at 37 percent and 36 percent respectively. The graph in Figure 1.2 shows the composition of disposed waste by generator.

The average compositions (percent of weight) and the estimated annual disposed quantities (in tons per year) for residential, commercial, industrial, and self-haul waste are shown in Table 1.1. The results are presented in accordance with the categories required by the California Integrated Waste Management Board.

For this study, the category labeled "Other Special Wastes" consists of common household appliances such as stereos, radios, and telephones. These types of appliances predominate in compacted residential waste and can be readily salvaged or identified from the tipping area.

Figure 1.1
Disposed Waste in Percent of Weight by Generator



Residential Wastes

The total paper category is the category with the largest concentration (34.9 percent) in the disposed residential waste stream. Mixed paper alone comprises approximately 18.1 percent of the city's disposed residential waste. Yard waste comprises 29.4 percent and food waste 9.5 percent of the residential waste stream.

Commercial Wastes

Of the commercial waste stream, 45.7 percent is paper products with OCC/kraft and mixed paper comprising the largest part of this category, at 21.1 percent and 12.4 percent respectively. Other organics comprise approximately one-their (32.5 percent) of the disposed waste stream; 23.3 percent is from food wastes.

Industrial Wastes

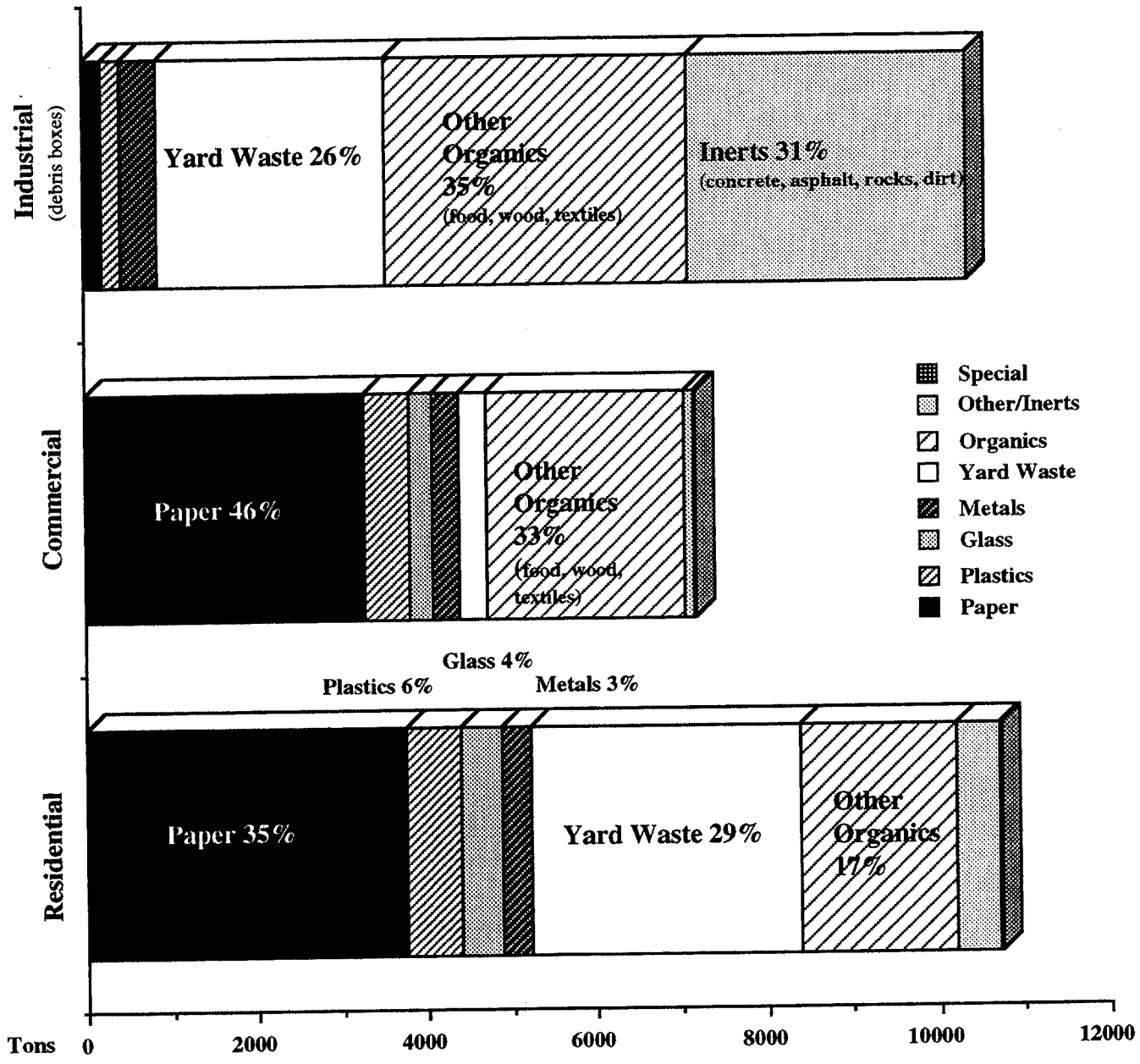
There are no industrial generators located within Los Altos. However, by CIWMB definition, industrial waste includes debris boxes. Industrial composition in Table 1.1 is based on debris boxes. Of this waste stream, 31.2 percent is in the category of other waste (inert solids). A significant portion of the disposed industrial waste stream is yard waste (25.9 percent). A number of landscape contractors reported that they routinely place yard waste into debris boxes.

Self-Haul Wastes

Self-haul waste comprise 2 percent of the total disposed waste stream. Inert wastes (63.5 percent) and wood waste (18.8 percent) comprise the largest portions of this waste stream.

Figure1.2

Disposed Waste Categories by Generator



Since self haul waste accounts for only 2%, it was not included in this graph

Table 1.1

1991 Disposed Waste Characterization

Material:	Residential %	Residential TPY	Commerical %	Commercial TPY	Industrial %	Industrial TPY	Self Haul %	Self Haul TPY	Total Disposed %	Total Disposed TPY
PAPER	**34.9**	**3,744**	**45.7**	**3,282**	**1.9**	**200**	**3.5**	**16**	**25.2**	**7,242**
OCC/Kraft	6.3	675	21.1	1,517	0.9	96	1.9	9	8	2,297
Mixed	18.1	1,940	12.4	890	0.1	15	1.4	7	9.9	2,851
Newspaper	4.1	440	3.6	260	0.3	30	0.2	1	2.5	730
High-Grade	0.3	33	2.4	175	0	0	0	0	0.7	209
Other	6.1	656	6.1	439	0.6	59	0	0	4	1,154
PLASTICS	**6**	**641**	**7.4**	**530**	**2.1**	**214**	**1.3**	**6**	**4.8**	**1,391**
HDPE	0.8	88	0.6	40	0	0	0	0	0.4	128
PET	0.1	15	0.4	29	0.1	7	0	0	0.2	52
Film	2.8	298	3.4	241	0.5	52	0.6	3	2.1	593
Other	2.2	240	3.1	219	1.5	155	0.6	3	2.1	617
GLASS	**4.4**	**472**	**3.5**	**251**	**0.1**	**7**	**0.3**	**1**	**2.5**	**732**
Refillable Beverage	0	0	0	2	0	0	0	0	0	2
Cal Redemption	0.6	69	1	74	0.1	7	0	0	0.5	151
Other Recyclable	3.7	402	2	146	0	0	0	0	1.9	548
Other Non-recyclable	0	1	0.4	28	0	0	0.2	1	0.1	30
METALS	**3.4**	**360**	**4.4**	**314**	**4.2**	**436**	**4.9**	**23**	**3.9**	**1,132**
Aluminum Cans	0.3	30	0.2	13	0.3	30	0	0	0.3	73
Bimetal	0	0	0	1	0	0	0	0	0	1
Tin F/B	1.1	117	1.5	104	0.1	15	0	0	0.8	236
Non-Fe	0.3	32	0.2	12	0.1	7	0.3	2	0.2	53
White Goods	0	0	0	0	1.4	148	1.4	7	0.5	155
Other	1.7	180	2.6	183	2.3	236	3.1	14	2.1	614
YARD WASTE	**29.4**	**3,155**	**4.8**	**344**	**25.9**	**2,675**	**3.5**	**16**	**21.5**	**6,190**
OTHER ORGANICS	**17**	**1,823**	**32.5**	**2,336**	**34.6**	**3,584**	**22.8**	**106**	**27.3**	**7,849**
Food	9.5	1,018	23.3	1,673	0	0	0.3	1	9.4	2,692
Tires/Rubber	0.1	13	5.3	383	0.7	74	0.5	2	1.6	472
Wood	0.9	94	1.4	102	14.1	1,456	18.8	87	6.1	1,740
Ag. Crop Residue	0	0	0	0	0	0	0	0	0	0
Manure	0	0	0	0	0	0	0	0	0	0
Textile/Leather	1.8	196	1	74	10.9	1,123	1.9	9	4.9	1,403
Other Misc Org.	4.7	503	1.4	104	9	931	1.3	6	5.4	1,543
OTHER WASTES	**4.8**	**513**	**1.5**	**105**	**31.2**	**3,229**	**63.6**	**295**	**14.4**	**4,143**
Inerts	4.5	486	1.1	77	31.2	3,229	63.5	295	14.2	4,087
HHW	0.3	27	0.4	28	0	0	0.1	0	0.2	56
SPECIAL WASTES*	**0.2**	**26**	**0.3**	**22**	**0**	**0**	**0.1**	**1**	**0.2**	**49**
TOTAL	**100**	**10,734**	**100**	**7,184**	**100**	**10,346**	**100**	**464**	**100**	**28,728**

Average may not sum to 100% due to rounding

*small household appliances

Assuming an average in-place bulk density of 1,200 lb/cuyd, the volume of disposed waste which corresponds to the total of 28,728 tons as shown above is 47,880 cubic yards.

Table 1.2

Projection of Disposed and Diverted Waste Quantities

		Assuming Continuation of Current Programs				Assuming Continuation of Current Programs and Implementation of SRRE			
Year	Projected Growth Rate	Annual Waste Generated	Annual Waste Diverted	Annual Waste Disposed	Waste Diverted %	Annual Waste Generated	Annual Waste Diverted	Annual Waste Disposed	Waste Diverted %
1990		30,094	4,373	25,721	15	30,094	4,373	25,721	15
1991		34,097	5,369	28,728	16	34,097	5,369	28,728	16
1992	0.99	35,013	6,314	28,699	18	35,013	8,952	26,061	26
1993	0.99	34,979	6,308	28,671	18	34,979	10,502	24,477	30
1994	0.99	34,802	6,301	28,642	18	34,802	12,392	22,410	36
1995	0.99	34,908	6,295	28,613	18	34,908	12,563	22,345	36
1996	0.99	34,874	6,289	28,585	18	34,874	16,410	18,464	47
1997	0.99	34,838	6,282	28,556	18	34,838	16,558	18,280	48
1998	0.99	34,804	6,276	28,528	18	34,804	16,858	17,946	48
1999	0.99	34,769	6,270	28,499	18	34,769	17,614	17,155	51
2000	0.99	34,735	6,264	28,471	18	34,735	17,775	16,960	51
2001	1.00	34,735	6,264	28,471	18	34,735	17,949	16,786	52
2002	1.00	34,735	6,264	28,471	18	34,735	18,265	16,470	53
2003	1.00	34,735	6,264	28,471	18	34,735	18,265	16,470	53
2004	1.00	34,735	6,264	28,471	18	34,735	18,265	16,470	53
2005	1.00	34,735	6,264	28,471	18	34,735	18,265	16,470	53
2006	1.00	34,735	6,264	28,471	18	34,735	18,265	16,470	53

Seasonality

Four seasons could impact the disposed wastes in Los Altos. Yard waste is the only category expected to undergo substantial seasonal variation in disposed waste generation. The concentration is expected to fluctuate within + 20 percent over the course of a year. (See Waste Study in Appendix A for details.)

Projected Disposed Waste Quantities

Table 1.2 shows the projected disposed waste quantities with diversions continued as it is, and with implementation of this SRRE. A 15 year projection of disposed waste is included in the SWGS report in Appendix A.

This table is based on population projections from the Association of Bay Area Governments (ABAG). Population projections are used only to calculate the escalation rate of disposed waste quantities.

Note: Preliminary 1990 census data indicates that the Los Altos population is lower than the ABAG 1990 projections available.

Solid Waste Diversion Characterization

Objective of the Study

In accordance with Title 14, Chapter 9 of the CCR, the objective of the waste diversion characterization is to determine the quantity and types of materials that are currently being diverted from permitted solid waste disposal facilities. The diversion quantities reflect the amount of materials that are generated in the City of Los Altos and diverted from the landfill via source reduction, recycling, and composting. By state law, only those materials normally disposed of at permitted solid waste landfills, representing at least 0.001 percent of the waste stream, count towards diversion. It is essential to document the existing level of waste reduction in order to determine what type of programs need to be implemented to reach state mandated diversion rates of 25 percent by 1995 and 50 percent by 2000.

Waste Diversion Flow Process

The flow of materials diverted from the waste stream is more complex than that for materials destined for disposal at a landfill. This complexity occurs because the various materials must be separated and processed (contaminants removed, material baled) to meet market specifications, and this is often done in facilities dedicated to one type of material. In this process, several processors may be involved between the generator and the end user. For some items, materials are taken directly to the processor from the generator, who re-manufactures these materials into recycled products.

Much of the recycling in Los Altos follows a similar path, flowing from the generator to a collector, who may sell the material to a dealer. In turn, the dealer processes the material before it is ultimately sold to an end user (in some cases the dealer also acts as a collector).

Materials collected for curbside recycling by LAGCo are sold to the BFI Recyclery in San Jose. The Recyclery processes and markets all the materials. Los Altos does not have a waste diversion facility within the city.

Methodology

Solid waste diversion characterization used numerous approaches to document the quantity and types of materials diverted from disposal in the city in 1990. Waste diversion data was obtained by the following mechanisms: 1) a mail survey of collectors and processors of recyclable materials, utilizing a material flow methodology; 2) a survey of city residential and non-residential diversion programs; and 3) telephone and fax communications to clarify and supplement, whenever possible, incomplete data collected through the mail survey, as well as to obtain data from additional sources.

Survey of Recyclers

In order to document the quantity and types of materials that were diverted from disposal in the city in 1990, a survey was conducted of recyclers in the area. The mailing list was developed from the following sources:

- San Jose State Center for the Development of Recycling
- Santa Clara Valley Manufacturing Group's *Commercial Recycling Guide*
- Sierra Club's *Where to Recycle in Santa Clara County*
- City of Santa Clara's list of recyclers
- Telephone books

Survey forms were mailed to recyclers to determine quantities of waste diverted by material type in 1990. To promote participation in the survey, recyclers were informed that the information that they provided would be reported in aggregate form only, to ensure confidentiality. Information requested as part of the survey included:

- Business type (e.g., broker, collector, scrap metal dealer, buy-back center, etc.)
- Anticipated percentage increase (or decrease) in recycling tonnage in 1991
- Tonnage of materials collected by type for 1990
- Source of the waste (i.e., residents, commercial businesses, industry, other)
- Purchaser of recyclables (if not end user)

A copy of the survey form is presented in Appendix B. In a number of cases it was necessary to follow up the mailed survey with phone calls to obtain the requested data.

Review of City Programs

Records from collection programs in the City of Los Altos were reviewed to obtain data on the quantities of wastes diverted from the residential waste stream (and a portion of the commercial waste stream.)

Appendix B presents a copy of the survey form used to obtain data on these programs. Residential diversion programs in the City of Los Altos include the following:

- Curbside collection program
- 20/20 center(s)
- Cardboard drop-off
- Non-profit drop-off

Commercial-industrial diversion programs in the City of Los Altos consist of the following

- Collection of recyclables from commercial businesses by privately owned recycling firms.
- Restaurant-bar glass collection.
- High-grade office paper collection.
- Cardboard collection program for commercial and retail firms.

Cross Checking

To avoid double counting, the material flow was charted for each waste type. Data obtained from collectors that reported purchasers for a waste type were eliminated from tabulation when those purchasers also reported data for that waste type. This approach allowed material to be counted only once and quantities to be determined with the best available data.

Data Reduction

Waste diversion data collected were tallied on a spreadsheet form; survey results for recyclers were reported in the aggregate, in compliance with the confidentiality agreement between the consultant conducting the study and the survey respondents. The following data were tallied:

- waste generator, (residential or commercial/industrial etc.)
- program type, such as curbside, drop-off, buy-back, or other
- quantitative estimates of materials diverted. Recyclers serving several jurisdictions were requested to provide data specific to the City of Los Altos.

Conversion Factors

Survey data reported as volumes were converted to weight using conversion factors from The National Recycling Coalition Measurement Standards and Reporting Guidelines, October 31, 1989, as shown in Appendix B. Source reduction data for diapers was calculated using a conversion factor from a document entitled *Diapers in the Waste Stream*.[1] Based on this study, it is estimated that there are 4,500 single use diapers per ton of garbage.

Landfill operators and recyclers also reported the following average weights of specific materials:

battery	44 lbs
mattress	40 lbs
laser toner cartridge	4 lbs. (empty)

Survey Response Rate

A total of 138 recyclers, brokers, collectors, end users, and operators of transfer stations and landfills were surveyed as part of the City's waste diversion characterization. Of these, 49 responded, for a response rate of 36 percent. A breakdown of the responses by category is as follows:

- 130 recyclers, brokers, collectors and end users were surveyed; 41 replied, for a response rate of 32 percent
- 8 operators of landfills and transfer stations were surveyed and all responded, for a response rate of 100 percent.

The responses to the diversion survey reflect a comprehensive reporting of solid waste transfer station and disposal facility diversion programs. Brokers and collectors, however, are "under reported" because of the unwillingness of some members of the recycling sector to divulge information they consider proprietary. Specifically, metals and some paper grades are under reported in the results because of the noncooperation of brokers and collectors in providing information on diversion of these waste materials.

Survey Results

Contributing Programs

In the City of Los Altos, data from the following recycling programs contributed to the waste diversion study

- three California redemption centers
- a curbside collection program for recyclables
- a city-sponsored office paper collection program
- a commercial cardboard collection and residential drop-off program
- one non-profit program that collects newspapers and California redemption value recyclables
- private collectors diverting paper, plastic, glass, metals, and organic material.

Summary of Diversion Data

Based on the results of the surveys, the City of Los Altos diverts an estimated 15 percent of its total solid waste stream. Given the sample size and the lack of cooperation of some brokers and collectors, the City of Los Altos did not extrapolate from the diversion survey data. Consequently the actual diversion rate for commercial and residential recycling in the city is expected to be significantly higher than the percentage measured through this study. During the short-term planning period, the city will be implementing monitoring programs that will enable the city to present a more refined estimate of diversion activity when a Plan Revision (of the SRRE) is submitted to the Board in 1996.

Table 1.3 Residential Diversion Quantities

RESIDENTIAL DIVERSION QUANTITIES

(Tons, 1990)

	SOURCE REDUCTION	CURBSIDE	APARTMENT RECYCLING	DROP-OFF (a)	BUY-BACK	20/20 CENTERS	COMPOSTING	TOTAL WITHOUT TRANSFORMATION	TRANS-FORMATION	TOTAL WITH TRANSFORMATION
PAPER	0.0	2500.0	0.0	174.0	0.0	0.0	0.0	2674.0	0.0	2674.0
corrugated containers	0.0	0.0	0.0	87.0	0.0	0.0	0.0	87.0	0.0	87.0
newspaper	0.0	2500.0	0.0	87.0	0.0	0.0	0.0	2587.0	0.0	2587.0
high grade ledger paper	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
mixed paper	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
other paper	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PLASTICS	0.0	20.0	0.0	0.0	0.0	5.6	0.0	25.6	0.0	25.6
HDPE containers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PET containers	0.0	20.0	0.0	0.0	0.0	5.6	0.0	25.6	0.0	25.6
film plastics	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
other plastics	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GLASS	0.0	676.0	0.0	0.0	0.0	208.7	0.0	884.7	0.0	884.7
refillable bev. containers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CA Redemption Value	0.0	541.0	0.0	0.0	0.0	208.7	0.0	749.7	0.0	749.7
other recyclable glass	0.0	135.0	0.0	0.0	0.0	0.0	0.0	135.0	0.0	135.0
other non-recyclable glass	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
METALS	0.0	345.0	0.0	0.0	0.0	26.3	0.0	371.3	0.0	371.3
aluminum cans	0.0	162.0	0.0	0.0	0.0	0.0	0.0	162.0	0.0	162.0
bi-metal containers	0.0	45.0	0.0	0.0	0.0	26.3	0.0	71.3	0.0	71.3
tin cans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
other ferrous	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
other aluminum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
other non-ferrous	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
white goods	0.0	138.0	0.0	0.0	0.0	0.0	0.0	138.0	0.0	138.0
YARD WASTE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
								0.0		0.0
OTHER ORGANICS	68.3	0.0	0.0	0.0	0.0	0.0	0.0	68.3	0.0	68.3
food waste	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
tires/rubber	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
wood wastes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
agricultural crop residues	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
manure	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
textiles/leather	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
diapers	68.3	0.0	0.0	0.0	0.0	0.0	0.0	68.3	0.0	68.3
other misc. organics	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER WASTES	0.0	16.1	0.0	20.9	0.0	0.0	0.0	37.0	0.0	37.0
inert solids	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
batteries (b)	0.0	0.0	0.0	1.9	0.0	0.0	0.0	1.9	0.0	1.9
oil (b)	0.0	16.1	0.0	1.3	0.0	0.0	0.0	17.4	0.0	17.4
other HHW's	0.0	0.0	0.0	17.7	0.0	0.0	0.0	17.7	0.0	17.7
SPECIAL WASTES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ash	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
sewage sludge	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
industrial sludge	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
asbestos	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
auto shredder waste	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
auto bodies	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
mattresses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
other special waste	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	68.3	3557.1	0.0	194.9	0.0	240.6	0.0	4060.9	0.0	4060.9

(a) Includes HHW Days and non-profit recycling activities.
(b) Considered Household Hazardous Wastes (HHW).

Table 1.4 Commercial/Industrial (debris boxes) Diversion Quantities

COMMERCIAL/INDUSTRIAL DIVERSION QUANTITIES

(Tons, 1990)

	SOURCE REDUCTION	CITY COMMERCIAL (b)	PRIVATE COMMERCIAL	PRIVATE INDUSTRIAL	LANDFILL SALVAGING	COMPOSTING	TOTAL WITHOUT TRANSFORMATION	TRANS-FORMATION	TOTAL WITH TRANSFORMATION
PAPER	0.0	4.0	67.0	0.0	0.0	0.0	71.0	0.0	71.0
corrugated containers	0.0	0.0	56.0	0.0	0.0	0.0	56.0	0.0	56.0
newspaper	0.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	2.0
high grade ledger paper	0.0	2.0	11.0	0.0	0.0	0.0	13.0	0.0	13.0
mixed paper	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
other paper	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PLASTICS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HDPE containers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PET containers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
film plastics	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
other plastics	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GLASS	0.0	0.0	87.5	0.0	0.0	0.0	87.5	0.0	87.5
refillable bev. containers	0.0	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
CA Redemption Value	0.0	0.0	73.0	0.0	0.0	0.0	73.0	0.0	73.0
other recyclable glass	0.0	0.0	11.0	0.0	0.0	0.0	11.0	0.0	11.0
other non-recyclable glass	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
METALS	0.0	0.5	11.6	0.0	0.0	0.0	12.1	0.0	12.1
aluminum cans	0.0	0.5	0.0	0.0	0.0	0.0	0.5	0.0	0.5
bi-metal containers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
tin cans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
other ferrous	0.0	0.0	8.8	0.0	0.0	0.0	8.8	0.0	8.8
other aluminum	0.0	0.0	0.6	0.0	0.0	0.0	0.6	0.0	0.6
other non-ferrous	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
white goods	0.0	0.0	2.2	0.0	0.0	0.0	2.2	0.0	2.2
YARD WASTE	0.0	0.0	80.0	0.0	0.0	0.0	80.0	0.0	80.0
OTHER ORGANICS	0.0	0.0	98.0	0.0	0.0	0.0	98.0	0.0	98.0
food waste	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
tires/rubber	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
wood wastes	0.0	0.0	98.0	0.0	0.0	0.0	98.0	0.0	98.0
agricultural crop residues	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
manure	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
textiles/leather	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
diapers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
other misc. organics	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER WASTES	0.0	3.0	12.0	0.0	0.0	0.0	15.0	0.0	15.0
inert solids	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
batteries (a)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
oil (a)	0.0	2.0	8.0	0.0	0.0	0.0	10.0	0.0	10.0
other HHW's	0.0	1.0	4.0	0.0	0.0	0.0	5.0	0.0	5.0
SPECIAL WASTES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ash	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
sewage sludge	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
industrial sludge	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
asbestos	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
auto shredder waste	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
auto bodies	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
mattresses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
other special waste	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	0.0	7.5	356.1	0.0	0.0	0.0	363.6	0.0	363.6

(a) Considered Household Hazardous Wastes (HHW).
(b) For period beginning September, 1990.

The results of the diversion characterization are presented in Table 1.3 for the residential waste stream, and Table 1.4 for the commercial/industrial waste stream. The quantities listed in the tables are estimates in annual tons for 1990.

Los Altos has no industry. For the base year, debris boxes (considered industrial) had no diversion to include in this study. Self haul accounts for barely two percent of the total waste stream and is not significant enough to measure diversion quantities.

Caveats Concerning Data

The following should be noted in reviewing the data presented in Tables 1.3 and 1.4:

- Where necessary, the data were apportioned based upon the population ratio of those areas for which the data were reported.
- Data for industrial wastes are included in the table with commercial waste data (except where specifically listed) because collectors do not distinguish by source in their records.
- Apartment recycling is generally not reported separately from residential recycling. However, because of the different type of collection system, a column is provided for separate reporting. One advantage of keeping separate accounting for this material is that a separate public education program is often designed for apartment dwellers, and this accounting would enable tracking of the success of such a program.
- The data for landfill salvaging were placed in the commercial table. The suppliers of the data were not able to separate it out by source because of the nature of the operation.
- Data on glass tonnages from some cities were reported as commingled. According to the Department of Conservation (DOC), as of March 1, commingled glass coming from curbside programs is assumed to contain 60 percent California redemption value glass, whereas commingled glass from a certified redemption center is assumed to contain 75 percent. This percentage is based on a recent survey for DOC and thus used for this study.
- The results for tires show quantities recycled and transformed. Some tires are sent to Mexico to be recapped. Of the quantity of tires sent to transformation, 25 percent are recovered as casings and used tires before being transformed into electricity. Of the 75 percent transformed, 25 percent is recovered as by-products: gypsum, zinc, and steel. Thus, the data reported were apportioned in this manner.

Breakdown of Data by Program

Source Reduction

The diaper services operating in the City of Los Altos reported serving 300 households, with an estimated 325 children in diapers. The diaper companies estimated an average weekly diaper use of 50 per baby, for a total of 16,250 diapers per week. Thus, a total of 68 tons of municipal refuse were diverted in the city in 1990 through the use of reusable cotton diapers.[1]

Residential Recycling

Based on the survey of recyclers and on the city's recycling programs, an estimated 4,024 tons of wastes are diverted in the City of Los Altos through residential recycling programs. These programs include residential curbside recycling, 3,541 tons, drop-off center recycling, 174 tons, and AB 20/20 (California redemption) programs, 241 tons. The estimated amounts by material type are listed separately in Table 1.3 for the residential curbside and drop-off programs.

Commercial/Industrial Recycling

The estimated quantity of solid wastes diverted by commercial/industrial recycling in 1990 was 349 tons. The city's commercial recycling programs divert 344 tons of cardboard and white ledger paper. Quantities from the city's commercial office paper and corrugated cardboard programs are listed separately in Table 1.4.

Calculation of Diversion Rate

Diversion by waste type for the City of Los Altos is presented in Table 1.5 percent diversion; this rate was calculated by:

- tabulating the tons/year disposed by waste type and waste generator
- tallying these quantities by waste type
- in a separate column, summing the quantity of waste diverted for each waste type
- adding up the quantities disposed and diverted to determine the total quantity in tons/year generated by waste type (disposed + diverted = total generated)
- dividing the quantity source reduced, recycled, and composted by the total generated to determine the diversion rate [(source reduction + recycling + composting x 100)/total generated = diversion rate percent]

Table 1.5
Quantities and Percentages of Wastes Diverted from the City's Waste Stream

Waste Source	Quantities Generated tons/year (1990)	Quantities Diverted tons/year (1990)	Percent Diversion
Residential	15,375	4,024	35%
Commercial	7,889	349	4%
Industrial	6,830	0	0%
Total	30,094	4,373	15%

Materials Targeted for Diversion

The following categories of materials are targeted for diversion through programs identified in the source reduction, recycling, composting, and special waste components of the SRRE. Only those materials that can be counted towards the AB 939 diversion targets are shown:

Paper:
corrugated containers
mixed paper
newspaper
high-grade ledger paper

Plastics:
polystyrene
PET containers
HDPE containers

Glass:
CA Redemption Value
other recyclable glass
refillable beverage containers

Metals:
aluminum cans
other ferrous
non-ferrous, incl. alum. scrap
bi-metal containers
white goods
steel food/beverage cans

Other organics:
yard waste
tires/rubber
wood wastes
textiles/leather

Other wastes:
inert solids (e.g., asphalt, concrete, and soil)

Materials Targeted for Disposal

The following list identifies the materials that are currently being disposed of in the City of Los Altos that will not be diverted from disposal by the programs identified in this SRRE. The programs identified in the SRRE do not target the following list of materials because (1) the materials are nonrecyclable, (2) the quantity being disposed of is insignificant, or (3) there is no market (existing or future). Only those materials that qualify as solid waste under AB 939 are shown.

Paper:
other paper

Plastics:
film plastics
other plastics

Glass:
other non-recyclable glass

Other organics:
food waste

Reporting Procedures

Description of Data	Source of Information
Disposal — quantity of refuse disposed by LAGCo at the Newby Island Landfill	BFI and LAGCo monthly reports
Curbside collection of recyclables	LAGCo monthly reports
Cardboard commercial collection and residential drop-off program	LAGCo monthly reports
California Redemption Centers (AB 2020)	State yearly report
Christmas Tree Collection	LAGCo yearly report

In addition, the diversion data was obtained through a survey which is included in Appendix B.

Projections

Table 1.6 provides a 15 year projection of the quantity of wastes disposed, diverted and generated by waste category and waste type under current conditons and under conditons set forth by the SRRE.

FOOTNOTES **********

1 Lehrburger, Carl, *Diapers in the Waste Stream: A Review of Waste Management and Public Policy Issues*, December 1988.

Table I.6 15-Year Generation Projections by Waste Category and Type

Material:	Basline 1990 Disposed	Diverted	Generated TPY	1992 Disposed	Diverted	Generated TPY	1995 Disposed	Diverted	Generated TPY	2000 Disposed	Diverted	Generated TPY	2006 Disposed	Diverted	Generated TPY
PAPER	**7,242**	**2,602**	**9,844**	**7,225**	**3,906**	**11,131**	**5,991**	**4,830**	**10,821**	**4,370**	**5,729**	**10,099**	**4,296**	**5,860**	**10,156**
OCC/Kraft	1,797		1,797	2,295	724	3,019	1,395	1,193	2,588	675	1,402	2,077	670	1,422	2,092
Mixed	2,351	13	2,364	2,848	84	2,932	2,671	169	2,840	1,905	570	2,475	1,895	627	2,522
Newspaper	730	2,587	3,317	729	2,986	3,715	727	3,308	4,035	700	3,417	4,117	680	3,438	4,118
High-Grade	209	2	211	200	18	218	177	31	208	155	58	213	140	62	202
Other	654		654	1,153	95	1,248	1,021	129	1,150	935	282	1,217	911	310	1,221
PLASTICS	**1,391**	**26**	**1,417**	**1,390**	**76**	**1,466**	**1,294**	**217**	**1,511**	**1,211**	**412**	**1,623**	**1,298**	**448**	**1,746**
HDPE	128		128	128	9	137	115	13	128	85	30	115	83	32	115
PET	52	26	78	52	32	84	45	33	78	5	40	45	5	40	45
Film	393		393	593	17	610	556	85	641	551	168	719	545	185	730
Other	617		617	617	19	636	578	87	665	570	174	744	665	191	856
GLASS	**732**	**973**	**1,705**	**757**	**1,108**	**1,865**	**693**	**1,131**	**1,824**	**642**	**1,235**	**1,877**	**612**	**1,254**	**1,866**
Refillable Beverage	2	4	6	2	14	16	2	14	16	2	14	16	2	14	16
Cal Redemption	151	823	974	178	923	1,101	115	928	1,043	110	945	1,055	105	948	1,053
Other Recyclable	448	146	594	547	169	716	546	186	732	500	268	768	475	283	758
Other Non-recyclable	30		30	30	2	32	30	3	33	30	7	37	30	8	38
METALS	**1,132**	**384**	**1,516**	**1,044**	**571**	**1,615**	**1,038**	**643**	**1,681**	**918**	**799**	**1,717**	**894**	**826**	**1,720**
Aluminum Cans	73	163	236	73	215	288	73	217	290	70	228	298	70	230	300
Bimetal	1	71	72	1	96	97	1	96	97	1	96	97	1	96	97
Tin F/B	136	9	145	150	23	173	150	28	178	145	50	195	141	54	195
Non-Fe	53	1	54	53	7	60	52	8	60	50	16	66	48	17	65
White Goods	155	140	295	154	225	379	150	270	420	155	293	448	144	297	441
Other	509		509	613	5	618	612	23	635	497	115	612	490	130	620
YARD WASTE	**6,190**		**6,190**	**5,924**	**360**	**6,284**	**2,040**	**4,125**	**6,165**	**1,439**	**4,696**	**6,135**	**1,400**	**4,735**	**6,135**
OTHER ORGANICS	**7,849**	**166**	**8,015**	**8,174**	**234**	**8,408**	**7,177**	**975**	**8,152**	**6,506**	**2,103**	**8,609**	**6,193**	**2,298**	**8,491**
Food	2,692		2,692	2,689		2,689	2,681	217		2,149	619	2,768	2,123	684	2,807
Tires/Rubber	472		472	471		471	470	115		400	186	586	380	198	578
Wood	1,740	98	1,838	1,738	160	1,898	1,219	512	1,731	1,198	695	1,893	991	731	1,722
Ag. Crop Residue														0	0
Manure														0	0
Textile/Leather	1,403		1,403	1,401		1,401	1,368	33		1,380	238	1,618	1,323	280	1,603
Other Misc Org.	1,543	68	1,611	1,875	74	1,949	1,439	98	1,537	1,379	365	1,744	1,376	406	1,782
OTHER WASTES	**4,143**	**52**	**4,195**	**4,137**	**58**	**4,195**	**4,065**	**640**	**4,705**	**1,838**	**2,790**	**4,628**	**1,743**	**2,830**	**4,573**
Inerts	3,087		3,087	4,083		4,083	4,010	580	4,590	1,784	2,722	4,506	1,690	2,761	4,451
HHW	56	52	108	54	58	112	55	60	115	54	68	122	53	69	122
SPECIAL WASTES*	**49**		**49**	**48**	**1**	**49**	**47**	**2**	**49**	**36**	**13**	**49**	**34**	**15**	**49**
TOTAL	**25,721**	**4,373**	**30,094**	**28,699**	**6,314**	**35,013**	**22,345**	**12,563**	**34,908**	**16,960**	**17,775**	**34,735**	**16,470**	**18,265**	**34,735**
		15%			18%			36%			51%			53%	

*small household appliances

Source Reduction Component

Introduction

Source reduction is defined in Assembly Bill 939 (Public Resources Code, 40196) 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 non-recyclable 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 precedes waste management and addresses how products are designed, manufactured, purchased, and used so as to reduce the quantity and toxicity of waste produced when the products reach the end of their useful lives. Because of this, the most effective source reduction steps must be taken at the national level. Technical options for communities considering source reduction include product reuse, reduced material volume, reduced toxicity, increased product lifetime, and decreased consumption.

Source reduction as a component of waste reduction is not currently a widely applied concept. It is, therefore, difficult to estimate the actual impact that source reduction programs will have on the waste stream. However, source reduction may be practiced at the corporate or household level through selective buying patterns and reuse of products and materials. Source reduction programs and approaches can be implemented through education, financial incentives and disincentives, and regulation, as well as research and technological developments.

Source reduction is the first step in a hierarchy of approaches to integrated waste management. California State Assembly Bill 939 reflects this by placing source reduction at the top of the integrated waste management hierarchy. Unlike recycling, composting, transformation, and disposal (the other constituents of an integrated waste management system), source reduction is a preventative measure. Source reduction focuses on reducing or preventing the generation of solid wastes that must subsequently be managed by an integrated waste management system. In preventing waste generation, the impact of source reduction is reflected in the absence of wastes from the waste stream and is therefore very difficult to quantify. Source reduction is, however, the single most effective method of reducing both the volume and the toxicity of the waste stream. Source reduction not only reduces waste, but also conserves resources and energy, as well as reducing land, air, and water impacts.

Source reduction encompasses several broad categories, including:

- reduced waste generation through decreased consumption
- reduced material weight and volume
- material reuse
- increased product durability.

Figure 2.1 lists typical examples of decreased consumption and material reuse.

Figure 2.1 Typical Examples of Source Reduction

What is Source Reduction	
Decreased Consumption	**Material Reuse**
Reduce Material Volume • Make two-sided copies • Use routing slips • Use electronic and voice mail • Buy in bulk • Offer waste reduction incentives to employees **Reduce Material Toxicity** • Use product substitutes **Increase Product Durability** • Purchase durable goods • Design durable products • Provide/use maintenance contracts to extend the life of equipment	• Use clothe towels, retreaded tires, refillable pens, reusable air filters, returnable bottles • Reuse packaging or packing material • Provide/use returnable packaging containers • Donate used equipment • Use ceramic coffee mugs • Reuse blank sides of paper for scratch • Use silverware and dishes in the cafeteria • Compost, mulch or chip on site • Rent equipment rather than buying • Use a waste exchange program • Design for reuse or recyclability

Over the long-term, effective source reduction will depend on changes in three distinct areas: (1) manufacturing and production processes; (2) retail marketing and packaging design; and (3) consumer behavior and consumption practices. The prospects for fostering change in production and packaging practices at the local level are fairly limited; such changes commonly require actions at a state or national level. In contrast, however, changes in consumer behavior and consumption patterns must begin at the local level and depend to a great extent on public education programs. To be effective, source reduction should become a factor influencing consumer

decisions in favor of bulk purchases and product reusability, recyclability, and durability. Changes in consumption patterns will eventually affect manufacturing, production, and packaging practices.

Available data on the municipal waste streams in the City of Los Altos indicate that the proportion of the residential, commercial, and industrial waste streams that is most amenable to source reduction (paper, plastic, and yard waste) is significant and could be as high as 10 percent for paper, 9 percent for plastics, and 16 percent for yard waste, depending on the source of waste. The potential for effective source reduction in the City of Los Altos is therefore very high.

Objectives

Source reduction objectives are to be implemented in the short-term planning period (1991-1995) and continued during the medium-term planning period (1996-2000). The City of Los Altos can expect to divert 3 three percent in the short term and five percent in the medium term from the total waste stream by implementing the following objectives:

- reduce the use of non-recyclable materials
- replace disposable materials and products with reusable materials and products
- reduce packaging
- encourage product substitution toward less toxic materials
- purchase repaired or repairable products
- purchase durable products
- increase the efficiency of materials used in the commercial and industrial sectors
- reduce generation of yard waste and promote backyard or on-site composting.

Target waste types for source reduction have been identified, based on three factors: (1) the results of solid waste generation studies; (2) the effectiveness of meeting the source reduction objectives; and (3) criteria that include the volume and weight of the material, the hazard created by the material, the percent content of non-renewable resources, the durability of the material, and the recyclability of the material. These target waste types are outlined below.

- packaging materials, including plastics and paper products
- construction materials, including concrete, asphalt, lumber, metals, and other inert solids
- paper, including office paper and mixed waste paper such as paper napkins, disposable bags, and non-recyclable junk mail
- yard waste
- single-use products, including disposable diapers, cups, utensils, office supplies, and personal care products
- repairable products, including appliances and electronics

Source reduction alternatives targeting the above waste types are evaluated below in the section entitled "Evaluation of Alternatives" according to their effectiveness in meeting the source reduction objectives outlined above.

Existing Conditions Description

This section describes existing source reduction activities and programs in the City of Los Altos. The jurisdiction has carefully reviewed and documented all potential and ongoing source reduction efforts, including all the city programs. Los Altos has also used a survey to identify efforts sponsored by private entities such as private businesses.

The existing source reduction diversion rate (that is measurable) is estimated to be less than one percent of the current total waste stream.

Local Government Activities

The City of Los Altos currently engages in the following source reduction activities:

- inverted rate structure with measured fees higher for greater use
- purchasing programs for products with recycled material content, retread tires, reduced packaging, and bulk purchases
- use of double-sided copiers in offices and printing
- use of non-disposable cups and utensils in food service programs
- reuse of uniforms and shop rags in public motor pool garages and facilities
- programs to provide education and information to employees and the general public on source reduction
- microfilming and computer disks for information storage
- voicemail system to reduce memos and messages
- reuse of file folders and other office supplies

Residential Activities

Residential source reduction activities in the City of Los Altos include:

- individuals composting yard wastes
- purchasing in bulk
- purchasing products with reduced or minimal packaging
- purchasing longer-lasting products
- participation in junk mail reduction programs
- purchasing products with limited or reduced amounts of environmental toxins
- modified inverted measured rates

Commercial and Industrial Activities

Commercial and industrial activities in the City of Los Altos include:

- commercial purchasing programs providing for high-volume purchases, preferences for goods with recycled materials content, and specifications for goods with higher durability
- reuse of materials

- commercial landscaping and grounds maintenance programs that specify composting of the resulting wastes
- use of scratch pads from blank sides of scrap paper
- routing memos
- reuse of file folders
- posting of source reduction and recycling reminders on bulletin boards and memos
- use of refillable pens and mechanical pencils
- use of scrap paper for interoffice communications
- rented equipment (instead of purchasing)
- donation of old equipment to schools and charities
- storing of reports on microfiche instead of paper
- use of reusable coffee filters
- storage of information binders shelved in the library for general staff use instead of providing copies for personal files
- use of shredded paper for packaging material
- reuse of cardboard boxes
- electronic and voicemail

Los Altos does not anticipate any of the above mentioned source reductions activities to be phased out or discontinued in the future.

The quantitative effectiveness of most current source reduction activities is difficult to assess, and the description of existing conditions for some source reduction activities is therefore qualitative. Additionally, many of the source reduction activities affecting the waste generated by the City of Los Altos are actually being conducted on a national scale. National efforts affecting the products purchased in stores and used by residences and businesses within the city are described below.

National Source Reduction Efforts

The following are some examples of major national source reduction efforts: [1]

- Some manufacturers offer concentrated versions of products which use less packaging (e.g., frozen juices, concentrated pesticides, and concentrated soaps).
- One manufacturer is using reusable, collapsible or stackable boxes to replace expendable corrugated boxes for parts delivery from its suppliers.
- Over the past ten years aluminum beverage containers have been reduced in thickness and hence weight.
- Packaging changes initiated by one manufacturer include:
  - Disposable diapers and diaper packages changed so that net total amount of materials in product and package was 50 percent less then preceding design.
  - Detergent with bleach eliminates need for separate purchase of bleach.
  - Half-gallon ice cream cartons have been reduced in weight by 30 percent over the last five years by changing the container's materials.

- One manufacturer changed the tub of a dishwasher from enameled steel to engineered plastic, which enables the warranty on the dishwasher to be increased because the tub is more durable.
- A new blow-molding tool for plastic (HDPE) milk bottles reduces their weight 10 percent while increasing strength.
- A heat-set technology makes it possible to use PET containers for liquids that must be hot-filled. The new technology allowed a juice company to switch from glass to plastic bottles, resulting in a 25 percent reduction in weight and long-term cost savings in bottling and shipping.
- One soap manufacturer has made a single-bar shampoo soap since about 1960; while this product requires some packaging, it avoids the use of larger containers.
- Plastic bags bought by a major "fast food" chain to ship products to its stores are de signed to be reused as garbage bags.
- A large video rental and sales chain, trains its sales people to reuse the distinctive plastic bags that tapes are carried in and to ask customers to return tapes in the bags. This results in a savings of about $1 million and over 25 million bags annually.

Evaluation of Alternatives

This section presents alternatives for implementing successful source reduction programs that meet the objectives outlined above. Each alternative consists of several approaches to implementing the alternative; these approaches are called "programs" in this Source Reduction Component. Each of the alternatives is evaluated according to a set of criteria specified in the regulations implementing AB 939. Program costs are approximate and program details should be considered preliminary. Cost and program details will be refined during development of specific programs.

Many of these alternatives are complementary to each other and depend significantly on the implementation of other alternatives, programs, or components presented elsewhere in the Source Reduction and Recycling element (SRRE), such as recycling or composting components. Where possible, these relationships have been indicated in the criteria for evaluating the alternatives. An additional consideration in evaluating the alternatives is that their effectiveness and impact need to be considered on the basis of how several alternatives or programs will work together as a system, and not necessarily as alternatives independent of one another.

The source reduction alternatives have been grouped into four general categories:

(1) rate structure modifications, including local waste disposal fee modification and quantity-based local user fees
(2) economic incentives, including loans, grants, and loan guarantees, reduced business license fees, and deposits, refunds, and rebates

(3) technical assistance and public education, including waste audits, technical assistance to industry and consumer organizations, backyard composting workshops, educational efforts, public recognition activities, and municipal source reduction programs
(4) regulatory programs, including adoption of local ordinances to enhance source reduction, procurement programs, source reduction planning requirements by waste generators, product bans, and local land-use requirements.

Each of the four source reduction alternatives, is described below and then evaluated according to a set of criteria specified by the regulations governing AB 939.

Alternative 1 - Rate Structure Modifications

Source reduction activities can be encouraged through rate structure modifications, including disposal fees and quantity-based user fees for garbage collection services. The rate structure modifications described below address all source reduction objectives identified above in the section entitled "Objectives" and may be applied to residential and non-residential generators.

Disposal Fees– Disposal fees at the landfill could be modified to promote source reduction by making the cost of disposal for non-recyclable and non-reusable wastes relatively high. Fees could also be imposed for goods and products that may be repaired, salvaged, or composted. This type of fee structure would serve to divert certain types of reusable materials from the waste stream. It would also create an incentive for purchasers of products to consider the costs of the products' eventual disposal in their purchasing decisions.

Quantity-based User Fees–These fees involve calculating collection and disposal fees based upon the amount of waste collected. This is similar in principle to other service-based utility charges such as water and electricity. Generators are charged fees according to the number of cans used, the number of bags collected, or the frequency of collection. Variable rate fees are directly proportional to actual disposal costs; consequently, residents have the opportunity to reduce costs by generating less waste.

There are a number of variants to the rate structure alternative, including:

- Use of a base subscription fee to cover fixed collection costs, plus a flat per-unit volume charge;
- Fees that rise according to increasing volume; and
- Charges based upon weight instead of volume.

These variants require some flexibility in the delivery of service to households and will lead to variation in whether containers are provided by the collector or provided by the generator; the types and sizes of containers used; and the use of stickers or special tags purchased to identify legitimate containers.

Most systems that currently charge a variable fee do so using volume as the basis. However, some communities support the concept that a weight-based system would be more equitable because not every container is necessarily full and the densities of some wastes are different from others. Some cities are experimenting with weight-based systems even though they require more collection time. Another requirement of these systems is that the collection vehicle have a scale and some type of recordkeeping system to track the weight of the wastes by customer.

Jurisdictions implementing quantity-based user fees or variable rate structures have frequently found that they do result in reduced quantities of disposed waste. Because of the reduction in waste quantities, however, the projected revenues generated by the system are often overestimated and insufficient to cover fixed costs. This problem may be solved through the use of a subscription fee to cover fixed costs, plus a variable fee for the actual quantities of waste collected.

Quantity-based user fees are most successful when free or low-cost collection of recyclables is provided in addition to collection of non-recyclables for disposal. Implementing recycling and yard waste programs in conjunction with the variable rate structure provides generators with alternatives to divert wastes from collection and disposal and provides a direct link between fee levels and generated quantities of non-recyclable wastes. Variable rate structures, however, do require both anti-dumping ordinances and anti-scavenging ordinances to deter these activities, since the variable rates and the recycling programs will tend to provide incentives for both dumping and scavenging.

Rate structure modifications are evaluated below to determine whether this alternative is appropriate for the City of Los Altos as well as to compare it to other alternatives.

Effectiveness– Rate structure modifications can be very effective in encouraging source reduction, since the cost of disposal or collection of disposables can be high. The economic incentive to reduce disposed waste will cause generators to become more conscious of waste generation and may alter their habits to reduce the amount of material generated through purchasing decisions, backyard composting, product reuse, and other source reduction activities. Additionally, variable rate structures provide an incentive for increased participation in recycling and community composting programs. Studies have shown that, during the first year of operation, a volume-based rate system can reduce the volume of waste requiring disposal by 25 to 50 percent, although the weight of the waste tends to increase due to compaction. This assumes that no recycling programs are in effect. For communities where collection programs for recyclables are already in place, the impact of variable rate structures would be less significant.

The estimated impact on the waste stream of variable rate structures is difficult to quantify and depends on two factors: (1) the participation of waste generators in source reduction programs due to higher collection and disposal fees, and (2) the effectiveness of the source reduction activities undertaken by participating generators. These factors are sensitive to the rate at which collection and disposal fees rise; as fees increase, participation and effectiveness will increase. However, there is an upper limit to the variable rate structure beyond which illegal dumping will begin to occur.

Hazard– There is no direct environmental hazard associated with rate structure modifications. However, increased disposal and collection costs could result in an increase in illegal disposal, both on public property and in the disposal containers of commercial businesses. Variable rate structures may necessitate the installation of locking dumpster mechanisms for commercial containers. Illegal dumping could result in environmental and public health hazards.

Ability to Accommodate Change– Modifications to rate structures, in general, are easily adapted to changing conditions. Rate structures can also be further changed and modified as circumstances warrant. Over the medium- and long-term, this alternative is quite flexible. Most jurisdictions may find that their disposal and collection fees are not as flexible in the immediate time frame because of outstanding contracts with haulers and landfill operators. Additionally, once volume-based rates are established, subsequent rate changes require the approval of the jurisdiction's governing body.

Consequences to the Waste Stream– Rate structure modifications would be designed to reduce waste at the source and avoid substitution of a product or material that results in an equivalent or greater amount of waste being generated. Some shifting of wastes will occur in conversion to a volume-based system as more waste is compacted into each can, increasing the density of the waste stream. Rate structure modifications provide a strong incentive to divert items from the waste stream when other programs such as recycling and composting are available. The impact of this alternative, in concert with these other programs, is that the waste stream may be of lower volume, higher density, and contain much lower proportions of recyclables and yard wastes.

Implementation Period– Implementation of this alternative could occur within a period of months to a year and is well within the short-term planning period. However, potential opposition from the community and local government agencies could preclude full implementation in the short-term planning period.

Facility Requirements– No additional facilities are needed to implement rate structure modifications.

Consistency with Local Plans and Policies– This alternative is consistent with the plans, policies, and ordinances of the City of Los Altos.

Institutional Barriers– The rate setting and approval process may require changes to current institutional relationships between local agencies responsible for administering the waste management program and those responsible for setting and approving local rates.

Estimated Cost. Implementing rate structure modifications would require at least six major steps:

- a rate study to determine appropriate rate structures for achieving the desired level of participation in source reduction programs

- a determination of how the proposed rate structure would impact the fixed and variable costs of collection and disposal
- review and approval by the City of Los Altos (including a public hearing)
- generation of informational and educational materials
- procurement of either containers or approved stickers for collection bags
- modification of existing billing operations

Costs for implementing the rate structure modifications in the City of Los Altos are estimated to range from minor to substantial and would be covered in new rates established.

End Uses– Not applicable.

Alternative 2 - Economic Incentives and Disincentives

Source reduction activities can be encouraged through economic incentives and disincentives. These include tax credits and exemptions, grants, loans, loan guarantees, reduced business license fees, penalties, and fines. At the state or national level, incentives and disincentives include deposits, refunds, rebates, and advanced disposal fees. Economic incentives and disincentives address all source reduction objectives identified above in the section entitled "Objectives."

Economic incentives and disincentives can foster source reduction in three ways: (1) direct economic benefits provided to businesses and consumers who participate in source reduction programs; (2) economic assistance to groups and organizations whose mission includes fostering source reduction and supporting the community's waste management goals and objectives; and (3) placing a penalty upon the behavior, activity, or lack of action on the part of waste generators.

Direct Economic Benefits– Direct economic benefits are designed to encourage source reduction by providing an incentive to businesses and private organizations to implement source reduction programs and integrate source reduction activities into their operations. For example, tax credits and/or exemptions can be given to businesses that implement formal source reduction activities for manufacturing or procurement. Loans, grants, and loan guarantees can provide direct economic assistance to businesses for the purpose of implementing source reduction activities. Such economic assistance includes funds to purchase copy machines that produce double-sided copies and source reduction and recycling education materials for staff of these businesses. Reduced business license fees can also be granted to businesses that implement source reduction activities.

Economic Incentives– Economic assistance incentives are designed to enhance the effectiveness of other source reduction alternatives and programs. These economic incentives are primarily intended to support groups and programs that contribute to the education and technical assistance efforts of the community's source reduction campaign. For example, the City of Los Altos could provide loans, loan guarantees, or grants to encourage the economic development of

businesses, non-profit groups, or associations that promote source reduction or otherwise foster waste reduction. Program(s) developed by the recipients of grants and loans could enhance local community source reduction programs such as public education, source reduction awareness campaigns, and any other aspect or component of the overall waste reduction effort.

For example, the City of Los Altos could provide a grant to the local chapter of an environmental group or public service organization to develop and implement composting workshops. These workshops could be timed to coincide with the beginning of other programs and alternatives, such as variable disposal rates and backyard composting programs. The City of Los Altos could provide funding and meeting rooms for workshops given by local chapters of conservation groups on source reduction techniques for the managers of commercial procurement programs. In addition, the City of Los Altos can also lend its support in exploring and developing other funding sources such as grants, industry financial support, in-kind support (donations of composting bins or use of facilities for workshop seminars), and private contributions to be used in developing and implementing source reduction programs.

This program emphasizes the provision of nominal amounts of support to facilitate the primarily volunteer efforts of local or regional groups and associations seeking to foster source reduction efforts at the community level. The Los Altos could provide both facilities and financial assistance to defray some of the costs of providing technical assistance and public education offered by these groups. This is one way that the Los Altos might forge a relationship and working partnership with volunteer and community interest groups and associations who seek to further community waste management goals and objectives. This alternative enables the City of Los Altos to utilize the expertise and resources of volunteer interest groups in the community.

Economic Disincentives– Penalties and/or fines could be imposed by the City of Los Altos on businesses that do not develop and implement source reduction programs and practices. Alternatively, the city could impose a fine on businesses that fail to complete a short (one or two page) form providing data on their waste stream and outlining their source reduction practices. In addition, businesses could be required to demonstrate a program to purchase feedstock, inputs, materials, or inventories that have the minimum packaging possible (such as buying in bulk). Technical assistance could be provided to businesses for this program in the form of a pamphlet and informational flyer describing the kinds of data sought by Los Altos and its usefulness.

The requirements of this type of program could be restricted to large commercial or institutional generators, thereby reducing enforcement costs. This requirement would serve to highlight the importance of community waste reduction efforts to businesses. This program would provide a source of funding for other selected source reduction programs. For example, any fines collected could be allocated to fund programs conducted by local community groups to provide education and technical assistance for backyard composting programs. Moreover, this type of program would generate valuable waste stream data on commercial businesses, as well as on source reduction practices. These data could be used to monitor changes in the waste stream over time and to evaluate the impact of source reduction programs on the waste stream. The form could be filed once a year with the local tax assessor or when obtaining and/or renewing a busi-

ness license. Fees or penalties could be imposed on a yearly or quarterly basis.

State and/or National Efforts– Advanced disposal fees can be imposed at the state or national level on certain products that are either non-recyclable or non-reusable. Background research into this type of program has recently been completed for the CIWMB and is under consideration. Products with excess packaging could also be made economically unattractive. A fee would be imposed on products that meet the following criteria: disposable, non-recyclable, or non-reusable; substitutes that were durable, reusable, or recyclable would need to be available. For example, a fee could be placed on disposable products such as pens, razors, cameras, beverage containers, utensils, personal care products, and disposable diapers. These fees could also be applied to products with a range of useful lifespans, with the fee applied to products with shorter lifespans to induce the consumer to purchase the longer-lasting alternatives. Examples of these kinds of products are tires, batteries, and appliances.

This approach, now under consideration in California, could seek to establish a fee structure that creates a hierarchy of incentives to alter consumer behavior, as follows: (1) buy reusable, recyclable, and durable products; (2) repair older items such as white goods (replacement appliances may entail a fee); and finally, (3) purchase only what is necessary of products that are disposable and have no substitutes. Finally, deposits, refunds, and rebates can be provided for hard-to-recycle materials or materials that are non-durable, as well as for recycled or recyclable materials. This provides a positive incentive to grant purchase preferences to durable, reusable, recyclable products.

This alternative is evaluated below to determine whether is appropriate for the City of Los Altos, as well as to compare it to other alternatives.

Effectiveness– Advanced disposal fees present an excellent mechanism for creating an incentive for consumers to source reduce by purchasing reusable, recyclable, and durable goods and by avoiding disposable, non-reusable, and non-recyclable products. Targeted sources for economic incentives include business and commercial sources (for direct economic incentives and disincentives) and both residential and non-residential (for incentives applied through education and technical assistance programs). Additionally, advanced disposal fees would target residential and non-residential generators, as well as retail vendors of products generally consumed and disposed of by residential generators.

Hazard– There are no environmental hazards created by the economic incentives and disincentives presented in this alternative.

Ability to Accommodate Change– Economic incentives can be modified to accommodate to changes in consumption patterns, availability of materials, and the economy. As the City of Los Altos, the waste management system, and the waste stream itself change over time, the ability of both businesses and private groups to apply economic incentives to source reduction efforts will change as well. Economic incentives are readily adaptable to new source reduction techniques and approaches as the latter become available, and as new methods and programs are developed.

Consequences on the Waste Stream– Economic incentives, whether applied directly by businesses or indirectly through education and technical assistance programs, will reduce the amount of solid waste disposed. Changes in the waste stream composition will depend on the materials targeted by the incentive programs. The greatest potential for shifts in the waste stream composition would result from programs directed toward (1) backyard composting, (2) commercial procurement programs, and (3) consumer purchasing awareness programs. Waste stream materials affected by these types of programs are yard wastes and wood cuttings, office paper, plastic and paper packaging, corrugated cardboard, and other packaging products.

Implementation Period– Economic incentives must be approved by the Los Altos City Council. The amount of time required for the approval process and implementation of the program can range from 2 to 3 months to several years. Modifications to any economic incentive programs would undergo a similar approval process. Additionally, the implementation period for advanced disposal fees would depend on the types of fees and products involved.

Facility Requirements– No facilities are needed to implement economic incentives in jurisdictions in the City of Los Altos.

Consistency with Local Plans and Policies– Providing economic assistance to businesses within the City of Los Altos or charging an advanced disposal fee may have no historical precedent.

Institutional Barriers– The incentives proposed under this alternative would in many cases have to be funded by each municipality through general funds intended to serve the solid waste collection and disposal system. This could, in many cases, result in a need for rate increases to cover the expense of the incentive program. The disincentives presented under this alternative would not require funding and would actually generate revenue. The City of Los Altos must administer a system for collecting and dispersing revenues gained through the fees, fines, and penalties.

Estimated Cost– The costs of this alternative would include the use of the City of Los Altos staff resources to develop and administer the incentive and disincentive programs. Staff resources would be necessary to develop, approve, implement, and administer each community project funded by the City of Los Altos. Additional costs include the direct dollar amounts of any grants or funding provided under the incentive programs, although the disincentive programs would generate some level of revenue.

End Uses– Not applicable.

Alternative 3 - Technical Assistance, Education, and Promotion

The programs presented in this alternative address all source reduction objectives identified above in the section entitled "Objectives." These activities include waste evaluations, technical assistance, educational efforts, promotional programs (i.e., public recognition and awards), and

municipal source reduction programs.

Waste Evaluations– Waste evaluations identify the waste types generated by a business that can be targeted for source reduction activities. A number of approaches to waste evaluations could be implemented by the City of Los Altos. For example, the city could assist selected, large-quantity commercial generators in the community to conduct waste evaluations to identify what types and amounts of wastes are being generated and to assist them in identifying and implementing source reduction techniques. Waste evaluations might be restricted to certain categories of commercial generators according to Standard Industrial Classification (SIC) codes, employee size, or by the quantity and type of wastes known to be generated by those enterprises. Restricting, or selecting, the number of generators that will complete these waste evaluations reduces the administrative burden and cost of these programs. Additionally, restricting the scope of this program ensures greater effectiveness by focusing on larger generators that contribute significantly to the waste stream. The City of Los Altos could exempt businesses in the service sector, such as professional services and retailers, as well as provide for special programs for institutional generators, such as hospitals, convalescent homes, and government facilities.

Data collected from the waste evaluations could also be used for:

(1) assessing proper waste disposal fees;
(2) controlling the disposal of banned wastes (if any) into the waste stream (e.g., corrugated cardboard, organic wastes, and household hazardous or special wastes); and
(3) establishing a baseline for waste generation data from which to measure future progress in waste reduction.

These evaluations could be required periodically to provide for monitoring and evaluation of generator progress and could be made a provision of the waste generator's business license or waste disposal contract. 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 to design and implement programs reducing waste generation.

Technical Assistance– Technical assistance to businesses and consumers can be accomplished through workshops and seminars that address practical ways businesses and consumers can reduce the quantity of wastes generated. Topics can include (1) decreased consumption; (2) reuse and recycling of materials; (3) procurement practices with preferences for reduced packaging, (4) increased durability, and increased recycled materials content; (5) increased manufacturing efficiency; and (6) composting of yard wastes at the site of generation.

Because yard waste is the largest component of the waste stream, source reduction or diversion programs targeted at these wastes can significantly impact the amount of waste disposed by the community. Although technical assistance programs are often targeted at residential generators, these programs could also be applied to commercial and institutional generators of yard waste, including public agencies. Institutional generators, while fewer in number, often have commercial grounds management services to whom yard waste responsibilities can be delegated.

Educational Efforts– Educational efforts by the City of Los Altos would be an invaluable means of developing consumer awareness about the benefits of source reduction and changing consumption patterns. Implementing public education programs increases awareness of the solid waste problem, the economic and environmental benefits of source reduction programs, and the regulatory requirements of source reduction programs. These programs may also seek to change consumer purchasing patterns to reflect source reduction concerns. Educational efforts include developing and sponsoring consumer awareness programs, school curricula, seminars, and public forums.

In implementing public education programs, the City of Los Altos would act as a catalyst for source reduction efforts and serve as a clearinghouse for information on source reduction techniques. This would enable different sectors of the community (public and private, residential and commercial) to efficiently exchange source reduction information. Examples of this include:

- providing businesses with information on how to reduce waste disposal by reducing generation and reusing products
- providing source reduction pointers ranging from procurement practices to the use of double-sided copying and using waste paper as scratch paper.
- encouraging consumer organizations to meet with businesses to develop different approaches to product retailing
- offering businesses engaged in fostering source reduction (such as bulk-purchase stores or stores catering to yard waste composting activities) the opportunity to conduct work shops or seminars

Public education programs are vital to the success of other programs (such as backyard composting) for community groups seeking to participate in source reduction efforts.

Public Recognition and Awards– Public recognition can be used by the City of Los Altos to publicly acknowledge businesses that have implemented source reduction activities. Awards could also be presented to community groups or individuals that are promoting source reduction in the community either through example or through education. Through public recognition, the City of Los Altos can generate public support for source reduction efforts by recognizing businesses, private groups, and individuals who actively engage in source reduction efforts and support the community's source reduction programs. These programs serve to complement other source reduction programs such as public education, technical assistance, and grant programs. Approaches developed for this alternative include local pride campaigns emphasizing waste reduction and environmental awareness; providing city-sponsored door and window emblems for participating businesses; and reporting in the local newspaper examples of exemplary source reduction programs. These programs could enhance participation in other programs such as waste audits and commercial reporting requirements for source reduction programs.

Municipal Source Reduction Programs– These programs involve all methods to implement source reduction that are not associated with purchasing decisions. They require the City of Los Altos to undertake a number of activities aimed at altering the behavior of its own staff and

operations to reduce the amount of waste generated on a day-to-day basis. These activities could include continuing education programs familiarizing people with source reduction practices such as:

- double-sided copying
- increasing the use of scratch paper
- making fewer drafts of reports
- using electronic and voice mail

This alternative provides an opportunity for the City of Los Altos itself to develop and implement a model source reduction program that can be used as an example for other private, public, and commercial entities in the area.

The following evaluation of technical assistance, education, and promotion activities for source reduction includes: waste evaluations; technical assistance; composting programs; educational efforts; public recognition and awards; and municipal source reduction programs.

This alternative is evaluated below to determine whether it is appropriate for the City of Los Altos, as well as to compare it to other alternatives.

Effectiveness– An effective technical assistance program combined with education and promotion can result in significant reductions in quantities of solid waste disposed. Actual quantities of waste diverted are difficult to estimate and are dependent upon (1) the types of programs selected, (2) the scope of each program, and (3) the materials and generators targeted for program impact. The programs and approaches outlined by this alternative combine several factors that point to potentially high returns in terms of waste diverted through source reduction. First, this alternative targets the entire spectrum of waste generators: residential and non-residential/commercial. Second, the alternative targets the entire spectrum of wastes in the waste stream, from paper and plastic packaging to yard wastes and non-durable, disposable products.

Finally, this alternative consistently aims to use all existing resources within the community in terms of public service and environmental groups, associations, businesses, and private individuals. This alternative seeks to achieve gains in source reduction by utilizing non-public community resources pressed into service by well-organized and administered programs to increase awareness, achieve technology and information transfer, and publicly reward top performers. In this way, the programs outlined under this alternative support, enhance, and increase the effectiveness of other source reduction programs and alternatives.

Hazard– There are no hazards associated with the programs presented by this alternative. The City of Los Altos may seek to ensure that proper composting techniques are used so that no public health or fire hazards are created.

Ability to Accommodate Change– This alternative is easily adaptable to change as new methods and programs are developed. This alternative also readily accommodates to change in the waste stream, as well as to changes in consumer purchasing behavior and available products and alternatives. Indeed, once the public is sensitized to the City of Los Altos program of

heightened environmental awareness, it may in fact be easier to introduce new concepts to further change public behavior. As the community, the waste management system, and the waste stream itself change over time, the expertise and abilities of community resources will change also. New techniques and approaches will become available to Los Altos by virtue of the informal relationship between the public agencies, businesses, households, and community groups. Programs for public recognition, local pride, and environmental awareness can all be readily changed in their focus, scope, and intensity to accommodate changes in local waste management programs, changes in the waste stream, seasonal variations in waste characteristics, and other factors.

Consequences to the Waste Stream– Technical assistance, education, and promotional activities would be designed to (1) reduce waste at the source, and (2) avoid substitution of a product or material that results in an equivalent or greater amount of waste being generated. Direct community and business involvement with, and participation in, carefully implemented programs will reduce the amount of solid waste disposed. Changes in the waste stream composition will depend on the effectiveness of the technical assistance, public education, and promotion efforts and on the materials targeted for reduction by those responding to the message of these programs. The most likely areas for significant impact would be from programs aimed at backyard composting, commercial purchasing and procurement, office source reduction, and consumer-purchasing awareness programs. The waste stream materials affected by these types of programs are:

- yard wastes and wood cuttings
- office paper and plastic packaging
- corrugated cardboard
- other packaging products

Implementation Period– This alternative can provide a range of options with respect to the scope and duration of the various programs outlined. Initial efforts in technical assistance, public education, and promotional activities can be implemented in the short-term planning period. The need for additional staffing and the more involved aspects of the alternative, such as developing school curricula, are the main factors that could delay implementation to the medium-term.

Facility Requirements– No additional municipal facilities in the City of Los Altos would be required. Existing educational facilities could serve as locations for seminars and educational workshops.

Consistency with Local Plans and Policies– Technical assistance, education, and promotional activities are consistent with current policies in the City of Los Altos.

Institutional Barriers– There are no institutional barriers to implementing technical assistance, education, and promotional activities for source reduction.

Estimated Cost– The costs for technical assistance, education, and promotion will vary depending on a jurisdiction's commitment to funding a broad spectrum of programs. Generally, the cost of any of these programs will vary dramatically depending upon the scope of

implementation. Each of the programs outlined in this alternative would require resources from the City of Los Altos for developing and administering the program. Although staffing would constitute the majority of the costs of implementing technical assistance, public education, and promotional activities, the programs outlined under this alternative involve some direct costs including: (1) costs associated with promotional brochures, pamphlets, flyers, doorhangers, and (2) production costs for any use of the media or of outside consultants. Additional costs include those for publicity and public relations associated with awarding recognition and highlighting of specific activities within the community.

The costs for the waste evaluation depend on the level of information collected. The City of Los Altos will structure the requirements of this program so that target generators can conduct the waste evaluation using in-house staff and expertise. The bulk of the cost of this program involves staff resources to conduct the waste evaluation and to process the resulting data.

The costs associated with a municipal source reduction program are similar to those for developing and implementing any kind of awareness program within an institutional setting. The primary cost will be for staff time to develop and implement a source reduction policy and program for the City of Los Altos. Additional costs include preparing and disseminating informational materials to staff, perhaps in the form of pamphlets or flyers posted at appropriate places in the work place.

Total costs for the City of Los Altos are estimated to range from $2,000 to $4,000.

End Uses– Not applicable.

Alternative 4 - Regulatory Programs

Several regulatory program alternatives are available to the City of Los Altos that address the source reduction objectives outlined above in the section entitled "Objectives." These programs include:

- local procurement ordinances
- required waste reduction planning and reporting
- local product bans
- local land-use planning requirements

Regulatory programs require continuous enforcement efforts.

Local Procurement Ordinances– These ordinances involve adopting a procurement policy for the City of Los Altos specifying that several criteria be considered in the procurement selection of products and packaging, including: durability, recyclability, reusability, and recycled material content. Additionally, the City of Los Altos could specify that any business or organization holding a contract with the jurisdiction would have to have a source reduction plan or program and provide products or materials according to the above criteria. The City of Los Altos could adopt purchasing preferences and establish set-asides for recycled products or reusable products.

Waste Reduction Plans– These plans involve establishing waste reduction planning and

reporting requirements for large, commercial or institutional waste generators. Waste reduction planning and reporting would require each business to establish a source reduction plan outlining what source reduction activities will be implemented. Businesses would also be required to report quantities of waste source reduced. One variant of this program would be to require the larger institutional and commercial waste generators in the community to implement the source reduction elements (and perhaps other elements, as well) similar to those of Assembly Bill 939. These entities would be held responsible for developing and implementing a plan that reduces the amount of waste disposed through source reduction (as well as recycling and composting) that satisfies the diversion requirements similar to those of AB 939. These institutions and commercial businesses could report their progress on a regular basis, for example (1) when they apply for business license renewal, (2) when they pay their taxes, or (3) before the city or any private waste hauler renews a waste disposal agreement with them.

Product Bans– These are bans on targeted products and packaging techniques that result in a reduction of waste at the source. Bans might be considered on products and packaging that do not lend themselves to easy recyclability or source reduction. The criteria for product bans are similar to those used to determine the applicability of advanced disposal fees: the product must be disposable or difficult to reuse or recycle and must have environmentally sound substitutes (e.g., razors, pens, non-reusable beverage containers). For example, some communities have banned polystyrene foam packaging from fast food restaurants. Other communities have banned items such as non-recyclable beverage containers. Communities that pursue this kind of alternative often adopt a time limit or phase-out period for the ban to take effect, providing time for businesses and others to adjust to the policy and identify substitutes.

Land Use Requirements– Land use and development requirements involve establishing incentives and disincentives to land use and development that promote source reduction. For example, the City of Los Altos could enact regulations requiring waste management planning as a condition for opening a new business, relocating an old one, or building or otherwise developing property for commercial or residential purposes. The required planning would consist of describing (1) how much and what type of waste to be added to the waste stream, and (2) what programs to be implemented to encourage source reduction on the developed area.

The alternative of providing regulatory programs to achieve source reduction objectives is evaluated below according to mandated criteria to determine whether it is appropriate for the City of Los Altos, as well as to compare it to other alternatives.

Effectiveness– The effectiveness of regulatory programs would depend on (1) the level of regulation imposed by the City of Los Altos, (2) the materials targeted, (3) adherence to the regulations by the community, and (4) the level of enforcement.

Targeted sources for regulatory programs include:

- the City of Los Altos administrative offices and other operations
- larger commercial and institutional generators
- residential and commercial consumers of banned products

- real estate developers

Materials diverted by regulatory approaches include (1) paper products and packaging; (2) plastic products and packaging; (3) all disposable items; (4) tires; (5) batteries; (6) non-reusable food service items; (7) food wastes; and (8) yard and wood wastes.

Hazard– There are no environmental hazards associated with the regulatory programs described above.

Ability to Accommodate Change– The regulatory measures outlined in this alternative vary in their flexibility to changing social and economic conditions. Procurement policies, waste reduction plans, and land development requirements are all fairly flexible and can readily accommodate to new circumstances in source reduction techniques and processes, as well as to changes in local source reduction programs and regulations. These programs can adapt to new types of packaging, new products and marketing formats, and to changes in the waste stream due to consumer behavior. Product bans, however, will not adapt quickly to change. Bans do not respond to changes in the marketplace or to new developments and techniques for using the product that might make it more acceptable for reuse or recycling. Common to each of the regulatory programs is the degree of inflexibility associated with the need to submit any regulatory program to the formal approval process required by the City of Los Altos.

Consequences to the Waste Stream– Changes in the waste stream composition will depend on the effectiveness of each program. However, large changes in the waste stream could result from the availability of alternative products for procurement programs. Institutional or commercial generators have the potential for impacting specific waste categories (such as disposable diapers, food wastes, high-grade paper, or corrugated packaging and cardboard). A product ban will reduce the quantities of the banned product present in the waste stream. However, the ban could tend to increase the presence of product substitutes in the waste stream. The effect of product substitutes must be carefully considered when implementing a product ban to ensure that the substitutes do not themselves present problems involving increased volumes or toxicities of wastes disposed.

Implementation Period– Procurement programs, waste reduction plans, and land-development plans can all be implemented in the short-term planning period. With product bans, however, communities usually allow a period of time for consumers, producers, and retailers to adjust to the effects of the ban. In addition, implementing a product ban over a longer time frame may allow for the opportunity to pursue this alternative in conjunction with neighboring jurisdictions. However, each of the regulatory programs outlined in this alternative would have to undergo a complex approval process, as well as anticipated resistance by businesses to further regulation.

Facility Needs– There are no facility requirements for this alternative.

Consistency with Local Plans and Policies– Regulatory programs appear to be consistent with municipal policy for the City of Los Altos.

Institutional Barriers– Purchasing and procurement programs within the diverse public agencies will have to be coordinated in order to achieve a city-wide impact from a source reduction procurement program. While purchasing and procurement itself is often centralized within a city's operations, the individual agencies receiving or consuming the goods and services purchased must agree to any aspects of their purchase requests that would differ from their normal specifications. There are no institutional barriers presented by a product ban program, although there may be unknown legal and enforcement ramifications associated with excluding a product from the market by implementing a local product ban.

Estimated Cost– Costs for regulatory programs largely depend on the level of regulatory programs that a jurisdiction chooses to pursue. Each of the programs outlined in this alternative would require resources from the City of Los Altos for developing, administering, implementing, and monitoring the program. Furthermore, each of the programs would involve costs associated with legal fees and staffing incurred during the approval process. Moreover, suitable products that meet source reduction requirements (and therefore identified as viable substitutes for products normally purchased), might be higher in cost to purchase. This would inflate the costs of procuring these items. Total costs for the City of Los Altos are estimated to range from minor to substantial.

End Uses– Not applicable

Selection of Program

In the previous section, four categories of alternatives were presented, each having several programs or approaches from which to select. Each category was evaluated according to a range of criteria mandated by the regulations governing AB 939. In selecting among alternatives and programs, the City of Los Altos considered the following critical factors: (1) the degree to which each alternative and program is appropriate to the conditions of the jurisdiction (i.e., goals, objectives, policy environment, waste stream, and solid waste management system), and (2) the degree to which the alternatives and programs complement each other and form a coherent, comprehensive, and cost-effective package.

Based on the results of the evaluation and assessment of the alternatives and programs, the programs and alternatives selected to meet the goals and objectives of this component in the short-term and medium-term planning periods are presented below.

Short-Term Planning Period

In order to meet the goals and objectives outlined in this component, the City of Los Altos will have to divert approximately three percent of the total waste stream in the short-term planning period. The City of Los Altos has selected the following programs and alternatives:

- Continue a variable rate structure for both commercial and residential collection.

- Expand disposal collection fees for large, bulky items such as white goods and furniture.

- Review small grants to community public service groups that support community programs by providing technical assistance or public education.

- Review a program and encourage LAGCo to offer waste evaluation programs for commercial businesses in the City.

- Review a program to provide technical assistance to businesses and consumers home-owners through workshops and seminars on source reduction techniques and activities.

- Continue programs to provide public education efforts through the media, school systems and city programs to increase awareness of source reduction and waste management issues.

- Review a program to provide public recognition and awards to individuals and businesses the implement source reduction activities.

- Continue non-procurement programs aimed at source reduction throughout city offices and operations.

- Continue a city procurement program and policy to encourage source reduction through purchasing decisions.

- Review multi-jurisdictional approaches to source reduction such as public education, disposal fees, and technical assistance.

- Monitor and adopt when feasible national source reduction efforts and trends in manufacturing and packaging to identify any potential areas for source reduction credit.

Medium-Term Planning Period

In order to meet the goals and objectives outlined in this component, the City of Los Altos will have to divert approximately two percent of the total waste stream in the medium-term planning period. All programs and alternatives selected in the short-term planning period will be continued in the medium-term. In addition, the City of Los Altos has selected the following programs and alternatives:

- Implement programs that provide public recognition of outstanding source reduction efforts within the community

- Review a program to provide direct economic benefits to businesses and private organizations to implement source reduction programs.

- Develop appropriate programs, workshops and seminars that provide technical assistance for source reduction activities

- Review a program to impose penalties and/or fines on businesses that do not develop and implement source reduction programs and practices and report their progress to the city.

- Review a program to institute product bans for certain materials and products sold within the city.

- Monitor efforts at the state level to encourage source reduction, including advance disposal fees, public education efforts, and other programs.

Program Implementation

This section identifies and describes the specific government agencies responsible for implementing the selected alternatives and programs; the specific tasks necessary to achieve full implementation of the selected alternatives and programs; an implementation schedule and costs. This information is presented in Table 2.1. All revenue sources for waste reduction programs are derived from user fees.

Monitoring and Evaluation

To ensure that the selected source reduction alternatives and programs are meeting the goals and objectives of this component, the City will implement a monitoring and evaluation program. Because the objectives of this component extend throughout both the short-term and medium-term planning periods, the City's monitoring and evaluation program will continue, as needed, during both planning periods.

Monitoring Methods– The methods for quantifying and monitoring the achievement of the component objectives are presented below in three groups: Objectives 1 and 2; Objectives 3, 4, and 5; and Objectives 6 and 7.

Objective 1:
Reduce the use of non-recyclable materials

Objective 2:
Replace disposable materials and products with reusable materials and products

Monitoring Method: Further waste characterization studies will be conducted at the end of the short-term planning period to measure changes in both waste types and waste quantities. These studies, will be combined with more informal "spot check" assessments of waste composition to monitor reductions in non-recyclable and disposable materials.

Objective 3:
Reduce Packaging

Objective 4:
Purchase repaired or repairable products

Objective 5:
Reduce generation of yard waste and promote backyard or on-site composting

Monitoring Method: An annual residential survey will be conducted to ascertain the degree to which households are reducing purchases with packaging, purchasing repaired or repairable products, and participating in backyard composting programs.

Objective 6:
Purchase durable products

Objective 7:
Increase the efficiency of materials used in the commercial and industrial sectors

Monitoring Method: An annual business survey will be conducted to monitor procurement practices and to identify reductions in the purchase of non-recyclable materials and products. The survey might also monitor trends towards replacing less durable and single-use materials with more durable and reusable products, materials, and equipment.

Written Criteria– The city will prepare annual reports describing the findings of the monitoring activities described above. The report will provide written criteria evaluating the effectiveness of the source reduction programs by reporting on whether (1) the source reduction objectives are being achieved; (2) the selected programs and activities were implemented on schedule; (3) business procurement practices have changed; and (4) residents increasingly participate in and have a greater understanding of source reduction.

Responsibility For Monitoring– The monitoring and evaluation activities described in this section will be implemented by the public works department.

Funding Requirements– Funding for the monitoring and evaluation program described in this section will be provided by the city through user fees. Funding for this program includes the costs of (1) administrative activities, (2) recordkeeping, (3) program monitoring and surveying, (4) tracking of survey results, and (5) annual report writing.

Contingency Measures– If the programs described above fail to meet the goals and objectives of this component, the following tasks can be implemented:

- Analyze existing programs and alternatives for obstacles to successful implementation.
- Modify selected alternatives, including degree, scope, or extent of source reduction activity and implementation schedule.
- Seek additional funding and staff.
- Select additional alternatives
- Consider regulatory programs or mandatory programs

FOOTNOTES**********

1 This summary is based on information from U.S. Congress, Office of Technology Assessment, *Facing America's Trash - What Next for Municipal Solid Waste*, OTA-0-424, Washington, D.C.: U.S. Government Printing Office, October 1989.

2 The CIWMB submitted the *Disposal Cost Fee Study Final Report* (Tellus Institute, Boston, Mass.) to the California Legislature and the Governor on March 1, 1991.

Table 2.1 Source Reduction Program Implementation

City=Los Altos Public Works Department LAGCo=Los Altos Garbage Company County=Santa Clara County

Task	Responsible Agency	Implementation Date	Yearly Cost
Short-Term			
Continue a variable rate structure	City/LAGCo	ongoing	included in other
Expand disposal collection fees for bulky items	City/LAGCo	April 1993	included in other
Review small grants to support community programs	City	October 1994	included in other
Review and to offer waste evaluations to businesses	City/LAGCo	November 1992	included in other
Review program to provide technical assistance and education to all sectors through workshops and seminars	City/LAGCo	September 1993	included in other
Continue programs to media and school systems	City/LAGCo	ongoing	included in other
Review program for public recognition of activities	City	December 1994	included in other
Continue non-procurement programs within city organization	City	ongoing	none
Continue city procurement policies encouraging source reduction	City	ongoing	none
Review multi-jurisdictional approaches	City/County LAGCo	ongoing	none
Monitor and adopt appropriate national efforts and trends	City/LAGCo	ongoing	included in other
Implement program for public recognition	City/LAGCo	January 1995	included
Develop programs/workshops for technical assitance	City/LAGCo	June 1995	included
Medium Term			
Review program for direct economic benefits for implementing source reduction programs	City/LAGCo	February 1996	included in other
Review program to impose penalties for not implementing and reporting progress	City	December 1998	included in other
Review instituting product bans	City	June 1998	included in other
Monitor efforts at state levels	City/LAGCo	ongoing	included in other

Recycling Component

Introduction

Recycling is defined in Assembly Bill 939 (Public Resources Code, 40180) as "...the process of collecting, sorting, cleansing, treating, and reconstituting materials that would otherwise become solid waste, and returning them to the economic mainstream in the form of raw materials for new, reused, or reconstituted products which meet the quality standards necessary to be used in the marketplace." Recycling is an old practice that is taking on an increasingly important role in the waste management programs of many communities because of disposal capacity constraints that place a premium on the diversion of materials from the waste stream. In addition to conserving land disposal capacity, this form of waste diversion helps preserve natural resources and reduces the environmental impacts associated with waste disposal.

As defined in AB 939, recycling goes far beyond merely collecting and separating post-consumer waste; recycling includes returning the recovered materials to the marketplace in the form of new products. Thus, markets for recovered materials are critical for the recycling process to be complete. Accordingly, recycling plans must include market development as well as program development.

The City of Los Altos recognizes the value of recycling and seeks to support appropriate programs and services dedicated to the recycling of a broad range of materials.

Objectives

Recycling objectives presented in this section have been developed to meet the goal of reducing the amount of solid waste generated in the City of Los Altos. These objectives are to be implemented in the short-term planning period (1991-1995) and continued during the medium-term planning period (1996-2000).

Short-Term Objectives

The City of Los Altos can expect to divert 23 percent of the total waste stream in the short term by implementing the following recycling objectives:

- Increase participation in residential recycling programs
- Increase participation in multi-family dwelling recycling programs
- Increase participation in commercial recycling programs
- Increase the number of material types collected from the residential and commercial sectors
- Review a diversion program for materials currently collected via industrial debris boxes
- Divert inert solids generated by city agencies (e.g., department of public works, municipal utilities, and capital improvement projects)
- Modify as refuse collection practices to optimize the economics of recycling operations

Medium-Term Objectives

Los Altos can expect to divert through recycling 32 percent of the total waste stream in the medium term by implementing the following objectives:

- Divert additional waste types from the residential and commercial waste streams
- Increase local demand for materials made from post-consumer waste
- Increase plastics curbside recycling collection when economically feasible to include a wider variety of polymer types
- Continue programs implemented in the short-term planning period

Target waste types for recycling have been identified from the results of solid waste generation studies and are based on five factors: (1) the effectiveness of meeting the recycling objectives described above; (2) the volume and weight of the material; (3) the hazard created by the material; (4) the percent content of non-renewable resources; and (5) the recyclability of the material. These target waste types are outlined below.

- corrugated cardboard
- newspaper
- high-grade office paper
- mixed paper
- telephone books
- wood wastes
- PET, HDPE, and other plastics
- inert solids (asphalt, concrete, construction and demolition debris)
- film plastic
- glass
- aluminum cans
- tin cans
- other scrap metal
- small household appliances

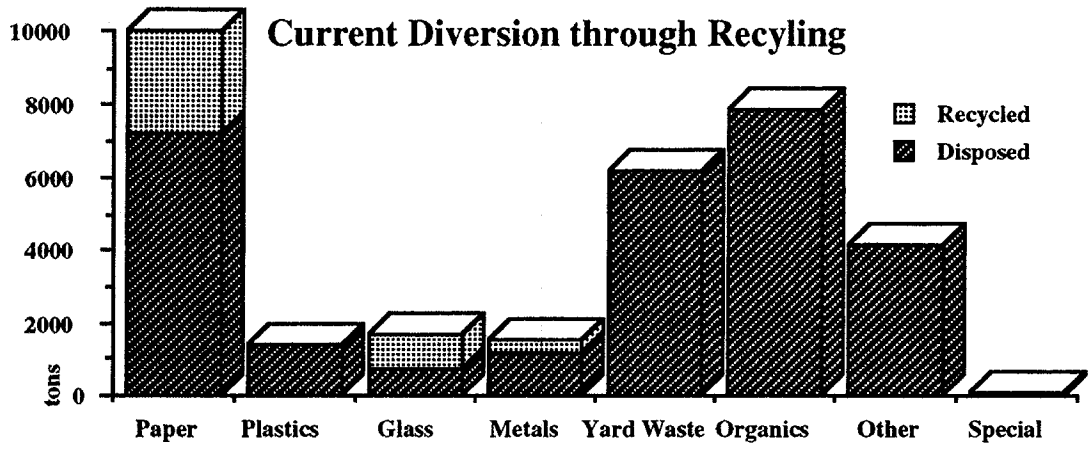
Recycling alternatives targeting the above waste types are evaluated below in the section entitled *Evaluation of Alternatives* according to their effectiveness in meeting the recycling objectives outlined above.

Existing Conditions Description

This section describes existing recycling activities and programs in the City of Los Altos. The jurisdiction has carefully reviewed and documented all potential and ongoing recycling efforts, including all the city programs. The city has also used a survey to identify recycling efforts, including local market development activities, sponsored by private entities such as Los Altos Garbage Company, Newby Island Landfill, non-profit recyclers, private businesses.

The quantities or wastes diverted by the city's recycling activities, by waste category and waste type, are presented in Figure 3.1. A description of the survey method used to identify and quantify the recycling activities is presented in Appendix B. The existing recycling diversion rate is estimated to be 13 percent of the current total waste stream.

Figure 3.1



Residential Activities

Residential recycling activities in the City of Los Altos include:

- curbside collection of recyclables, including aluminum cans, tin cans, PET, glass, newspaper, and, motor oil
- apartment and condominium recycling
- drop-off location for telephone book collection
- drop-off location for corrugated cardboard collection
- AB 2020 buy-back and drop-off locations for beverage containers

Commercial and Industrial Activities

Commercial activities in the City of Los Altos include:

- restaurant/bar glass collection
- high-grade office paper collection
- commercial and retail corrugated cardboard collection
- polystyrene foam collection program for cups, plates, fast food containers, is done by some local businesses for their customers

Local Government Activities

The City of Los Altos currently engages in the following recycling activities:

- purchasing programs for products with recycled material content
- programs to provide education and information to employees and the general public on recycling
- providing on-site containers for the collection of white paper, glass, aluminum, newspaper, and PET at city facilities and events

Evaluation of Alternatives

The Los Altos has evaluated the following recycling alternatives that could be implemented to meet its diversion goals. For ease of evaluation, these have been divided into alternatives that apply to the residential sector, the non-residential sector, and those that apply to both sectors. Each of the alternatives is evaluated according to a set of criteria specified in the regulations implementing AB 939. Program costs are approximate and program details should be considered preliminary. Cost and program details will be refined during development of the specific programs.

Many of these alternatives are complementary to each other and depend significantly on the implementation of other alternatives, programs, or SRRE Components, such as Source Reduction, Composting, and Education and Public Information. Where possible, these relationships have been indicated in the criteria for evaluating the alternatives. An additional consideration in evaluating the alternatives is that their effectiveness and impact need to be considered on the basis of how several alternatives or programs will work together as a system, and not necessarily as alternatives that are independent of one another.

Separation of recyclable materials from the waste stream is clearly the key to diverting materials from transformation or land disposal. The effectiveness of any recycling diversion program in meeting the goals of AB 939. is therefore extremely dependent upon the different methods that the jurisdiction uses to extract recyclables from the waste stream. The effectiveness of the various separation methods involves two primary factors: (1) the degree to which materials can be separated at the source of generation, which affects the cost, recovery rate, and quality of materials; and (2) the level of convenience to generators, which affects participation in the separation and collection programs. These factors tend to differentiate the following approaches.

Each of the recycling alternatives is described below and then evaluated according to a set of criteria specified by the regulations governing AB 939.

Residential Alternatives

Alternative 1 - Curbside Collection.

This alternative addresses the objective of collecting recyclables from single-family homes. Curbside collection is the most effective method of achieving high rates of residential participation in recycling programs. Curbside programs can involve collection of either separated or mixed recyclables. Once the curbside program is fully-established, additional materials, such as corrugated cardboard, magazines, and mixed paper, can be added in order to increase recovery via curbside.

Another option is to begin wet/dry collections at the curb, similar to systems in Europe. Because few, if any, such programs currently exist for the residential sector in the U.S., the logistics and considerations for such a program are not known at this time. One type of wet/dry

collection system that has been used in Europe involves three cans. One can contains all the recyclable materials that will go to a MRF for processing; this is essentially commingled collection. The second can contains all food scraps and other designated organic wastes. These materials would likely be composted. The third can contains all other material that cannot be separated and would likely be taken to the landfill.

Generally, curbside collection programs are most successful when the level of service and convenience to the homeowner is the highest. Programs with collection schedules that minimize the amount of storage time of recyclables by households, that provide containers, and that are supported by aggressive public information campaigns tend to achieve higher participation and recovery rates. These programs will also generate materials with higher market quality due to lower levels of contaminants.

This alternative is evaluated below to determine whether it is appropriate for the City of Los Altos, as well as to compare it to other alternatives.

Effectiveness – This alternative would be effective in enhancing the participation and capture rates for residential generators and in reducing the amount of targeted recyclable material(s) disposed of in landfills.

Hazard – This alternative presents no major hazards.

Ability to Accommodate Change – This alternative is readily adaptable to changing conditions, especially to changes in material types, processing and handling techniques, and to changes in the waste management system and regulatory programs.

Consequences to the Waste Stream – This alternative has no known impact on shifts in waste-type generation.

Implementation Period –This alternative would likely be completed in the short-term planning period (1995).

Facility Requirements – A facility would be required for processing the collected recyclables and preparing them for shipment to markets.

Consistency with Local Plans and Policies –This alternative is consistent with local plans and policies.

Institutional Barriers –There are no known institutional barriers to implementing this alternative.

Estimated Cost – Costs for the programs presented in this alternative would depend upon the scope of the projects undertaken and the existing programs and conditions in the jurisdiction. Costs for the City of Los Altos are estimated to range from $150,000 to $200,00 annually and are funded through regular garbage collection rates.

End Uses – See section titled "Market Conditions."

Public vs. Private Operation – The programs outlined under this alternative could be operated by either a public or private entity.

Alternative 2 - Mobile Collection System

A mobile collection system, by definition, is one which moves and can service more than one area. Under AB 2020 the City of Los Altos is required to evaluate this alternative. Mobile systems are ideal for rural areas with low-density populations and can be effective in urban areas

that do not currently have a curbside program. Jurisdictions with fairly high population densities and/or with many recycling collection programs in place may be better and more efficiently served by promoting and expanding curbside recycling programs.

This alternative is evaluated below to determine whether it is appropriate for the City of Los Altos, as well as to compare it to other alternatives.

Effectiveness – This alternative would be effective in enhancing the participation and capture rates for residential generators and in reducing the amount of targeted recyclable material(s) disposed of in landfills.

Hazard – This alternative presents no major hazards.

Ability to Accommodate Change –This alternative is readily adaptable to changing conditions, especially to changes in material types, processing and handling techniques, and to changes in the waste management system and regulatory programs.

Consequences to the Waste Stream – This alternative has no impact on shifts in waste-type generation.

Implementation Period – This alternative would likely be completed in the short-term planning period (1995).

Facility Requirements – Existing facilities must be expanded or altered. A mobile collection system would require a trailer for customer transactions and a storage area for material collected. The collection site should be secured at night to prevent scavenging. A facility for processing the collected recyclables would also be required.

Consistency with Local Plans and Policies – This alternative is inconsistent with the existing city curbside recycling program and weakens state convenience zones.

Institutional Barriers – Los Altos does not have a landfill or industrial zoning to accommodate a site collection or processing facility.

Estimated Cost – Not applicable

End Uses – See section titled "Market Conditions."

Public vs. Private Operation – A mobile collection program could be operated by either a public or private entity.

Alternative 3 - Buy-back Center

Under AB939, the City of Los Altos is required to evaluate a buy-back center alternative. A buy-back center is essentially a drop-off center at which participants are paid for the materials they bring in. These materials typically include aluminum cans, newspaper, glass, metal cans, plastic (PET and HDPE), corrugated cardboard, and high-grade papers. Because of the nature of the programs, buy-back centers must have regular business hours and be staffed full-time; they are often more labor intensive than drop-off centers and can require equipment not needed at drop-off centers.

This alternative is evaluated below to determine whether it is appropriate for the City of Los Altos, as well as to compare it to other alternatives.

Effectiveness – Buy-back centers in communities with established recycling programs can be less effective because wastes are simply transferred from other recycling programs, such as curbside, where the generator is not paid for the materials recovered.

Hazard – These centers during unstaffed hours could become sites for illegal dumping.
Ability to Accommodate Change – This alternative is readily adaptable to changing conditions, especially to changes in material types, processing and handling techniques, and to changes in the waste management system and regulatory programs.
Consequences to the Waste Stream – This alternative has no known impact on shifts in waste-type generation.
Implementation Period – This alternative would likely be completed in the short-term planning period (1995).
Facility Requirements – New facilities would be required. A site, facility, and processing equipment (e.g., scales, cash register, safe, calculators, hand carts) would be needed.
Consistency with Local Plans and Policies – This alternative is consistent with local plans and policies.
Institutional Barriers – Some institutional barriers exist for this alternative. A relatively convenient location would have to be selected and any necessary permits obtained. In addition, the center would have to be certified by the State Department of Conservation (DOC) as a buy-back center for California Redemption Value beverage containers under AB 2020 According to the DOC, this would require filing an application to become a certified recycling center.
Estimated Cost – Costs would be borne by a private operator.
End Uses – See section titled "Market Conditions."
Public vs. Private Operation – A buy-back center would probably be privately operated.

Alternative 4 - Source-separated recycling program: multi-family dwellings

This alternative addresses the objective of establishing programs for the collection of recyclable materials from multi-family dwellings. Multi-family dwellings typically house apartment, condominium, and townhome residents, as well as residents of senior citizen homes. In the City of Los Altos, duplexes and townhomes are considered multi-family dwellings and are serviced by the Los Altos Garbage Company's residential curbside recycling collection program.

Currently in the Los Altos there are a few recycling programs on-site at multi-family dwellings. There are approximately 500 multi-family dwelling units in the City. This number is projected to remain the same by 1995, and to represent approximately 10 percent of the total number of housing units in the City of Los Altos. Programs will likely be tailored to the particular multi-family area; for instance, a senior citizen's residence may have different needs than an apartment complex.

This alternative is evaluated below to determine whether it is appropriate for the City of Los Altos as well as to compare it to other alternatives.
Effectiveness – A recycling program for multi-unit dwellings is expected to be effective in reducing the amount of targeted material in the solid waste stream. Materials collected would likely be newspaper, glass, aluminum cans, and PET plastic. The success of the program will depend on how well the particular needs of each type of multi-unit dwelling are considered.
Hazard – Recycling programs at multi-unit dwellings present moderate hazards, which will depend on the type of program in place. For instance, broken glass or other miscellaneous items can be a problem with multi-bin or multi-compartment systems.

Ability to Accommodate Change – Multi-unit dwelling recycling programs are readily adaptable to changing conditions. The program is more readily adaptable to changing conditions if residents and multi-family dwelling managers are kept up-to-date on changes in the program. This task could be accomplished by the hauler, city staff, or volunteer groups.
Consequences to the Waste Stream – Multi-unit dwelling recycling programs would have no impact on shifts in waste-type generation.
Implementation Period – This alternative would likely be completed within the short-term planning period (1995).
Facility Requirements – Facilities would be required at (1) the multi-family complex for placement of the recycling bins and (2) a location suitable for processing and storing the collected materials. Some existing multi-family facilities could develop a space problem as the program grows, since space is generally at a premium. Trade-offs may be required in order to utilize parking areas or open areas for recycling collection containers. In addition, the city may require that garbage/recycling collection areas be enclosed, which could require changes to accommodate recycling.
Consistency with Local Plans and Policies – Minor changes to existing plans and policies would be required. These could include changes to any agreements between the city or hauler with a given multi-unit dwelling with regard to its garbage collection. In addition, city policies may need to be adapted to allow for unenclosed garbage/recycling collection areas, if this is needed and if city policies currently prohibit it. Lastly, the city could require changes to zoning and building ordinances to require that recycling collection areas be built into all new multi-unit developments.
Institutional Barriers – Moderate institutional barriers exist with this alternative. With rental property, turnover in property managers, on-site managers, and tenants often makes it difficult to keep residents apprised of recycling programs and any changes made in these programs. Also, the facility manager may have to give up parking or other space in order to accommodate the recycling program; parking space requirements are usually set by local ordinance standards. This can be remedied with strong public education efforts.
Estimated Cost – Multi-family dwellings are included in the existing curbside recycling program.
End Uses – See section titled "Market Conditions."
Public vs. Private operation – These types of facilities could be operated by either a public or private entity.

Non-Residential Alternatives

Alternative 1 - Commercial/Industrial Recycling Program

This alternative addresses the objectives of increasing the number of material types collected from the commercial sector and increasing participation in commercial recycling programs. In order to recycle more of the commercial/industrial waste stream, a comprehensive recycling program will have to be expanded and a broader range of materials collected. Because the commercial/industrial waste stream accounts for 63 percent of the city's waste stream, the city can expect to divert a significant portion of the waste stream through a commercial/industrial

recycling program. Before instituting a city-wide commercial/industrial collection program, the city could undertake a one-year pilot program to determine the best method of collection (e.g., a two-bin system, a multi-bin system, etc.). It is significant that as there is no industry in Los Altos, industrial waste is only generated with debris boxes.

This alternative is evaluated below to determine whether it is appropriate for the City of Los Altos, as well as to compare it to other alternatives.

Effectiveness – This alternative would be effective in reducing the amount of targeted recyclable material in the commercial/industrial waste stream. Materials collected would likely include newspaper, PET, glass, tin and aluminum cans, high-grade office paper, and corrugated cardboard. Other materials that could be considered are HDPE, film plastic, ferrous metals, and wood.

Hazard – This alternative presents no major hazards.

Ability to Accommodate Change – Commercial collection programs are readily adaptable to changing conditions such as increased participation rate or the addition of another material type for collection. Additional trucks could be added or more frequent collection of materials could occur to accommodate changing conditions.

Consequences to the Waste Stream – This alternative has no known impact on shifts in waste-type generation.

Implementation Period – The implementation schedule is dependent on the number of materials included in the program and the number of businesses targeted to participate in the program. However, this alternative would likely be completed in the medium-term planning period (2000).

Facility Requirements – Facility needs for this alternative include additional trucks, drivers, and collection containers. In addition, access to a material recovery facility will be needed to process the additional volume of materials collected.

Consistency with Local Plans and Policies – This alternative is consistent with local plans and policies.

Institutional Barriers – One of the major problems associated with commercial/industrial recycling programs is the need for markets for the large quantities of materials collected. In addition, some businesses are unwilling to participate in recycling programs, as these programs are generally not revenue-producing, and often even cost the company. Also, space constraints for waste collection at commercial facilities are often a barrier.

Estimated Cost – The cost of a commercial/industrial recycling programs is dependent on the number of recyclable materials collected and the service area. Costs for this program would be supported by user fees.

End Uses – Please see section titled, "Market Conditions."

Public vs. Private Operation – This type of program can be operated by either a public or private entity.

Alternative 2 - Curbside Program.

This alternative addresses the objective of establishing source separation recycling programs for small volume non-residential waste generators in the downtown, high-density commercial areas where many small businesses have little room to store recyclable materials. This

alternative resembles the residential curbside program, although the potentially small volumes of waste generated from these businesses may make it difficult for haulers to collect from them. Other small business parks and shopping areas could also be targeted. Indeed, it is possible that this program would be an extension of the existing residential curbside program; trucks would drive a specified route around downtown, with stops to pick up materials left at the curb by businesses. This service would coincide with the day refuse is collected.

This alternative is evaluated below to determine whether it is appropriate for the City of Los Altos, as well as to compare it to other alternatives.

Effectiveness – This alternative would be effective in reducing the amount of targeted material(s) in the waste stream. Materials collected would likely include corrugated cardboard; newspaper; PET; glass; tin and aluminum cans; white ledger, computer, and colored ledger paper.

Hazard – This alternative presents no major hazards.

Ability to Accommodate Change – This alternative is readily adaptable to changing conditions, especially to changes in material types, processing and handling techniques, and to changes in the waste management system and regulatory programs.

Consequences to the Waste Stream – This alternative has no known impact on shifts in waste-type generation.

Implementation Period – This alternative would likely be completed in the short-term planning period (1995).

Facility Requirements – Existing storage area at businesses may need to be expanded or altered in order to provide room for one week's worth of recyclable materials.

Consistency with Local Plans and Policies – This alternative is consistent with local plans and policies.

Institutional Barriers. There are no known barriers to implementing this alternative.

Estimated Cost – Costs for the programs presented in this alternative would depend upon the scope of the projects undertaken and the existing programs and conditions in the community. Costs may include purchasing collection containers for each business, new trucks, additional staff, and processing costs. Costs for the City of Los Altos are estimated to range from $80,000 to $120,000, and are supported by user fees.

End Uses – See section titled "Market Conditions."

Public vs. Private operation – This type of program can be operated by either a public or private entity.

Alternative 3 - Manual material recovery operation/Mechanized material recovery operation

Manual and mechanized material recovery operations are very similar to each other in function, with some differences in capital investment, facility size, equipment, and operating costs. Both types of facility involve sorting loads of waste in order to recover recyclable materials. The objective of these operations is to receive recyclable materials, remove the contaminants, and prepare the materials for transportation to markets. Both manual and mechanized recovery facilities allow materials to be recovered from mixed waste loads, which increases the types of materials recovered through established commercial/industrial programs. The processing

capabilities of both of these types of recovery operation allow communities to establish comprehensive integrated recycling programs that are cost-effective.

Manual material recovery facilities are designed for the collection, processing, and marketing of recyclable materials. A manual recovery facility will accept incoming loads to be tipped either onto a pad or into a hopper. The waste stream is then sorted and separated by hand, usually as it travels along a conveyor belt system. Mechanized material recovery facilities are very similar in design and operation to manual facilities except that the conveyor system is equipped with a series of mechanical processors that assist in the waste stream segregation. Although separation and recovery is achieved through mechanical means, a portion of material is often still recovered manually by the facility operators.

This alternative is evaluated below to determine whether it is appropriate for the City of Los Altos, as well as to compare it to other alternatives.

Effectiveness - This alternative is effective in reducing the amount of targeted recyclable material(s) in the solid waste stream.

Hazard – This alternative presents moderate hazards. These include the possibility of fire and explosion from any shredder operations and the possibility of explosion from compacting the residual load. Because some of the materials collected are combustible, there is a minor fire hazard associated with their storage. Health risks associated with manual sorting of refuse include exposure to potentially hazardous materials in the waste stream and working around equipment such as loaders, dozers, and compactors.

Ability to Accommodate Change – Both manual and mechanized facilities are readily adaptable to changing conditions.

Consequences to the Waste Stream – This alternative has no known impact on shifts in waste-type generation.

Implementation Period – Simple manual recovery operations (i.e., dump-and-pick) could be implemented in the short-term planning period. If begun shortly, facilities employing either manual or mechanical recovery could be implemented in the short-term planning period; however, sophisticated mechanized recovery operations would require design and development efforts more suited to the medium-term planning period.

Facility Requirements – This alternative requires significant resources for a facility large enough to handle the delivery, processing, and short-term storage of both recyclable and non-recyclable components of the waste stream. Los Altos has no zoning to accommodate such facilities.

Consistency with Local Plans and Policies – This alternative is inconsistent with local policies.

Institutional Barriers – Both manual and mechanized recovery facilities will require state and local permits to operate.

Estimated Cost – Not applicable.

End Uses – See section title "Market Conditions."

Public vs. Private operation – These types of facilities can be operated by either a public or private entity.

Alternative 4 - Salvage at solid waste facility.

Salvage at solid waste facilities involves the recovery of materials from loads that are left at a designated site, such as a landfill or transfer station. This type of activity is very similar to a manual material recovery operation, although generally under more open conditions. Salvaging also often differs from MRFs in the waste types separated. Salvaging may occur in a designated area prior to unloading as well as at the tipping face of the landfill or transfer station. These loads are often from uncompacted commercial debris boxes. This program, sometimes referred to as a "dump-and-pick" operation, would be instituted at one or more of the landfills serving the jurisdiction. A cement pad for sorting the materials is preferable, though not required, for this type of an operation. A cement pad would require a dedicated picking area. Salvage at solid waste facilities is usually restricted to clearly identifiable loads of specific items such as metals, white goods, wood waste, mattresses, as well as glass, plastics, and metal beverage containers. In addition, high-concentration loads of construction debris, soil, concrete, and asphalt are often diverted to a separate tipping area for recovery. Loads subject to salvage at solid waste facilities include residential, commercial, industrial, and self-haul loads.

This alternative is evaluated below to determine whether it is appropriate for the City of Los Altos, as well as to compare it to other alternatives.

Effectiveness – This alternative is effective in reducing the amount of targeted recyclable material(s) in the waste stream.

Hazard – Workers may be at risk due to refuse collection trucks coming in and out regularly and from working around large, moving equipment, such as loaders, dozers, and compactors. Also, hazards could arise from workers' exposure to potentially hazardous materials in the waste.

Ability to Accommodate Change – Salvaging at disposal or transfer facilities is moderately adaptable to change.

Consequences to the Waste Stream – This alternative has no known impact on shifts in waste-type generation.

Implementation Period – This alternative could be in operation in a matter of weeks. However, six months to one year could be required to begin salvaging at the landfill, depending on the permit revisions required.

Facility Requirements – This alternative can be usually be integrated into existing facilities, although space constraints are a problem at certain facilities.

Consistency with Local Plans and Policies – This alternative is inconsistent with local plans and policies.

Institutional Barriers – Disposal or transfer facility permits may prohibit salvaging. These permits would have to be revised in order to incorporate salvaging. Los Altos does not have a solid waste facility.

Estimated Cost – Not applicable.

End Uses – See section titled "Market Conditions."

Public vs. Private Operation – This alternative could be either a public or private operation.

Alternative 5 - Divert inert solids generated from city public works and private construction/demolition projects to a materials processor.

This alternative addresses the objective of increasing recovery of recyclable construction materials and inert solids. City public works crews are responsible for a small portion of the construction projects in the city. The remainder are projects with private construction firms. The City is aware that used asphalt or concrete is recyclable and may be used as road base and other construction material. Under this alternative both the City public works department and any contractors working in the City have been responsible for taking the used materials to an established processor. Small quantities (e.g., 4 tons or less) would be exempt from this requirement.

This alternative is evaluated below to determine whether it is appropriate for the City of Los Altos as well as to compare it to other alternatives.
Effectiveness – This alternative is effective in reducing the amount of targeted recyclable material(s) in the waste stream.
Hazard – Concrete and asphalt processing operations are extremely noisy (requiring ear protection) and produce a substantial amount of dust.
Ability to Accommodate Change – This alternative can readily adapt to changing conditions, due to the fact that the local market for asphalt and concrete is stable.
Consequences to the Waste Stream – This alternative will have no impact on shifts in waste-type generation.
Implementation Period – This alternative would likely be completed in the short-term planning period (1995).
Facility Requirements – No facilities are required as this alternative is intended to be integrated into existing processing facilities.
Consistency with Local Plans and Policies – This alternative is consistent with local plans and policies.
Institutional Barriers – This alternative is impacted by moderate barriers; the contractors may object to having to take the used materials to a processor; the city can include this in their bid requirements.
Estimated Cost – Operating costs would include transportation and tipping fees. Tipping fees for asphalt and concrete vary depending on the load. Asphalt and concrete can vary between $4.75 per cubic yard to $6.50 per cubic yard, depending on whether the load contains wire mesh or rebar. On a per ton basis, disposal costs range from approximately $2.00 per ton for asphalt to $5.00 per ton for concrete. Total costs for the City of Los Altos are unknown at this time.
End Uses – Primarily road base, aggregate and bedding.
Public vs. Private Operation – Operation of the processing facility would be private.

Residential *and* Non-Residential Alternatives

Alternative 1 - Drop-off recycling center

Drop-off recycling centers range in size, from "igloo" style domes, to large centers. They require that the generator source separate recyclable materials and taken them to the drop-off site. Drop-off recycling centers tend to target recyclables from residential sources and tend to be

located in areas where they are readily accessible to homeowners and multi-unit dwellers. However, they may also be located in more commercial, urban areas and serve smaller businesses and downtown areas. They may be located at solid waste transfer and disposal facilities as well. Drop-off sites are sometimes unstaffed, but staffing provides control over the types of materials left at the facility, contamination levels, and the appearance of the facility. Small-scale drop-off recycling centers are generally located in parking lots of grocery stores, shopping centers, churches, or schools. Drop-off recycling centers can make recycling more convenient as a back-up for those who do have curbside.

Drop-off centers usually accept the full range of commonly recycled materials such as newspaper, glass, plastics, and aluminum cans. They can be expanded to include other materials such as corrugated cardboard, scrap metals, and both high-grade and mixed paper.

This alternative is evaluated below to determine whether it is appropriate for the City of Los Altos, as well as to compare it to other alternatives.

Effectiveness – Drop-off recycling centers can be effective in diverting recyclables from the waste stream. This is especially true of jurisdictions that do not have other programs in place, such as curbside or mobile collection systems. The jurisdiction will have to carefully consider the impact that several different programs can have on each other as some programs can adversely affect other programs. Jurisdictions with many recycling collection systems in place can expect minor impact from a drop-off recycling center.

Hazard – Drop-off recycling centers present moderate hazards. Because these sites are often unstaffed, they can become "dump sites." As a result, potential hazards include broken glass or other debris around the drop-off containers, wind-blown litter, and disposal of hazardous waste. In addition, for the safety of the users, sites need to be well-lit and have adjacent parking.

Ability to Accommodate Change – Drop-off recycling centers are moderately flexible, in that material types can be added quickly, as new markets develop. Increased contamination of materials, however, would render drop-off sites less flexible.

Consequences to the Waste Stream – Adding drop-off recycling centers would have a moderate impact on the waste stream. The potential for contamination of materials could render these materials less marketable.

Implementation Period – This alternative could be implemented in the short-term planning period (1995).

Facility Requirements – Drop-off centers would have to be built or set up in designated sites. Considerations include a central, accessible site; protection from weather (to keep paper dry); plenty of storage area for materials; good vehicle access (for both collection trucks and the public); and security (i.e., locked containers).

Consistency with Local Plans and Policies – Drop-off recycling centers are consistent with city plans and policies when located within properly zoned areas.

Institutional Barriers – Frequently, businesses and property owners are against the idea of a drop-off bin in their parking lot, primarily due to the mess that can result if these drop-off areas become dump sites. For this reason, the drop-off program could not operate in those locations without the businesses' and property owners' approval and cooperation.

Estimated Cost – Not applicable

End Uses – Please see section titled "Market Conditions."

Public vs. Private Operation – Drop-off recycling centers should be owned and operated by either public agencies, or by private non-profit or for-profit entities.

Alternative 2 - Changes to Zoning and Code Practices

The City of Los Altos will explore a number of options to promote recycling activities through regulatory approaches such as zoning, land-use, and building code requirements. Revisions to zoning and building code requirements include a zoning ordinance that would require all new land development projects to plan and provide for recycling needs in building and site design, with the exception of single-family homes. Land use and development requirements involve establishing incentives and disincentives to land use and development that promote recycling. These include requirements that an entity could not open a new business, relocate an old one, or build or otherwise develop property for commercial or residential purposes without presenting a plan describing the types and quantities of waste that would be added to the waste stream. The plan would require descriptions of programs to be implemented to encourage materials separation and recycling at the developed area. In addition, the city could identify recycling specifically in local codes for allowable land uses for a given zoning.

The City of Los Altos is also aware of the Recycling Market Development Zones established under SB 1322 and is not considering this option .

This alternative is evaluated below to determine whether it is appropriate for the City of Los Altos, as well as to compare it to other alternatives.

Effectiveness – The effectiveness of these regulatory programs would depend on the level of change implied by the regulations imposed by the City of Los Altos, the materials targeted, adherence to the regulations by the community, and the level of enforcement.

Hazard – There are no environmental hazards associated with these regulatory programs, although hazards from incompatible land uses could result if some restrictions were not applied to the types of facilities allowed to be located in zoned areas.

Ability to Accommodate Change – The regulatory measures outlined in this alternative are all fairly flexible and can readily accommodate to new circumstances in recycling techniques and recovery processes as well as to changes in local recycling programs and regulations. These programs can adapt to new types of materials and products as well as to changes in the waste stream due to generator behavior. One aspect that is common to each of the regulatory programs is the degree of inflexibility associated with the need to submit any regulatory program to the formal approval process required by the city.

Consequences to the Waste Stream – This alternative has no known impact on shifts in waste-type generation.

Implementation Period – Regulatory programs, such as zoning, building code, and land-use requirements can all be implemented in the short-term time period. However, communities usually allow a period of time for residential and non-residential generators to adjust to the effects of the new requirements. In addition, implementing programs such as these over a longer time frame may allow for the opportunity to pursue this alternative in conjunction with neighboring jurisdictions.

Facility Needs – There are no facility requirements for this alternative.

Consistency with Local Plans and Policies – Regulatory programs may be viewed as inconsistent with city policy if there are current plans for implementing voluntary source separation and recycling programs.
Institutional Barriers – This alternative is inconsistent with city policies.
Estimated Cost – Not applicable.
End Uses – See section titled "Market Conditions."
Public vs. Private Operation – Not applicable.

Alternative 3 - Rate Structure Modifications

Recycling activities can be encouraged through rate structure modifications including disposal fees and quantity-based user fees for garbage collection services. Rate structure modifications, described below, address all of the recycling objectives identified in the section titled "Objectives" and may be applied to both residential and non-residential generators.

Disposal Fees – Disposal fees at the landfill could be modified to promote recycling by making the cost of disposal for recyclable wastes relatively high. This type of fee structure would serve to divert recyclable materials from the waste by creating an incentive for generators and haulers of wastes containing recyclables to either source separate the recyclable materials or take the wastes to a recovery facility.

Quantity-Based User Fees – Quantity-based user fees involve calculating collection and disposal fees based upon the amount of waste collected. This is similar in principal to other service-based utility charges such as water and electricity. Generators are charged fees according to the number of cans used, the number of bags collected, or the frequency of collection. Variable rate fees are directly proportional to actual disposal costs; consequently, residents have the opportunity to reduce costs by separating recyclable materials from their waste stream, thereby generating less waste.

There are a number of variants to the rate structure alternative, including:

- Use of a base subscription fee to cover fixed collection costs plus a flat per-unit volume charge;
- Fees that rise according to increasing volume; and
- Charges based upon weight instead of by volume.

These variants require some flexibility in the delivery of service to households and will lead to variation in whether containers are provided by the collector or provided by the generator; the types and sizes of containers used; and the use of stickers or special tags purchased to identify legitimate containers.

Most systems that currently charge a variable fee do so using volume as the basis. However, some communities support the concept that a weight-based system would be more equitable because not every container is necessarily full and the densities of some wastes are different from others. Some cities are experimenting with weight-based systems even though such systems require more collection time and expense. Another requirement is that the collection vehicle have a scale and a recordkeeping system to track the weight of the wastes by customer.

This alternative is evaluated below to determine whether it is appropriate for the City of Los Altos as well as to compare it to other alternatives.

Effectiveness – Rate structure modifications can be very effective in encouraging recycling, since the cost of collection and disposal of recyclables can be high. The economic incentive to reduce disposed waste will cause generators to become more conscious of waste generation and may alter their habits to reduce the amount of material generated through increased participation in source separation and recycling programs. In addition, generators may alter their purchasing decisions to substitute for more recyclable products due to their lower disposal cost through the recycling program. Additionally, variable rate structures provide an incentive for increased participation in source reduction and community composting programs.

The estimated impact on the waste stream of variable rate structures is difficult to quantify and depends on two factors: (1) the participation of waste generators in recycling programs due to higher collection and disposal fees, and (2) the effectiveness of the separation and recycling activities undertaken by participating generators as measured by their recyclables capture rate. These factors are sensitive to the rate at which collection and disposal fees rise; as fees increase, both participation and effectiveness will increase. However, there is an upper limit to the variable rate structure beyond which illegal dumping will begin to occur.

Hazard – There is no direct environmental hazard associated with rate structure modifications. However, increased disposal and collection costs could result in an increase in illegal disposal, both on public property and in the disposal containers of commercial businesses. Variable rate structures often necessitate the installation of locking dumpster mechanisms for commercial containers. Illegal dumping could result in environmental and public health hazards.

Ability to Accommodate Change – Modifications to rate structures, in general, are easily adapted to changing conditions. Rate structures can also be further changed and modified as circumstances warrant. Over the medium- and long-term, this alternative is quite flexible. Most jurisdictions may find that their disposal and collection fees are not as flexible in the immediate time frame because of outstanding contracts with haulers and landfill operators. Additionally, once volume-based rates are established, subsequent rate changes require the approval of the jurisdiction's governing body.

Consequences to the Waste Stream – Rate structure modifications would be designed to encourage source separation and recycling. Some shifting of wastes towards more recyclable waste types will be unlikely. Conversion to a volume-based system will likely result in more waste being compacted into each can, thereby increasing the density of the waste stream. Rate structure modifications provide a strong incentive to divert items from the waste stream such as yard wastes and recyclable materials when programs for those elements of the waste stream are available. The impact of this alternative, in concert with these other programs, is that the disposal waste stream may be of lower volume, higher density, and contain much lower proportions of recyclables and yard wastes.

Implementation Period – Implementation of this alternative could occur within a period of several months to a year and is well within the short-term planning period. Collection and disposal rates are usually adjusted on an annual basis, particularly when the waste service is provided by contract with private collection companies. However, potential opposition from the community and local government agencies could preclude implementation in the short-term planning period.

Facility Requirements – No additional facilities are needed to implement rate modifications.

Consistency with Local Plans and Policies – This alternative is generally consistent with the plans, policies, and ordinances of the City of Los Altos. Exceptions will occur when the plans and policies of the city explicitly prohibit modifications to the rate system or the charging of a fee for disposal.
Institutional Barriers – The rate setting and approval process may require changes to current institutional relationships between city agencies responsible for administering the waste management program and those responsible for setting and approving local rates.
Estimated Cost – Implementing rate structure modifications would require at least six major steps:

- a rate study to determine appropriate rate structures for achieving the desired level of participation in recycling programs
- a determination of how the proposed rate structure would impact the fixed and variable costs of collection and disposal
- review and approval by the City of Los Altos (including a public hearing)
- generation of informational and educational materials
- procurement of either containers or approved stickers for collection bags
- modification of existing billing operations

Costs to the city for implementing the rate structure modifications are negligible.
End Uses – See section titled "Market Conditions."
Public vs. Private Operation – This alternative is compatible with either public or private refuse collection.

Alternative 4 - Market Development

Several options for market development for recycled materials are available to the City of Los Altos that address the objectives outlined in the section titled "Objectives." These options include participation in state-wide efforts sponsored by the California Integrated Waste Management Board, use of public education and information programs to promote the use of products using recycled materials, and local procurement ordinances. This alternative will focus on local procurement ordinances. Public education efforts by the city will have to be aggressive and extensive to ensure successful source reduction, recycling, and composting efforts, and are therefore covered in a separate component.

Local procurement ordinances involve adopting a procurement policy for the City of Los Altos specifying that one or more of the following criteria be considered in purchasing decisions: durability, recyclability, reusability, and recycled material content. Additionally, Los Altos could specify that any business or organization holding a contract with the jurisdiction would have to have a recycling program in place and provide products or materials according to the above criteria. The city could adopt purchasing preferences and establish set-asides for recycled products or product with an established percentage of recycled material content.

This alternative is evaluated below to determine whether it is appropriate for the City of Los Altos, as well as to compare it to other alternatives.
Effectiveness – Effectiveness of a procurement program would depend on the materials targeted and the impact of the jurisdiction's purchasing power on the regional markets for those materials.

Hazard – This alternative presents no major hazards.
Ability to Accommodate Change – Procurement policies are fairly flexible and can readily accommodate new circumstances in recycling techniques and processes as well as to changes in local recycling markets, programs, and regulations. Procurement programs can easily adapt to new products and markets for recycled materials. One aspect of this alternative is the degree of inflexibility associated with the need to submit any regulatory program to the formal approval process required by the City of Los Altos.
Consequences to the Waste Stream – Changes in the waste stream composition will depend on the effectiveness of the procurement program. However, effective market development through procurement programs could lead to increased quantities of materials in the waste stream that have a high content of recycled material.
Implementation Period – Procurement programs can be implemented in the short-term time period. However, the City of Los Altos may wish to allow a period of time for governmental consumers, producers, and suppliers of products to adjust to the effects of the procurement program. In addition, implementing a procurement program over a longer timeframe may allow for the opportunity to pursue this alternative in conjunction with neighboring jurisdictions. However, this program would have to undergo a complex approval process. The complexity of these programs may preclude implementation in the short-, and perhaps medium-term, time frame.
Facility Needs – There are no facility requirements for this alternative.
Consistency with Local Plans and Policies – This alternative does not pose any conflict with current plans, policies, and ordinances for the City of Los Altos regarding low-bid purchasing.
Institutional Barriers – Purchasing and procurement programs across public agencies will have to be coordinated in order to achieve a city-wide impact from a procurement program. While purchasing and procurement itself is often centralized within the city's operations, the individual agencies receiving or consuming the goods and services purchased must agree to any aspects of their purchase requests that would differ from normal specifications.
Estimated Cost – Costs for a procurement program include resources from the City of Los Altos for developing, implementing, administering, and monitoring the program. Furthermore, each of the programs would involve costs associated with legal fees and staffing incurred during the approval process. The costs to merchants associated with a procurement program are unknown. Additionally, there are potentially unknown costs connected with a procurement program in that suitable products meeting source reduction requirements (and therefore identified as viable substitutes for products normally purchased), might be higher in cost to purchase. This would inflate the costs of procuring these items. The total cost to the City is estimated to range from $3,000 to $5,000.
End Uses. See section titled "Market Conditions."
Public vs. Private Operation. Not applicable.

Alternative 5 - Materials Handling Methods

Source separation of recyclable materials generally enhances the integrity of recovered materials for end use. In addition, a variety of collection programs, from residential curbside programs to commercial programs, ensures a range of program options to serve differing types of generators and provide each with the optimal method of participating in recycling efforts. Level

of service delivery and degree of convenience offered in separation and collection programs for recyclables can have a direct impact upon the quality of the materials eventually offered for sale to the recovered materials market. For example, the City of Los Altos could re-route commercial collection runs in order to preserve the integrity of recyclables destined for a mechanized recovery facility. This would enable the separate collection of wet wastes from grocery stores, for example, and dry wastes from other businesses.

This alternative is evaluated below to determine whether it is appropriate for the City of Los Altos, as well as to compare it to other alternatives.

Effectiveness – The impact of a program to improve material handling methods would be to improve the quality of recovered materials offered to secondary markets. In addition, improved handling methods often implies collection and separation programs more closely tailored to the convenience of waste generators, thereby improving participation in the recycling program.

Hazard – This alternative presents no major hazards.

Ability to Accommodate Change – Programs to adopt alternative materials handling methods are fairly flexible and can readily accommodate new circumstances in recycling techniques and processes as well as to changes in local recycling markets, programs, and regulations. Materials handling programs can easily adapt to new products and markets for recycled materials.

Consequences to the Waste Stream – This alternative is not expected to have any significant impact on shifts in waste-type generation. Recycled materials would be cleaner and of greater physical integrity.

Implementation Period – Alternative materials handling methods can be implemented in the short-term time period. However, the City of Los Altos may wish to allow a period of time for a variety of generators to adjust to the effects of the program. In addition, implementing a material handling program over a longer time frame may allow for the opportunity to pursue this alternative in conjunction with neighboring jurisdictions. Pursuing this alternative in conjunction with other jurisdictions might facilitate agreements on potential materials recovery facilities.

Facility Needs – There are no facility requirements for this alternative, although the city may wish to consider whether a transfer station or material recovery facility would enhance the program.

Consistency with Local Plans and Policies – This alternative does not pose any conflict with current plans, policies, and ordinances for the City of Los Altos.

Institutional Barriers – This alternative presents no institutional barriers with the exception of potential conflicts with waste haulers in altering contracts to accommodate the new handling methods and implied changes in separation and collection methods.

Estimated Cost – The costs to the City are unknown.

End Uses – See section titled "Market Conditions."

Public vs. Private Operation – The programs contemplated under this alternative could be implemented by either public or private entities.

Selection of Program

In the previous section, a number of alternatives were presented. Each alternative was evaluated qualitatively according to a range of criteria mandated by the regulations governing

AB 939. In this section, the City of Los Altos presents the results of the qualitative evaluation of the alternatives presented in the previous section. To accomplish this, the city has applied an assessment of whether or not each alternative is appropriate to the city's needs and assigned each alternative a ranking in order to select various alternatives. In selecting among alternatives, the Los Altos considered the following critical factors: (1) the degree to which each alternative is appropriate to the conditions of the jurisdiction (i.e., goals, objectives, policy environment, waste stream, and solid waste management system), and (2) the degree to which the alternatives complement each other and form a coherent, comprehensive, and cost-effective package.

Los Altos has no industrial zoning to allow the city to provide incentives to attract recycling businesses. Based on the results of the above evaluation and assessment, the alternatives selected to meet the goals and objectives of this component in the short-term and medium-term planning periods are presented below.

Short-Term Planning Period

In order to meet the goals and objectives outlined in this component, the City of Los Altos will have to divert with recycling approximately 23 percent of the total waste stream in the short-term planning period. The City of Los Altos has selected the following programs and alternatives:

Residential alternatives

- Continue a residential curbside collection program for recyclables. This program will result in 17 percent diversion of the total waste stream by 1995.
- Add more materials to be collected in various recycling programs
- Continue to allow buy-back and AB 2020 centers for recyclables. This program will result in three percent diversion of the total waste stream. This selection is based on impact, effectiveness, and as well as ease of implementation in the short-term.
- Continue a multi-family dwelling program for recyclables. This program is incorporated in the curbside recycling program.

Non-Residential Alternatives

- Expand the commercial recycling program. This program will result in three percent diversion of the total waste stream for the following materials and waste types (estimated percent contribution by material type in parentheses): cardboard—two percent, high grade paper— .5 percent, and beverage containers—.5 percent . This selection is based on impact, effectiveness, and ease of implementation in the short-term.
- Continue a program to divert inert solids generated from public works and construction/ demolition projects to a materials processor.
- Develop partnership relationships with economic development professionals, local businesses and organizations to create end user market development

Residential *and* Non-Residential Alternatives

- Continue a variable rate structure for both commercial and residential collection. This selection is based on impact, effectiveness, and ease of implementation in the short-term.
- Expand city-sponsored recycling programs throughout city offices and operations.
- Review any multi-jurisdictional approaches to recycling such as public education, disposal fees, and market development. This selection is based on impact, effectiveness, and ease of implementation in the short-term.
- Provide information on the CIWMB's Materials Exchange Program and other similar resources throughout California

Medium-Term Planning Period

In order to meet the goals and objectives outlined in this component, the city will have to divert approximately 32 percent of the total waste stream in the medium-term planning period. All programs and alternatives selected in the short-term planning period will be continued in the medium-term. In addition, Los Altos has selected the following programs and alternatives:

Non-Residential Alternatives

- Expand recycling program to divert inert solids from debris boxes. This selection is based on impact, effectiveness, and ease of implementation in the medium-term.
- Continue a program to divert inert solids generated from public works and construction/ demolition projects to a material processor.

Residential *and* Non-Residential Alternatives

- Continue a market development program through a local procurement program for products with recycled material content.
- Continue a program of materials handling methods for recyclables.
- Monitor efforts at the state level to encourage recycling, including financial and economic incentives, public education efforts, and other programs.

Market Conditions

Recycling requires more than the separation and collection materials; viable markets must exist for the recovered materials. This section addresses the existing market conditions relevant to the City of Los Altos, as well as on a broader scale (e.g., regional, statewide, national, and international). The focus is on those materials most often collected through recycling programs, such as various paper grades, plastics, metals, and glass. Many resources exist which identify local markets for different materials; most of these are in the form of lists compiled by entities such as the California Department of Conservation (DOC) and the California Integrated Waste Management Board (CIWMB). For this reason, only highlights are addressed in this section. In

addition, the DOC is in the process of preparing a statewide database called *Market Watch* which will be fully operational in approximately 9-12 months, and will include information on markets in California.

Los Altos is in the fortunate position of being able to take advantage of the contracts that Los Altos Garbage Company has established with various processors nationwide, which amounts to virtually guaranteed markets for many waste types; some of these are included in the following discussion.

Old Newspaper (ONP). Old Newspaper is the main grade of waste paper collected in the residential sector. A number of other ONP markets are available in northern California, including the South Bay. Currently, the amount of ONP that is available nationwide for recycling far exceeds the demand. However, this situation is expected to change. It is estimated that the demand for ONP will almost double by 1995 due to increases in exports of ONP, increases in the paper board market, and other factors.

Because ONP is contaminated with printing inks, it is necessary to de-ink this raw material before it can be recycled for certain uses. The primary reason for excess ONP is the shortage of newsprint facilities that can de-ink the newspaper or reuse it. The de-inking capacity in the United States is expected to increase in the future to meet the anticipated demand and help balance the market.

End uses for ONP include newsprint, insulation, packing, building materials, and animal bedding. Newsprint manufacture is anticipated to be the largest market for ONP and is anticipated to increase significantly through the year 2000. Other end uses are anticipated to increase only marginally.

Current market prices paid for ONP in California range from $15 to $30 per ton. However, the market price for ONP is cyclical due to decreased collection in the winter months, paper mill shutdown for maintenance repair in the summer months, economic conditions, international exchange rates, and other factors. Some local haulers have contracts with Weyerhaeuser Paper Company (Weyerhaeuser) for newspaper.

Old Magazines (OMG). A new market is emerging for OMG; many newspaper recycling mills plan to use OMG in the production of newsprint. This will result in a lower demand—until more newspaper recycling opportunities emerge in the next couple of years—for ONP. OMG is now being used in newspaper recycling mills due to their conversion from a simple wash process to a flotation process of de-inking. The Smurfit Companies have converted to flotation de-inking and can utilize supplies of OMG. The current price paid is at its highest, $5 per ton; a higher price can be negotiated, based on volume. The main requirement for preparation of the magazines is that they be loose—not bagged or tied with string.

High-Grade Waste Paper. High-grade paper is a general description of various long-fiber grades of paper. High-grade paper includes white ledger, colored ledger, computer paper, and tab cards. These grades are more valuable for recycling because of their strength, and thus command a higher price than other paper grades.

Market prices for high-grade paper are dependent on the price of pulp. Because high-grade wastepaper is often used as a substitute for pulp, high-grade paper prices tend to fall with the price of pulp. The market prices for different paper grades vary independently. However, the market price for higher grades are generally more stable than that paid for lower grades. The higher the degree of separation from the source, the higher the price paid for the paper. High-grade paper can be used in making writing paper, computer paper, napkins, facial tissues, and

paper towels. Some local haulers have contracts with Weyerhaeuser for high-grade waste paper.

Paperboard. The Newark Group is a national producer of recycled paperboard made from a variety of paper and paperboard grades. The company produces uncoated boxboard, specialty paperboard, tube stock, coated boxboard, gypsum liner, corrugated medium, and other paperboard. The company has locations throughout the United States. Those nearest to Los Altos are located in Santa Clara, San Jose, Newark and San Leandro.

Mixed Waste Paper. As implied in its name, mixed paper refers to a paper stream containing more than one grade of paper. Mixed paper is defined in AB 939 as 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. The housing industry and the value of the U.S. dollar overseas greatly affect the demand for wastepaper. A strong dollar overseas means a decrease in the demand for waste paper. Secondary markets for recovered paper can be found in the U.S and abroad. Mixed paper export has increased significantly and has allowed for growth in mixed paper recycling, particularly in the western United States. Local domestic markets, however, are fairly well saturated. Potential buyers for wastepaper in the Bay Area include: Weyerhaeuser in San Jose and DAI El Papers USA Corporation in Burlingame, but other markets need to be identified in order for recycling of mixed paper to be feasible in the City of Los Altos.

The primary use of waste paper is in the manufacture of combination boxboard which is used to make boxes for shoes, clothing, and dry foods. Other uses for mixed waste paper include the manufacture of roofing felt and construction paper building materials.

Old Corrugated Containers (OCC). The amount of OCC consumed in the U.S. is significant, approximately 15 million tons per year, due to its use in shipping packaging for most consumer products. The quantity of OCC in the waste stream is greater in the commercial sector than in the residential sector. OCC that has been separated properly can be used in the manufacture of new corrugated containers, cereal boxes, pad bases, and wallboard.

The market for OCC in California is very strong; more than one half of the collected OCC in California is used by mills within the state. Current market prices for OCC range from $30 to $50 per ton. Potential buyers for OCC collected in the City of Los Altos are Jefferson Smurfit and Weyerhauser in San Jose and DAI EI Papers USA Corporation in Burlingame. Some local haulers have contracts with Weyerhaeuser for OCC.

Aluminum Cans. Approximately half of the aluminum disposed of in solid waste is in the form of cans. The waste recovery system for aluminum cans is highly successful. Compared to other recyclables, aluminum cans command the greatest price per pound.

Aluminum cans that have been separated can be used by the primary producers and are remelted and made directly into can stock. Aluminum scrap is used primarily by secondary aluminum producers. Current scrap value market prices for aluminum cans range from $0.40 to $0.55 per pound. The addition to the AB 2020 redemption value raises the total market price. Markets for aluminum cans exist in the U.S. and abroad.

Steel Food and Beverage Containers. Tin cans that are used as food containers are actually steel cans with a thin coating of tin. The percentage of tin in steel cans usually totals about 0.25 percent[1] and is worth approximately $3 to $4 per ton. Even this small amount of tin can cause contamination in steelmaking. For this reason, detinning is used to both reclaim valuable tin and improve the quality of the steel scrap, although sometimes the post-consumer steel cans and scrap are used directly as a raw material.[2] Steel can recycling is expanding, due in part to

increased participation by steel mills and detinning mills in collecting and purchasing used steel cans.[3] This is despite aggressive efforts by the aluminum can industry to enter the steel-dominated food can market.[4]

The major detinning companies have opened new facilities around the U.S. to accommodate the influx of steel cans and the demand from the steel industry. This has helped decrease transportation distances for recyclers.[5]

Glass Cullet. Waste glass usage in the U.S. is estimated at 25 to 30 percent of the glass produced. Cullet is primarily traded on the U.S. market, so its market price remains fairly constant. A primary concern for end use markets is the quality of the material. In the glass plant, contaminants can cause damage to equipment or result in poor quality product. One of the problems with curbside collection of commingled glass is that it produces multi-colored shards of glass. Markets for mixed-color cullet are not as stable or lucrative as that for color-sorted containers.

The two primary end uses for recovered waste glass are cullet for new glass and as a raw material for making secondary products, such as glasphalt highway paving material, foamed insulation, and construction material.

Two potential markets for recovered glass for the City of Los Altos are Golden State Glass Recycling in Newark and California CRINC in San Leandro. Neither charges a processing fee to take the materials. The glass market has become problematic for many recyclers recently due to the increased quality standards being imposed and the request for color-sorted materials. Current market prices for sorted California Redemption Value glass range from $0.03 to $0.05 per pound sometimes with a stipulation that the glass be color-sorted. The addition to the AB 2020 redemption values raises the total market price.

Plastics. Markets for plastics are fairly new, but the EPA predicts that as processing technologies are developed, plastics recycling will grow and new markets will develop.

Most soda containers are made out of polyethylene teraphthelate (PET) which is the most recycled of all plastics. Over 160 million pounds of PET bottles were recycled in 1988. Post-consumer PET is prohibited for use in new food containers because of FDA restrictions (although certain developments are underway that may lift this restriction). The primary end use for PET is fiberfill, which is used in pillows, sleeping bags, and ski jacket insulation, among other things. The most desirable market for recycled PET is compounded, extruded, and molded plastic makers.

High-density polyethylene (HDPE) is used in the manufacture of jugs (e.g., milk, cider, distilled water) and bottles (e.g., laundry and dish detergent, motor oil, antifreeze). Although the market for recycled HDPE is growing, because of sanitary restrictions, these items are not recycled back into food packaging. Major potential markets for recycled HDPE are soft drink basecups, plastics lumber, containers, drums, pails, and various types of pipes. One major West Coast processor of HDPE is Partek in Vancouver, Washington, which is adjacent to Portland, Oregon. Partek processes only HDPE Grade 2, and uses it to manufacture new containers. HDPE Grade 2 is used in its natural color for milk, water, and juice jugs and is colored for use in laundry detergent containers, shampoo and conditioner bottles, and antifreeze containers.

Low-density polyethylene (LDPE) is used primarily in the manufacture of various types of film, such as food wrapping. Greater than 1,310 million pounds of it is made into trash bags. It is also used to make piping and to coat wires and cables.[6] It is also used in the manufacture of

rigid items, such as food storage containers and flexible lids.[7] LDPE is used in plastic grocery bags, which is one of the fastest growing segments of recycling. Four manufacturers provide most of the grocery sacks in North America and are committed to separating plastic grocery sacks from the waste stream to make them into new products.[8]

Some local markets for LDPE are Bay Polymers in Fremont, RPX Resins in Scotts Valley, and Tech Polymers in Berkeley. Also, Dow Chemical Company and Sealed Air Company have formed a joint venture to recycle LDPE; one of its local plants is in Hayward. At this time, the program is available to Dow and Sealed Air customers only, but expansion of the program is being considered.[9]

Polystyrene. There are various forms of polystyrene, the most familiar being the foamed or expanded polystyrene foam (EPS) commonly referred to as styrofoam. The uses for EPS foam include fast-food single serve cups and trays and packing materials in both rigid, molded form and in loose form or "peanuts," as it is sometimes called. The local market for polystyrene products includes Free-Flow Packaging Corporation in Redwood City and Bay Polymer Corporation in Fremont. Recovered polystyrene can be used in the manufacture of toys, office equipment, insulation, and cassette casings.

Telephone Books. Louisiana Pacific Company in Oroville expects to use a steady supply of telephone books for its particle board manufacture once it has its equipment for that part of the operation in place. The company uses phone books to make up approximately 10 percent of the content of its particle board. The company is presently in the early stages of acquiring the additional equipment necessary to expand its capacity. The current primary market for 90 percent of the telephone books recycled last year was overseas.

Inert Solids. Asphalt and concrete from construction demolition gets landfilled in many areas, although it is often recyclable. Local recyclers are Raisch Products in San Jose, Zanker Road Resource Management in San Jose, and Stevens Creek Quarry, Inc. in Cupertino.

Overseas Markets. Strong markets exist abroad (e.g., Mexico, Saudi Arabia, Pacific Rim nations) for many materials, especially mixed waste paper, telephone books and newspaper. Numerous brokers on the West Coast represent these markets and are listed in various references.

Program Implementation

This section identifies and describes the specific government agencies responsible for implementing the selected alternatives; the specific tasks necessary to achieve full implementation of the selected alternatives; and an implementation schedule. This information is presented in Table 3.1. Additionally, the costs, revenues, and revenue sources necessary for implementation of the selected alternatives are presented in Table 3.2

The City of Los Altos has an anti-scavenging ordinance to deter the unauthorized removal of recyclables from recycling collection programs. In addition, the city will continue to be active participants in any countywide or regional efforts to establish strong markets for recycled materials. The city will also support other jurisdictions activities and regulations.

Table 3.1

Recycling Program Implementation

City=Los Altos Public Works Department LAGCo=Los Altos Garbage Company County=Santa Clara County

Task	Responsible Agency	Implementation Date
Short-Term		
Continue residential curbside recycling program	LAGCo/City	ongoing
Increase multi-family dwelling participation	LAGCo/City	January 1993
Expand commercial recycling program	LAGCo/City	ongoing
Increase number of material types collected	LAGCo	ongoing
Increase participation in recycling programs	City/LAGCo	ongoing
Continue to encourage buy-back and 2020 centers	City	ongoing
Continue variable rate structure	City	ongoing
Expand programs throughout city facilities	City	ongoing
Review multi-jurisdictional approached	City/LAGCo/County	ongoing
Continue government procurement program	City	ongoing
Conduct waste stream characterization study	City/LAGCo	September 1995
Medium Term		
Continue all of the above	City/LAGCo/County	ongoing
Increase demand for materials made from post-consumer	City	July 1995
Increase when feasible types of plastic collected	LAGCo	ongoing
Expand program to divert debris box inert solids	City/LAGCo	January 1996
Monitor state efforts for financial and economic incentives, public education etc.	City/LAGCo/County	ongoing
Modify refuse collection practices to optimize recycling	LAGCo	ongoing
Conduct waste stream characterization study	City/LAGCo	September 2000

Table 3.2 Recycling Program Funding

City=Los Altos Public Works Department LAGCo=Los Altos Garbage Company County=Santa Clara County

Task	Annual Cost	Revenue Source
Short-Term		
Continue residential curbside recycling program	$200,000	$150,000 material sales 50,00 user fees
Increase multi-family dwelling participation	include in public education component	
Expand commercial recycling program	included in other costs	
Increase number of material types collected	unknown	
Increase participation in recycling programs	included in public education component	
Continue to encourage buy-back and 2020 centers	unknown	
Continue diversion of inert solids from city projects	unknown	
Continue variable rate structure	none	
Expand programs throughout city facilities	included in other costs	
Review multi-jurisdictional approached	none	
Continue government procurement program	none	
Conduct waste stream characterization study	$30,000	$30,000 user fees
Medium Term		
Continue all of the above	City/LAGCo/County	ongoing
Increase demand for materials made from post-consumer	included in public education component	
Increase when feasible types of plastic collected	unknown	
Expand program to divert debris box inert solids	unknown	
Monitor state efforts for financial and economic incentives, public education etc.	none	
Modify refuse collection practices to optimize recycling	none	
Conduct waste stream characterization study	$35,000	$35,000 user fees

Monitoring and Evaluation

To ensure that the selected recycling alternatives are meeting the goals and objectives of this component, the city will implement a monitoring and evaluate program. Because the objectives of this component extend throughout both the short-term and medium-term planning periods, the city's monitoring and evaluation program will continue, as needed, during both planning periods.

Monitoring Methods.

The methods for quantifying and monitoring the achievement of the component objectives are presented below in three groups: Objectives 1, 2, and 3; Objectives 4,5, 6, and 7; and Objectives 8, 9, and 10.

Objective 1:

Increase participation in residential recycling programs.

Objective 2:

Increase participation in multi-family dwelling recycling programs

Objective 3:

Increase participation in commercial recycling programs.

Monitoring Method: An annual survey of residences and commercial businesses will be conducted to ascertain the participation rates for recycling programs, the general level of awareness regarding recycling issues, and the level of satisfaction with the community's programs.

Objective 4:

Increase the number of material types collected from the residential and commercial sectors.

Objective 5:

Establish a diversion program for materials currently collected via industrial debris boxes.

Objective 6:

Divert inert solids generated by the city's department of public works, municipal utilities, and capital improvement projects.

Objective 7:

Separate additional waste types from the residential and commercial waste streams.

Monitoring Method: Further waste characterization studies will be conducted at the end of the short-term planning period to measure changes in both waste type and waste quantities. These studies, will be combined with more informal "spot check" assessments of waste composition to monitor changes material types recycled, as well as program effectiveness. This will be aided by improved recordkeeping on the quantity, waste type, and generators of recovered materials.

Objective 8:

Increase local demand for materials made from post-consumer waste.

Objective 9:

Increase plastics recycling operations to include a wider variety of polymer types

Objective 10:

Modify refuse collection practices to optimize the economics of recycling operations.

Monitoring Method: An annual review of businesses and city government will be conducted to monitor procurement practices and, specifically, to identify increases in the purchase of

recyclable materials and products, as compared to the previous year's purchasing practices. In addition, the city will continually monitor national trends in recycling with respect to new technologies, processes, and market development.

Written Criteria.

The city will prepare annual reports describing the findings of the monitoring activities described above. The report will provide written criteria evaluating the effectiveness of the recycling programs by reporting on whether (1) the recycling objectives are being achieved; (2) the selected programs and activities were implemented on schedule; (3) business procurement practices have changed; and (4) residents increasingly participate in and have a greater understanding of recycling.

Responsibility For Monitoring.

The monitoring and evaluation activities described in this section will be implemented by the public works department.

Funding Requirements.

Funding for the monitoring and evaluation program described in this section will be provided by the city through user fees. Funding for this program includes the costs of (1) administrative activities, (2) recordkeeping, (3) program monitoring and surveying, (4) tracking of survey results, and (5) annual report-writing.

Contingency Measures.

If the programs described above fail to meet the goals and objectives of this component, the following tasks can be implemented:

- Analyze existing programs and alternatives for obstacles to successful implementation
- Modify selected alternatives, including degree, scope, or extent of recycling activity and implementation schedule
- Seek additional funding and staff
- Consider pooling resources with other cities or counties in order to market materials cooperatively
- Investigate the existing collection and processing activities to be sure that materials are being prepared properly to meet buyer's specifications
- Evaluate public education efforts to determine whether these need to be increased to broaden awareness of, and participation in, recycling programs
- Evaluate alternative markets for recovered materials
- Provide incentives to the commercial/industrial sector for recycling
- Address issues resulting from surveys that could potentially be affecting diversion goals
- Consider regulatory programs or mandatory programs such as:
  - City ordinance making recycling mandatory
  - A rate structure modification
  - More aggressive procurement ordinances
- Select additional alternatives

Recycling Collectors and Brokers
that
Responded to The County of Santa Clara Recycling Survey [10]
(January/February 1991)

1. Circo Recyclers
   (Commercial Recycler)
   6565 Smith Avenue
   Newark, California 94560
   (415) 791-6980

2. Elder's MPI, Inc.
   (Reclaimers of Precious metals)
   1919 Lundy Avenue
   San Jose, California 95131
   (408) 432-8870

3. Foothill Disposal Company
   (Collector/Hauler, Buy-Back Center)
   935 Terra Bella
   Mountain View, California 94043
   (415) 967-3034

4. Harris Recycling, Inc.
   (Collector/Wood Waste Chipper)
   787 "E" North King Road
   San Jose, California
   (408) 259-2290

5. Oakland Plastic Sales
   9733 San Leandro Street
   Oakland, California 94603
   (415) 562-6033

6. Reynolds Aluminum
   (Buy-Back Center)
   1303 Story Road
   San Jose, California
   (408) 651-6808

7. Sears Automotive Center
   (Commercial Recycling)
   10101 N. Wolfe Road
   Cupertino, California 95014
   (408) 255-0222

8. Security Shredding Co., Inc.
   1045 Commercial Court
   San Jose, California
   (408) 452-5996

9. St. Francis Cabrini Church
   15333 Woodard Road
   San Jose, California 95124
   (408) 371-3090

10. Trinie Martin Recyclers
    (Buy-Back Center)
    8565 1/2 Monterey Road
    Gilroy, California 95020
    408) 842-2565

11. West Coast Metal Processing, Inc.
    (Broker/Scrap Metal Dealer)
    1483 Salmon Way
    Hayward, California 94544
    (415) 489-8141

12. Free Flow Packaging Corp.
    (Buy-Back Center)
    1093 Charter Street
    Redwood City, California
    (415) 364-1145

13. Raisch Products
    (Asphalt/Concrete Recycler)
    P.O. Box 543
    San Jose, California 95106
    (408) 227-9222

14. Ciardella Garden Supply, Inc.
    (Garden Materials Recycler)
    2027 E. Bayshore
    Palo Alto, California
    (415) 321-5913

19. Goodwill Industries of Santa Clara Co.
(Buy-Back Donation Center)
1080 North Seventh Street
San Jose, California 95112
(408) 998-5774

20. Western Recycling
(Scrap Metal Dealer)
91 E. 4th Street
Morgan Hill, California
(408) 779-1781

21. L & K Debris Box Service
(Commercial Hauler/Wood Waste Chipper)
1313 Armstrong Street
San Francisco, California 94124
(415) 824-4322

22. EMS
(Broker)
231 Fallon Street
Oakland, California 94607
(415) 763-0101

23. Battery Center
(Buy-Back and Donation Center)
1552 Old Bayshore Highway
San Jose, California 95112
(408) 453-5438

24. Town of Los Gatos
(Donation Center)
P.O. Box 949
Los Gatos, California 95030
(408) 354-6809

FOOTNOTES **********

1 "A Force in Detinning," by Tom Watson, *Resource Recovery*, January/February 1989, p. 18.

2 Watson, p. 18.

3 "The Steel Can's Push for Recycling Respect," by Michael Misner, *Waste Age*, February 1991, p. 69.

4 Misner, p.70.

5 Recyclable Steel Cans: An Integral Part of Your Curbside Recycling Program, *Steel Can Recycling Institute*, Summer 1990, p.14

6 "Progress in Plastics Recycling", by Jim Glenn, *BioCycle*, December 1990, p. 53.

7 "All Plastics Are Not Created Equal," by Jerry Powell, *Resource Recycling*, May 1990, p.41.

8 "Plastic Grocery Sack Recycling," by Arthur Amidon, *Resource Recycling*, November 1990, p.24.

9 "Dow and Sealed Air Join to Recycle LDPE Scrap," by Susan Combs, *Recycling Times*, January 29, 1991, p. 9.

10 The type of business is indicated in parentheses, when available.

Composting Component

Introduction

A well designed and operated composting program can play a major role in the overall success of a solid waste management strategy. As such, composting will be a major contributor to the City of Los Altos' goals of 25 percent source reduction and recycling by 1995, and 50 percent by 2000. Composting can be defined as the biological degradation of organic matter under controlled conditions to produce a usable soil amendment. The results of the waste disposal characterization analysis indicate that approximately 22 percent of the city 's municipal solid waste consists of compostable material, therefore, composting has the potential to become a primary means of managing solid waste.

Reliance on composting as a major component of a solid waste management plan has several environmental and economic benefits. Economic benefits of composting may include one or more of the following:

- Avoided disposal costs;
- Reduced solid waste processing costs;
- Reduced demand on landfill capacity;
- Delayed need to incur capital costs of new landfill acquisition;
- Reduced expenditure on organic soil amendments.

Produced environmental benefits could include any or all of the following:

- Landfill space savings;
- Conservation of a valuable natural resource;
- Improved soil fertility and enhanced aesthetics through the application of compost;
- Reduced leachate strength from landfills.

Furthermore, legislative impetus toward composting resulting from regulatory bans on the continued landfilling of yard wastes or ambitious landfill diversion goals provides an additional justification for aggressively pursuing composting at this time.

This component of the plan first outlines the short- and medium-term objectives of the composting plan, as well as the status of composting programs currently underway. It then provides a summary of the various composting strategies that will be adopted, and presents a discussion for program evaluation, implementation and monitoring.

It should be noted that a detailed discussion of the technical and procedural guidelines for composting is beyond the scope of this document. More in-depth, technical discussions of composting methods can be found in References 1 to 5 at the end of this section.

Objectives

This section describes short- and medium-term objectives for the City of Los Altos' composting program. The program includes diversion of organic materials both by composting and by other methods of processing (e.g. the production of wood chips for landscaping purposes).

Short-Term Objective

- Divert ten percent yard waste by weight of the total waste stream generated
- Inform/ educate residents about how to participate in the yard waste collection program
- Identify particular sub-groups of potential end users and their anticipated product quality and quantity demands
- Review a plan for commercial and institutional food and food processing waste collection in anticipation of possible medium-term food waste composting.
- Encourage county and municipal departments to use compost products generated by the program, and inform residents of their availability
- Study the effect of collection and disposal rates on quality of compostable materials collected
- Encourage, via the Source Reduction Component, residential backyard composting
- Review market development strategies and participate in multi-jurisdictional programs whenever feasible

Medium-Term Objectives

Objectives for the medium-term planning period include the above and:

- Divert, through composting, approximately 12 percent by weight of the total quantity of yard waste generated by the jurisdiction
- Encourage food and food processing waste collection and composting
- Study the feasibility of co-composting yard waste with other organic residues
- Strengthen market development strategies

Existing Conditions

The results of the disposed waste analysis indicate that for the year 1991, disposed yard waste amounted to 6,190 tons; wood waste, 1,740 tons, food waste 2,692 tons. The source of the materials were the residential, commercial, and self-haul sectors. The amount of compostable materials generated by each of the sectors in 1991 was as follows: residential, 4,267 tons; commercial, 2,119 tons; industrial, 4,131 tons; and self-haul, 104 tons.

Compostable waste materials from the residential, commercial sectors, and debris boxes in Los Altos are collected with other mixed wastes using front and rear loaders. The yard waste and other biodegradable organic materials collected from the residential, commercial, and industrial sources are presently landfilled.

Los Altos is developing a residential program to collect yard waste for composting. This program is was begun in the spring of 1992. The City Council has approved citywide implementation by April 1993.

Program Alternatives

Collection Options

The highest quality compost products are produced from the separate collection of compostable materials. The materials can be collected separately for subsequent processing into usable end-products through curbside collection, a drop-off program, or both. Collection programs should be accompanied by aggressive promotion of source reduction methods, such as home composting. A description of source reduction programs is presented in Section II.

Residential Curbside Collection

Important considerations in the curbside collection of yard waste include: identification of the types of yard waste to be collected and the frequency of collection; method of set-out for yard waste; and type of collection vehicle. The collection system must be capable of handling these materials regularly and efficiently.

There are three main options for setting out yard waste in a residential curbside collection program:

- bagged;
- loose yard waste raked into street or to curb;
- designated rigid containers.

Advantages of containerized (versus loose) yard waste set-out include: 1) no significant behavior change is required of residents; and 2) standard existing waste collection vehicles can be used to collect yard waste. Disadvantages include: 1) debagging may be necessary; 2) collection crews may need to lift heavy bags or other containers; and 3) potential contaminants are hidden from view. By contrast, collection of loose yard waste requires no debagging and does not cause collection crew strain from lifting heavy objects. However, collection of loose materials may be more labor-intensive and more costly, may require parking regulations, and may result in residue left on the street requiring additional street sweeping to avoid storm drain pollution.

The inclusion of more highly putrescible types of compostable materials (e.g., food wastes) in the residential curbside collection program necessitates the use of a containerized collection system and a collection frequency of no less than once per week. The quantities and characteristics of the feedstock are important considerations in determining the type of container.

Mixed MSW is being processed at several facilities in the U.S. for composting. The processing methodology varies among the facilities, but typically involves a series of processes such as size reduction, magnetic separation, air classification, and screening. Although the quality of the compost produced from mixed MSW is generally not as good as that produced from source separated compostables (e.g., yard waste), this type of program has the advantage of not requiring that the material be source separated.

Commercial Program

A program similar to residential curbside collection would offer multi-family dwellings, business, and civic yard waste generators the opportunity to divert yard waste from the landfill.

The program could also include other wastes that could be composted, such as food wastes and manures. Collection of these materials generally is conducted by using bins ranging in size from 2 to 40 cubic yards or by means of dump trucks.

Food wastes comprise a significant portion of the overall waste stream. If properly managed, co-composting food wastes with yard waste would not introduce serious complications. These wastes have a high moisture content and must be promptly and properly mixed with bulky yard waste. This material will result in a high-quality compost.

For programs using manure as a composting feedstock, proper attention must be given to limiting the manure quantities, minimizing the storage time of the food wastes, and maintaining aerobic decomposition to minimize vector attraction and odor. In certain instances, manure may also contain chemicals which are included in feed supplements. It would be prudent to test the manure for undesirable chemical compounds.

Co-composting of yard wastes with sewage sludge is practiced in several operations in the U.S. The introduction of sewage sludge complicates the composting operation. Processing technologies, especially those of the preprocessing and active composting stages, require greater refinement than is necessary in a yard waste only operation. Site construction costs would increase, based on the need for more extensive paving, water runoff collection, and a larger buffer zone. Facility permitting would become a more complex process, due to potential environmental and health impacts that are more severe, or more difficult to mitigate, than those for yard waste composting. Los Altos does not have a sewage treatment plant.

Permanent Drop-Off Centers

A drop-off program relies on residents and/or private commercial haulers to transport clean (segregated) yard and wood waste to a designated site. This type of program keeps collection costs low, but generally results in less volume recovered than in a curbside collection program. This is a primary or sole collection method typically used in sparsely populated areas. If popula-

tion density is sufficiently high, a drop-off program can be supplemented by both a curbside collection and by a backyard composting program, for maximum recovery of yard wastes.

Key planning features for yard and wood waste drop-off sites include the following:

- A drop-off center can be more easily located at a landfill, transfer station, or at a MRF. Los Altos has none of these facilities.
- Sites can be open only a few days a week, such as one or two weekdays and on Saturdays, to minimize staff time.
- Sites should only accept source-separated or uncontaminated yard and wood wastes.
- Materials should be delivered in loose form [or in biodegradable paper bags].
- A conveniently-located receptacle should be provided so that residents can dispose of their plastic bags or other containers used to transport yard waste to the sites.
- Instructional signs should be placed at sites to indicate acceptable materials, unloading location, and site hours.
- Acceptable materials should include leaves, grass clippings, brush, and branches less than 6 in. in diameter. Stumps and branches over 6 in. in diameter, and construction and demolition wood should not be accepted.
- The tipping fee for commercial haulers and residential self-haul should be set at 25 per cent to 50 percent less than tipping fees at disposal sites in the region.
- One employee per site should monitor the site during hours of public access for quality control and organization.

Mobile Drop-Off Centers

These centers can be established using large collection trailers (approximately 40 cu yd capacity) in neighborhoods for short, scheduled periods of time. When full or when appropriate to be moved to the next neighborhood, trailers are first emptied at a centralized composting or pre-processing aggregation site.

Residential Onsite Composting

Onsite composting can be defined as the process of managed decomposition of organic materials on one's own premises that results in the creation of a usable horticultural product.

Onsite composting in residential areas is also known as "home" or "backyard" composting. Yard waste can be composted successfully at home fairly easily with minimal odors or disturbance from animals. Often, yard waste is composted together with food scraps. This works well, provided that the composting is managed properly and that meat by-products are excluded from the compost pile. This approach is generally most suitable for single- or two-family residences which have available space in their backyards.

Source reduction through home composting can be encouraged a volume based rate system for trash collection. Those who engage in composting at home will reduce their volume of waste, and consequently reduce their disposal costs. The quantities of yard waste requiring disposal can

also be reduced by leaving cut grass on the lawn, although this is technically not considered composting.

According to the regulations, onsite composting is a form of source reduction. Further information on onsite composting is provided in the source reduction component.

Compost Processing Options

Three stages of processing can be utilized at composting operations: pre-processing, composting, and post-processing. For source separated compostable materials, pre-processing generally involves shredding and/or screening of the incoming materials to result in a compost feedstock of a particle size that would compost more readily. As discussed earlier, the processing involved for a mixed MSW feedstock is more involved. The composting stage involves the biodegradation of the material and is discussed in the following paragraphs. Size reduction and/or screening are used in the post-processing stage to produce a compost or mulch product with a more consistent particle size.

There are several composting methods, ranging from low to highly complex technology. The most appropriate technology depends upon the composition of the feedstock, the capital and labor requirements, and the existence of suitable markets for the end products. It is likely that a combination of technologies may be the most advantageous. A brief description of available technologies follows:

The **turned windrow** method of composting calls for stacking wastes into elongated piles known as windrows. The dimensions of the windrows can be adapted to the particular conditions and available equipment, but in general, they are roughly trapezoidal in cross-section and sized to provide insulation, while avoiding compaction of the material. Satisfying these criteria usually results in windrows from 8 to 15 ft wide, and 5 to 10 ft high, and whatever length is convenient to the site. Aeration is accomplished by agitating or turning the piles using a front-end loader or specially designed turning equipment. The turning frequency depends on many factors, including the nature of the feedstock, its particle size, moisture content, and the desired rate of decomposition. Generally, but not necessarily, the more frequent the turning, the more rapidly the material decomposes. It is extremely important that site managers monitor temperature, moisture, and oxygen content of the piles to ensure that the materials decompose aerobically and rapidly, without the production of offensive odors. This method of composting generally requires between 6 and 18 weeks to finish.

The major advantages of this method are its ability to process large quantities of materials at a cost competitive with other solid waste disposal options, while producing a marketable and useful product. Turned windrow composting can often be accomplished at existing processing facilities, without very large capital expenditures, and within the stipulated time frame. Potential disadvantages that must be managed are the dedication of relatively large land areas to the project, the possible production of offensive odors, the intensive pile management required to maintain favorable conditions, and the formation of leachate.

The **aerated static pile** or **forced aeration** method of composting is similar to the turned windrow method, except that oxygen is supplied to the windrows through a network of pipes and blowers that either force or draw air through the composting matter, rather than through turning. However, in practice, it is advisable that some mechanical turning of the piles be carried out to promote complete decomposition and avoid anaerobic pockets. The complexity and expense of this method is generally not justified to compost leaves, grass and other yard wastes. It is appropriate, and commonly used, for stabilization of sewage sludge, and is being applied in dedicated mixed MSW composting projects.

In-vessel composting entails the use of fully or partly enclosed vessels in which decomposition takes place under closely monitored conditions. Its relatively high capital and operating cost makes this method appropriate only for the decomposition of highly putrescible feedstocks, or feedstocks that could be the source of offensive odors such as food wastes. This method of composting is capable of producing a high quality end-product, but its expense makes it unattractive as a primary management option for yard wastes.

Size reduction of brush and wood waste (shredding and chipping), although not strictly composting, can be an important and useful element of a yard waste recycling program, or a stand-alone means of handling woody wastes, or both. Small trees, branches, brush, broken pallets, clean used lumber, and other woody waste can be used, after size reduction, either directly as mulch or wood chips, or, if adequately reduced in size, included in compost piles. It is difficult to compost woody wastes without prior size reduction because the relatively high carbon-to-nitrogen ratio slows the decomposition process to impractical time periods. Shredding of woody wastes can generally be implemented in the short-term, with relative ease, and a minimum of uncertainty. No major new facilities should be needed for the operation.

Siting Options

In addition to the material presented here, please refer to Section IV on facility siting. The availability of suitable sites for composting may pose a major barrier to proceeding with operations. Technical, regulatory, economic, political, social, and environmental factors all play a role in the siting process. Potential sites may include:

- Unused portions or completed sections of existing landfills and other solid waste facilities such as transfer stations;
- Unused portions of wastewater treatment facilities;
- Large, unused areas;
- Buffer areas around industrial sites and institutions, including airports;
- Utility rights-of-way;
- Privately owned land;
- Municipally owned land used for buffer areas or storage.

Factors to consider when evaluating potential sites are dependent upon local environmental and developmental regulations, state requirements, and the specific concerns relevant to the

proposed site. Generally, factors may include:

- Proximity to waste stream;
- Proximity to potential markets;
- Availability and cost of the site;
- Accessibility;
- Potential for public acceptance;
- Physical condition of site, including topography, geology aesthetics, and other factors;
- Availability of utilities;
- Current and planned adjacent land use.

The suitability of a given site will, of course, depend on its intended use. As described above, the various factors must be weighed against the proposed option's ability to divert waste.

Market Development

Markets will be identified and established for the end-products from the selected composting program. The market plan will identify the end-products and the quality standards. Quality standards are very important in the marketing of end-products. Market demands will be monitored regularly.

Local markets such as homeowners, municipal and county agencies, nurseries, sod farms, and landscaping supply firms are examples of potential end users. It will be necessary to determine how the end-products will be distributed (i.e., bagged and/or bulk) and at what, if any, cost.

The plan will also include development of markets outside the immediate area. The City of Los Altos will explore the possibility of cooperating with other jurisdictions (especially the county) to market end-products.

Public Information and Education

In order to have a successful composting program, the public will need to be informed as to the benefits of the collection program, the benefits of using compost products, and how to obtain city-generated compost and other end products. The Public Information and Education Component covers in greater detail the process of educating and informing the public.

Once it has been determined what end-products will be generated, the cost to the public, and how the individual products will be made available, then a separate information program will be developed and implemented. This will be an important aspect of the overall composting component because the city must be able to dispose of the finished products.

Evaluation of Rates

In order to improve the overall quality of end-products, the city, during its regular review of rates, will study the effect of rates on assuring high-quality compost products. It may be more

cost-effective to have source-separated yard waste or other compostable feedstocks. This would allow for improved quality of end-products. Adjustment to certain rates (e.g., variable-rate residential collection, reduced rates for clean self-haul loads) might encourage this.

Evaluation of Alternatives

Residential Curbside Collection

Advantages of curbside collection, over drop-off programs, for yard waste or other compostables include: 1) convenience for residents; 2) high community profile and awareness; 3) high participation and recovery rates; and 4) linkage with mixed waste collection.

Disadvantages of curbside collection for yard waste or other compostables include: 1) higher cost; 2) greater complexity; and 3) longer implementation time than with a drop-off program.

Residential yard waste comprises a significant portion of the overall waste stream. Diversion of any part of this waste stream will result in the reduction of solid waste going to landfills.

Commercial Collection

Compostable materials generated by the commercial/industrial sector include yard waste, wood waste, and food waste. The advantages and disadvantages for segregated collection of compostable waste from commercial and industrial generators are similar to those outlined under the evaluation of alternatives for residential curbside collection. In addition to the considerations mentioned previously, separate or commingled compostables collection of food waste may require the use of specialized collection equipment. The collection of food waste will also require changes in the way employees handle food waste disposal in restaurants and at other locations generating substantial quantities of food wastes. The local health department may place requirements on generators of food wastes participating in the food waste collection program with respect to the on-site storage of food waste.

Permanent Drop-Off Centers

A permanent drop-off program requires a minimal amount of financial investment and staff time, and can be implemented relatively quickly. Yard waste and wood wastes are self-hauled by small private haulers or individual residents to either the composting site or to a local drop-off center.

It is anticipated that a drop-off site could be established at the landfill and/or transfer station, and perhaps elsewhere, without the need to build new facilities. Site development costs are usually low. A materials recovery facility would also be a good location for a drop-off center.

To encourage self-haul, residents should be allowed to use the drop-off site at no or minimal cost, and could be given a voucher for finished compost or wood chips. Self-hauling reduces overall costs of collection.

Materials included in such a drop-off program could be limited to bulk leaves if specialized composting equipment (e.g., shredder) is not yet available for use at the composting facility.

Los Altos is a small community with no industrial zones or areas that would facilitate large scale handling of yard wastes.

Mobile Drop-Off Centers

Mobile Drop-Off Centers, using large collection trailers in neighborhoods for short, scheduled periods of time, can be an attractive alternative, particularly in areas with lower population densities or dispersed quantities of compostable materials. The cost generally ranges between that associated with curbside collection and permanent drop-off programs. Participation may need to be limited to residential generators to prevent commercial self-haulers from overwhelming the facilities.

In more rural areas, where residential users self-haul yard and wood wastes, the convenience of not having to transport to the landfill or transfer station will increase participation and increase diversion of materials.

Some disadvantages are: 1) participation will be less than that of a curbside program; 2) location of centers might require changes in zoning ordinances which are inconsistent with local policies; 3) the center would need to be staffed to prevent unauthorized disposal of unacceptable materials; and 4) additional equipment will be needed for collection and transportation.

Residential On-Site Composting

Backyard composting can be an inexpensive yard waste management alternative. It eliminates the public and private costs of collection, transport, tipping, and processing. Stopping the flow of materials before they become waste products that require outside handling is gaining recognition as a viable yard waste management option.

However, if backyard composting piles are not properly managed, they can emit unpleasant odors, attract insects and small animals, and become a nuisance to the neighborhood.

One way to stimulate interest in residential onsite composting and promote proper management is through public education and publicity. Backyard composting can be encouraged on more than a strictly economic basis. The values of exercise, recreation, workmanship, science education, and community pride can be identified with home composting.

Refer to the Source Reduction Component for additional information.

Processing Options

Turned Windrows

Turned windrows composting has minimal associated hazards; odors from poor site or process management is the most frequently mentioned concern. Others hazards, such as flow of runoff into surface water, generally can be controlled effectively with simple steps.

This method of composting can accommodate changing economic, technological, and social conditions rapidly and effectively. Turned windrow composting can be implemented in a short time frame, partly since site improvements are usually minor and new facilities usually need not be constructed. This approach supports local source reduction and recycling efforts, and can be effectively developed by existing local institutions. Turned windrow composting is preferred over other methods for composting yard waste.

One common approach is to utilize a front-end loader to form and turn windrows. Alternatively, specialized equipment (e.g., a windrow turner) can be used to turn and aerate piles effectively and rapidly. Rudimentary operations tend to cost $10 to $20/ton (amortized capital and operating expenses), while sophisticated operations often cost approximately $30 to $40/ton. The cost of many operations nationwide is between these extremes.

Aerated Static Pile

Composting of strictly yard waste via the aerated static pile method is rare. Expense and needless complexity render this method generally inapplicable to yard waste. Aerated static piles are more commonly used to compost sewage sludge.

Aerated static pile composting has minimal associated hazards; odors from poor site or process management is the most frequently mentioned concern. Other potential hazards, such as build-up of ammonia gas in indoor facilities, generally can be controlled effectively by adequate ventilation and process monitoring.

The static pile method can accommodate changing economic, technological, and social conditions relatively quickly and effectively, and does not interfere with or impede progress toward the State's waste reduction and recycling goals. A program using this method can be implemented in an intermediate time frame; construction of a new facility is usually needed. Institutional barriers to its development are few.

Given the same feedstock, static and turned windrows produce identical products if both operations are managed correctly.

Typical combined capital and processing costs for a 10,000 ton/year facility are approximately $25 to $50/ton.

In-Vessel Composting

Advantages of this method include rapid processing, avoidance of weather-related problems and inefficiencies, and more complete process and odor control. High capital costs and potential for system failure render this option not viable unless more than yard and wood wastes are composted and a rapid throughput time is employed. This technology cannot be implemented in the short-term, and is not particularly flexible in response to changing economic, technological, and social circumstances. Construction of a new facility is essential to support program implementation.

This approach may impede progress toward the State's waste reduction and recycling goals, since it cannot be implemented in the short-term. In addition, institutional barriers may be significant, unless the facility is operated privately.

Typical combined capital and processing costs for a 10,000 ton/year facility are approximately $40 to $60/ton.

Brush and Wood Waste Processing

Shredding or grinding of woody yard waste supports local source reduction and recycling efforts, and can be implemented in the short-term with relative ease and a low level of uncertainty. However, finished products that are sold as fuel cannot be counted towards the state's 25 percent diversion goal in 1995. They can be counted for up to 10 percent of the state's 50 percent diversion goal in 2000.

The technology can be adapted to adjust to technological, social, and economic conditions. Hazards from flying projectiles can be minimized by locating the size reduction processing site at least 300 ft from public access. No new facilities would be required for the operation, although a covered structure for the equipment would be desirable.

Suitable grinders, both mobile and stationary, can process approximately 5 to 10 tons/hour. Regular maintenance and unplanned downtime for certain types of grinders can be significant.

Amortized capital costs (excluding labor and other operating costs) generally translate into a cost of approximately $10 to $20/ton for a 10,000 ton/year operation.

Siting Alternatives

A privately-owned and -operated (or publicly-owned and privately-operated) processing site has several advantages, including:

- reduced allocation of staff and equipment by public sector;
- no public sector need to identify and develop composting facility (if privately-owned);
- contractually fixed or per unit fee for processing services;

- private responsibility for marketing of end-products;
- better control over operating costs (if publicly owned).

Disadvantages of this option include:

- limited public sector control over end-product outlets;
- possibly greater transport time and cost from collection point to processing location (if privately-owned and located in another jurisdiction).

CEQA Requirements

As a component of the overall SRRE, the selected composting program(s) will require an environmental review under the California Environmental Quality Act (CEQA). The environmental impacts of both collection and processing systems would require analysis. Depending upon the quantity and types of materials collected and processed, and the magnitude of potential environmental impacts, a negative declaration or an environmental impact report (EIR) would be prepared.

Distribution and Marketing

Distribution and marketing of the end-products of the composting program is the critical link in a successful plan. Most programs will produce one or more of the following products for distribution and marketing:

Compost: used primarily as a soil conditioner, secondarily as a minor source of macro and micro nutrients, to aid in the ability of soil to retain water, and as an ingredient in commercial top soil and potting soil blends;

Mulch: used to retard weed growth, lessen water loss, and stabilize soil temperature;

Wood Chips: serves as a mulch or top dressing, a bulking agent for sludge composting, and as a boiler fuel.

In general, the markets for mulch and wood chips are well developed and predictable. However, compost markets are less mature, and considerable effort should be put into ensuring a reliable outlet for any compost product, prior to program implementation. This program will first determine the specifications of the various materials that will be produced. This will be followed by the identification of the potential end-users for these products. The quality of the feedstock, the degree of source separation, and the processing methods ultimately selected will determine the quality and quantity of the different materials that will be produced, and therefore, the likely markets for them.

Quality constraints associated with compost can include:

- Maturity - material has not fully decomposed;
- Contaminants - presence of sticks, stones, plastic, metals, etc.;
- Low nutrient content - lack of value as fertilizer;
- Heterogeneity - lack of consistent, appropriate particle size;
- Soluble salts and improper pH - can limit use in nursery/potting mixes;
- Unappealing appearance - can limit acceptability.

Compost quality (good appearance, low concentrations of metals and toxic compounds, etc.) will be assured by thorough source separation, careful processing of the feedstock, and regular testing of the end-product. Although a high quality product generally assures more successful marketing, knowledge of the end-users will allow the production of a material of appropriate quality for its intended use. It is possible that the program may lead to the production of two types of composts having different quality. For example, nurseries demand a very high quality product, while highway departments can utilize a lower quality, less expensive product.

The following are potential end-users of compost products in Santa Clara County:

- local parks and highway departments;
- homeowners;
- greenhouses;
- landscapers;
- farmers and farm suppliers;
- golf courses;
- sod growers;
- cemeteries;
- schools;
- parks;
- public buildings.

If supply exceeds demand, public users of soil amendments can be mandated to give preferential treatment to compost products. The municipality will also consider giving the product away free to homeowners and landscapers willing to pick it up.

Program Selection

A residential yard waste collection program was initiated in April 1992. The participation rate every other week was 98 percent. Community support is high for continuing the program. The City Council has approved a yard waste collection program, operated by LAGCo, to be citywide by April 1992. Yard waste materials will be taken for processing at the Zanker Road Resource Recovery Facility in San Jose.

This privately owned facility serves surrounding cities. It is a Class III landfill and accepts rubbish, brush/stumps and demolition wastes for disposal. It accepts no garbage or hazardous waste except asbestos under certain conditions.

Zanker Road conducts extensive recycling activities at the site. On an average, 80 percent of the total incoming waste stream is recycled. Composting is done by grinding yard waste and using windrows to process the material within 30-60 days. Zanker has had an aggressive marketing program and plans to continue developing compost customers.

Short-Term

In order to meet short-term goals, an estimated diversion of ten percent (by weight) of the total generated waste stream will be necessary. The programs to achieve this goal are:

- Initiate the residential curbside yard waste collection program with the material going to a composting facility. This program will result in a seven percent (2,450 tons annually) diversion of the total generated waste stream. Selection is based on ease of implementation and on cost-effectiveness.

- Utilize compost generated by the program for city parks and landscaping

- Provide low or no-cost compost for residents

- Identify other end user markets and work with those businesses in obtaining compost from the Los Altos program. Work with other jurisdictions in developing these special markets.

- Review a drop-off program for yard wastes at a landfill or other existing site, focusing on self-haulers. The program is estimated to divert less than one percent from the total generated waste steam.

- Develop a program to divert yard waste from debris boxes which should result in a three percent reduction of yard waste from the total waste stream.

- Disseminate public education and publicity materials regarding yard and wood waste drop-off and curbside collection programs, home composting, and other yard waste reduction strategies. Refer to the Education and Public Information Component. The success of the program depends, to a great extent, upon how successfully the public is informed and educated.

Medium-Term

For the medium-term, an estimated diversion rate of twelve percent of the total generated waste stream will be necessary. In addition to continuing the above programs, medium-term programs to achieve this goal are:

- Optimize the residential curbside yard waste collection program. The program goal is a diversion of eight percent (2,800 tons annually) of the total generated waste stream. The program is an ongoing one, and therefore any incremental costs associated with operating the program should be minimal. The educational programs will also be continued.

- Expand the debris box program to divert four percent of the total waste stream through yard waste composting.

Cost

The following costs are planning level estimates, developed for comparison only. The estimates are based on a number of broad assumptions. The actual cost may vary depending on the individual requirements of specific sites and engineering design.

It is estimated that the selected programs will cost from $450,000 to $600,000 per year, or $184 to $246 per ton, for the short-term. Processing costs of $28 a ton are included in these figures.

Program Implementation

This section identifies the division of responsibilities between government agencies, program tasks, and timeline. Table 4.1 outlines implementation. Los Altos will consider any possible multi-jurisdictional approaches to establish additional composting facilities and the marketing of end user product. Los Altos will remain active and informed of countywide committees and programs supporting compost marketing.

Monitoring and Evaluation

To ensure that the composting program is meeting its goals and objectives, the program will be monitored and evaluated on a regular basis. Monitoring will include the following measures:

- recording at the processing site of the estimated volume (cubic yards) or weight (tons) of materials accepted for processing at the composting site, on a daily basis;

Table 4.1

Composting Program Implementation

City=Los Altos Public Works Department LAGCo=Los Altos Garbage Company County=Santa Clara County

Task	Responsible Agency	Implementation Date	Yearly Cost
Short-term			
Initiate pilot program for residential yard waste collection program	LAGCo/City	April 1992	included in program cost
Approve costs and concept of collection program	City/LAGCo	October 1992	N/A
Begin citywide collection for residential collection	LAGCo/City	January 1993	$500,000
Inform and educate residents of program and other composting opportunities	LAGCo/City	December 1992 ongoing	included in other
Review drop-off program	City/LAGCo	June 1993	included in other
Review possible plan for commercial and institutional food waste composting	LAGCo/City	January 1994	includedd in other
Develop program to divert debris box yard waste	LAGCo	June 1994	included in other
Identify end user markets and develop campaigns to encourage compost use	City/LAGCo	September 1994	included in other
Encourage residents, businesses, institutions and city departments to utilize composted material	City/LAGCo	ongoing	included in other
Review progress of program/recommend needed changes	LAGCo/City	January 1993 annually	included in other
Medium Term			
Optimize residential collection program		ongoing	
Expand debris box diversion program	LAGCo	March 1995	unknown

- recording at the processing site of the estimated volume or weight of reject materials that require disposal after pre- or post-processing, on an as-applicable basis;
- other supplementary measures as deemed necessary or desirable.

A waste generation study will be undertaken by the City of Los Altos at a time agreed upon by the State to evaluate changes in the disposal levels of materials targeted or that could be targeted by the composting program. Data gathered in the waste generation study will be compared with data gathered in a similar study conducted for the City of Los Altos in 1990.

The effectiveness of the composting program (including on-site composting and other organic waste reduction techniques will be gauged in the medium-term as follows, subject to modification in accordance with State guidelines:

- less than 25 percent diversion of yard and wood waste, unsatisfactory;
- between 25 and 50 percent diversion of yard and wood waste, needs improvement;
- between 50 and 75 percent diversion of yard and wood waste, satisfactory;
- greater than 75 percent of yard and wood waste, effective.

If it is determined that projected diversion rates will not be obtained, the community has several alternatives available. An evaluation of all selected programs might show the need for increased public information and educational materials. The City of Los Altos will look at potential measures to increase compost program efficiency, develop strategies for securing additional markets for finished compost products, and determine whether or not to increase diversion of certain compostable materials.

If it is determined that the anticipated diversion rates cannot be achieved, the community will increase diversion rates in one or more of the other components (i.e., curbside recycling).

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Special Waste Component

Introduction

Special waste is solid waste that requires unique handling and disposal methods because of health hazard, environmental impact, or physical characteristics. Special waste is defined in Section 18720, Article 3, Chapter 29, Title 14, California Code of Regulations (CCR).

As defined in Section 18720, special waste is any hazardous waste listed in Section 66740 of Title 22 of the CCR, or any waste that has been classified as a special waste pursuant to Section 66744 of Title 22 of the CCR, or "has been granted a variance for the purpose of storage, transportation, treatment, or disposal by the Department of Health Services pursuant to Section 66310 of Title 22 of the CCR. Special waste also includes any solid waste which, because of its source of generation, physical, chemical or biological characteristics or unique disposal practices, is specifically conditioned in a solid waste facilities permit for handling and/or disposal."

Most special wastes have not been found in Los Altos in significant quantities. The discussed waste types are not all targeted for diversion. In fact, most special wastes generated in Los Altos are already managed appropriately.

Typical Special Wastes

Typical special waste types include

- Sewage sludge
- Ash
- Asbestos
- Used tires
- "White goods"
- Abandoned vehicles
- Dead animals

Sewage sludge is produced by wastewater treatment plants during secondary treatment of waste water. In areas where wastewater systems service industrial areas, sludges may contain heavy metals and other constituents that can pose hazards to public health. Disposal of sewage sludge in solid waste landfills is becoming more difficult because of stricter landfill regulations.

Ash is generated from the combustion of solid waste, such as wood waste and sewage sludge. Ash can be disposed of at a Class III landfill[1] unless the Department of Health Services determines that the waste must be managed at a hazardous waste facility. Because concentrations of

metals in ash commonly exceed levels set by the California Department of Health Services, the ash is considered to be a California Hazardous Waste and must be managed by a hazardous waste facility. However, primary ash management in the United States is land disposal.

Asbestos is a naturally-occurring fibrous substance that has been shown to cause lung cancer and other respiratory problems. Before 1970, asbestos was in widespread use in products such as ceiling and floor tiles, and insulation for pipes, boilers, and ducts. Asbestos is generally classified as friable (hazardous) or nonfriable (nonhazardous). Friable, or airborne asbestos is known to have adverse effects on the human lung and poses a potential public health risk when inhaled. It becomes available for inhalation when the material is disturbed in processes such as building repair or maintenance. Friable asbestos in the waste stream is considered a hazardous waste and requires special handling and disposal in a landfill permitted to accept hazardous wastes.

In accordance with Sections 2520 and 2522 of Subchapter 15, Title 23, Chapter 3, nonfriable asbestos can be disposed of in a Class III landfill provided the facility has waste discharge requirements permitting the disposal of asbestos.

Since asbestos poses a potential risk to public health, it is not possible to recycle or divert it from landfill disposal; therefore, the only alternative to consider in managing asbestos is disposal in accordance with all pertinent local, state, and federal regulations.

Used tires pose special handling and disposal problems because of potential environmental and public health impacts. For example, stockpiled used tires can collect rainwater and serve as breeding grounds for disease vectors; they can also pose a fire hazard. Tires disposed of in a landfill tend to "float" to the surface, thereby interrupting landfill cover. They can cause differential landfill settlement if concentrated in one area in the landfill. Nevertheless, in compliance with current regulations, tires are considered nonprutrescible waste and therefore can be accepted at Class III or unclassified landfills.

Generally, used tires are either disposed of, or are diverted to a tire recycler for one or several uses, including re-use, tire-derived products, or tire-derived fuel.

"White goods" are large appliances (such as washers, dryers, and refrigerators) that have entered the waste stream. White goods have special handling requirements because of their sheer size and weight; in addition, they may contain polychlorinated biphenyls (PCBs) and chlorofluorocarbons (CFCs). PCBs are a known human carcinogen, and CFCs have been shown to break down the stratospheric ozone layer. As of July 1992 white goods with CFCs are banned.

The electrical capacitors and cooling units in these appliances should be removed before the white goods are placed in a landfill. White goods must be thoroughly crushed before burial to avoid refuse bridging, which can cause uneven compaction of the refuse fill. If the electrical capacitors and cooling units are not removed before crushing, PCBs and CFCs could be released into the environment.

Generally white goods are managed by a combination of source reduction (repair, reuse), recycling, and disposal.

Abandoned vehicles (under California regulations), are considered to be an unclassified waste, thus qualifying for disposal in a Class III landfill.

Dead animal collection and disposal are generally managed at a county level under the authority of the Animal Control Department of the Santa Clara County Public Services Agency. Owners are responsible for the disposal of their pets; however, the department will collect and dispose of the animal for a fee. State agencies are responsible for dead animals found on highways or state property.

Many landfills are normally permitted to accept small animals for disposal; generally, large animals should be taken to a renderer.

Handling Methods for Disposal

Special waste requires specific handling methods for disposal; these are enforced by the Regional Water Quality Control Board, the Local Enforcement Agency, and the California Integrated Waste Management Board. Summarized below are common handling requirements for the disposal of special wastes.

Sewage Sludge

Water treatment sludge can be discharged at a Class III landfill under the following conditions, unless the DHS determines that the waste must be managed as a hazardous waste: (1) the landfill is equipped with a leachate collection and removal system; (2) the sludge contains at least 20 percent solids if primary sludge (or at least 15 percent solids if it is secondary sludge); and (3) a minimum solids-to-liquid ratio of 5:1 by weight is maintained.

Ash

Ash may be landfilled at a Class III facility unless the DHS determines that the ash must be managed as a hazardous waste.

Asbestos

Friable asbestos-containing waste must be managed as a hazardous waste. Nonfriable (nonhazardous) asbestos can be disposed of at a Class III landfill, provided that certain handling requirements are adhered to and the facility is properly permitted. Handling requirements include a dedicated disposal area away from the normal tipping area, and immediate entombment upon receipt of the waste.

Used Tires

Tires accepted for disposal should be placed flat at the base of the active face in order to inhibit the tendency of tires in landfills to float to the surface. To prevent differential settlement,

tires should not be buried in high concentrations in one area of the landfill. Tires can also be shredded before being landfilled in order to make burial less problematic.

White Goods

White goods accepted for disposal at a Class III landfill should be placed in the lower portion of the advancing lift, separated to prevent bridging of the surrounding refuse, and thoroughly crushed by compacting equipment. Electrical capacitors and cooling units should be removed from the units before placement of the white goods in the landfill. These components are removed to prevent the potential release of PCBs and CFCs when the wastes are crushed.

Abandoned Vehicles

No landfills in Santa Clara County are permitted to accept abandoned vehicles. Abandoned vehicles pose the same disposal problems as other large bulky items such as white goods and should be handled accordingly.

Dead Animals

Generally, large dead animals should be taken to a renderer. Small dead animals can be disposed of at the active tipping area of the landfill. Large quantities of small dead animals should be disposed of at the base of the active face and covered immediately with soil.

Objectives

The special waste objectives presented in this section have been developed to meet the goal of reducing the amount of solid waste generated in the City of Los Altos. These objectives are to be implemented in the short-term planning period (1991-1995) and continued during the medium-term planning period (1996-2000). The City of Los Altos can expect to divert less than one percent of the total waste stream by implementing the following objectives:

- continue existing programs that divert recyclable special waste from landfilling, particularly white goods
- continue to provide for environmentally safe management or disposal of special waste that cannot be recycled
- increase the recovery of recyclable special waste from the solid waste stream

Target waste types for special waste have been identified, based on three factors:

(1) the results of solid waste generation studies; (2) the effectiveness of meeting the special waste objectives; and (3) criteria that include the volume and weight of the material, the hazard created by the material, the percent content of non-renewable resources, the durability of the material, and the recyclability of the material. These target waste types are:

- sewage sludge
- abandoned vehicles
- dead animals
- white goods

Alternatives for diverting the targeted special waste types from landfilling (as well as alternatives for managing by collecting, treating, and disposing of the targeted special waste types listed) are evaluated below.

Existing Conditions

Program Description and Wastes Diverted– Los Altos has carefully reviewed and documented all potential and ongoing special waste efforts, including all of its programs. Los Altos has two programs for managing special waste – sewage sludge and white goods.

Sewage sludge from Los Altos is treated at the Palo Alto Regional Water Pollution Control Plant (PARWPCP) in Palo Alto. The sewage from Palo Alto and Mountain View is also treated at the plant. Los Altos is a co-owner of the plant but does not operate it.

The PARWPCP operates under permits from the Bay Area Air Quality Management District, and the Regional Water Quality Control Board. There is no permit, and none is required, from the California Integrated Waste Management Board (CIWMB).

Since the plant is not permitted by the CIWMB, sewage sludge is not included in the determination of total disposed waste or total diverted waste in this report. According to CIWMB regulations, only wastes disposed in CIWMB-permitted facilities are to be included in the determination of the quantity of disposed waste; and only wastes normally disposed of as of 1990 are to be included in the calculation of diverted waste.

The sludge generated at the PARWPCP is incinerated at an on-site incinerator. Approximately 1100 tons of ash per year are produced and sent to a copper smelter in Arizona. The ash is used as flux at the smelter.

Most white goods in Los Altos are collected at curbside during the cleanup program twice a year. They are taken to the Zanker Road MRF for reclamation of freon and recycling of metal.

Dead animals are disposed in landfills when appropriate, and recycled at a Sacramento-based rendering plant in many instances. Tonnages disposed are not available from landfill records. Tonnages diverted are not available at present, either. In addition, the production of dead animals is source reduced in Los Altos through neutering and spaying of pets.

Future Status of Programs– Of the special waste activities and programs identified above, the City of Los Altos anticipates that none of the following will be phased out or discontinued in the future.

Evaluation of Alternatives

Management practices should take advantage of all viable markets and end uses for recyclable special wastes. In the City of Los Altos, the recyclable special wastes are white goods. With the exception of the first alternative, the waste management methods evaluated in this section address the objective of increasing the recovery of recyclable special waste from the waste stream.

Alternative 1 - Disposal of Special Wastes.

Special waste generated by the City of Los Altos can be disposed of at the Newby Island landfill in accordance with the facility's Waste Discharge Requirements (WDR), issued by the Regional Water Quality Control Board. The alternative of disposing of special waste in an environmentally safe manner in accordance with pertinent regulations is evaluated below to determine whether this alternative is appropriate for the City of Los Altos, as well as to compare it to other alternatives.

Effectiveness– This alternative does not reduce quantities of special wastes currently disposed of.

Hazard– Workers responsible for the disposal of special waste are subjected to both health and safety risks from the handling of potentially hazardous materials and bulky items. To reduce the hazard potential, workers should be properly equipped and trained in handling hazardous wastes. In addition, workers should receive basic safety training.

Flexibility– With relatively minor changes in the management of special wastes (excepting sewage sludge), disposal of special wastes can be adjusted to conform with changing conditions.

Consequences to the Waste Stream– This alternative would not affect the waste stream.

Implementation Period– No "start-up" period would be required.

Facility Requirements– This alternative would not require any new or expanded facilities.

Consistency with Local Conditions– Disposal of special waste is consistent with local plans and policies.

Institutional Barriers– There are no significant institutional barriers to this alternative.

Estimated Cost– No significant costs are associated with this alternative.

End Uses– Not applicable.

Alternative 2 - Sewage Sludge Composting

Composting is the controlled biological decomposition of solid organic materials. The end product of composting is a stable humus or soil-like material that can be used as a soil conditioner, mulch, or fertilizer, depending on its physical properties. There is no sewage sludge generated in Los Altos.

Effectiveness– This alternative would be effective in diverting sewage sludge from disposal.

Hazard– Assuming that the composted sludge is not applied to land used for agricultural crops, this alternative does not have any known hazards.

Ability to Accommodate Change– The ability of this alternative to accommodate change is limited to the amount of composted sludge that can be stockpiled during unfavorable market conditions.

Consequences to the Waste Stream– This alternative will not shift the waste stream toward non-recyclable or unmarketable materials.

Implementation Period– Implementation of this alternative can be accomplished in the short-term.

Facility Requirements– No additional facilities are needed.

Consistency with Local Plans and Policies– This alternative is not consistent with local plans and policies.

Institutional Barriers– There are institutional barriers to this alternative. Los Altos does not and will not have a sewage treatment facility.

Estimated Cost– Since Los Altos does not have a sewage treatment plant, there is no cost to implement.

End Uses– Composted sewage sludge can be sold to the general public as a soil condition, mulch, or fertilizer. A relatively stable market is anticipated to be available for this product.

Alternative 3 - Land Application of Sewage Sludge

Sewage sludge can be used beneficially as soil amendment or fertilizer for agricultural purposes. Benefits accruing from the use of sludge for these purposes include reduced need for inorganic fertilizers, improved soil fertility and tilth, decreased consumption of energy, and reduced hazardous air emissions.

Effectiveness– This alternative would be effective in diverting sewage sludge from the waste stream.

Hazard– Uptake of heavy metals (Cd, Pb, etc.) in food crops could pose a potential health hazard. The characteristics of the sludge will determine its suitability for application at a particular site.

Ability to Accommodate Change– This alternative can be limited by changing conditions, particularly social acceptance of the use of sewage sludge for application to land.

Consequences to the Waste Stream. This alternative would not affect the waste stream since sludge is not currently generated in Los Altos.

Implementation Period– This alternative can be implemented during the short-term planning period.

Facility Requirements– A facility would be required where the sludge could be stabilized in order to be transported.

Consistency with Local Plans and Policies– This alternative is not consistent with local plans and policies since Los Altos does not have a sewage treatment plant.

Institutional Barriers– This alternative would require the acceptance of local farmers.

Estimated Cost– Costs are anticipated to be minimal, with the cost of transporting the sewage sludge to the site of application being the most significant.

End Uses– When applied to land, sewage sludge functions as soil amendment or fertilizer. The southern portion of Santa Clara County is a potentially significant market due to the extensive agriculture in the area.

Alternative 4 - Divert Tires from Landfilling for Ultimate End Use

Used tires generated in the City of Los Altos can be reused or recycled as a variety of end products including floor tiles, dock bumpers, and playground covering. An important component of this alternative is the availability of a facility to stockpile used tires. The City of Los Altos could develop a contractual arrangement with a firm such as Oxford Tire Recycling of Northern California to collect used tires generated by the city. The collected tires would ultimately be recycled as specific end products or would be used as tire-derived fuel for the generation of electricity. Tires and rubber account for 1.6 percent of the disposed waste in Los Altos.

Effectiveness– This alternative could be effective in reducing the quantity of used tires in the waste stream.

Hazard– Prior to being processed, waste tires are stockpiled. When exposed to the elements, stored tires collect rainwater and serve as breeding grounds for disease vectors; they can also be a fire hazard. To minimize the hazard potential, the storage times should be limited. Additionally, the stockpiled tires can be protected from the elements by a tarp.

Ability to Accommodate Change– Provided that waste tires can be sent to a regional facility for storage during unfavorable market conditions, this alternative can accommodate changing conditions. However if a regional waste tire facility (such as that operated by Oxford Tire Recycling) were not available, this alternative would be limited in its flexibility.

Consequences to the Waste Stream– This alternative would have a positive effect on the waste stream by diverting a problem waste from landfilling.

Implementation Period– Implementation would be dependent on the establishment of a regional facility permitted to accept only shredded tires. It is anticipated that this could occur within the short-term planning period provided that there is strong support on the regional level.

Facility Requirements– A facility for the stockpiling of tires would need to be established. The waste tire facility would be developed and permitted in accordance with the requirements of Assembly Bill 1843, codified in Public Resources Code Section 42800, et seq. This facility would stockpile used tires for future processing, including shredding and transport to a regional facility permitted to accept shredded tires. The purpose of the proposed waste tire facility would be to receive the tires that are currently being disposed of by the jurisdiction.

Consistency with Local Plans and Policies– Diversion of tires for ultimate end use is consistent with plans and policies and ordinances of the City of Los Altos.

Institutional Barriers– Existing waste hauling and disposal contracts may be affected if used tires are diverted to a waste tire facility for ultimate recycling. There could be resistance from these companies in diverting this waste from the universe of disposed wastes because of the potential for reduced revenues.

Estimated Cost– Not available at this time.

End Uses– Used tires in good condition can be resold, and casings usable for retreaded tires can be marketed to tire distributors. Used tires can also provide the raw material for tire-derived products such as playground covering, floor mats, dock bumpers, floor tiles, asphalt rubber and rubber-modified asphalt. Additionally, tires can be shredded at a shredding facility and ultimately used as playground cover material, or as tire-derived fuel.

Tires that are not reused or are used for tire-derived products or fuel can be taken to a Tire-to-Energy Plant. Here whole tires are incinerated to produce steam to generate electricity. Tire-to Energy Plants can recover incineration by-products that include fly ash and gypsum. The fly ash (which contains zinc) can be shipped to a smelting facility; gypsum can be used for nonagricultural land applications. Slag from the steel and fiberglass belts in the tires can be recovered and used for road base (i.e., under asphalt). There is currently a fairly stable market for used tires in northern California.

Alternative 5 - Prohibit Disposal of Used Tires at Landfills

Used tires could continue to be accepted at the Newby Island landfill, but would be banned from disposal. The landfill would require waste haulers to identify used tires in the incoming loads and to deposit them at a specified stockpile location at the landfill site. Stockpiled tires could then be recovered by a tire recycler, such as Oxford Tire Recycling of Northern California.

Effectiveness– This alternative would be effective in diverting tires from disposal, provided that transport, processing, and ultimate recycling can be arranged.

Hazard– Stockpiled used tires can collect rainwater and serve as breeding grounds for disease vectors, and can also be a fire hazard. These hazards are difficult to control; limiting the storage time and protecting the tires from exposure to the elements by covering with a tarp are recommended control mechanisms.

Ability to Accommodate Change– This alternative is limited to the quantity of tires that can be stockpiled on site during unfavorable market conditions.

Consequences to the Waste Stream– This alternative would divert tires from the waste stream; tires represent approximately one percent of the waste in the City of Los Altos.

Implementation Period– A landfill ban on tires could be implemented in the short-term planning period.

Facility Requirements– No facilities are necessary for this alternative. However, space would need to be made available at the Newby Island landfill.

Consistency with Local Plans and Policies– This alternative is consistent with local conditions for stockpiling of tires.

Institutional Barriers– Waste hauling and landfill operating contracts may provide a barrier to this alternative because of the potential for reduced disposal revenues.

Estimated Cost– There are no significant costs associated with this alternative.

End Uses– See the discussion of end uses for used tires provided with Alternative 4. There is currently a fairly stable market for used tires in northern California.

Alternative 6 - Prohibit Disposal of White Goods at Landfills

White goods could continue to be accepted at the Newby Island landfill, but would be banned from disposal. The landfill would require waste haulers to identify white goods in the incoming loads and to deposit them at a specified stockpile location at the landfill site.

Effectiveness– This alternative would be effective in diverting white goods from disposal.

Hazard– Stockpiled white goods may pose health risks to workers as a result of exposure to PCBs. To reduce the potential for hazard, workers should be properly trained in handling PCBs and provided with appropriate safety gear and equipment.

Ability to Accommodate Change– The ability of this alternative to accommodate change is limited to the quantity of white goods that can be stockpiled on site during unfavorable market conditions.

Consequences to the Waste Stream– This alternative would divert white goods from the characterized waste stream. In 1990, white goods represented approximately less than one percent of the waste generated in the City of Los Altos.

Implementation Period– A landfill ban on white goods could be implemented in the short-term planning period.

Facility Requirements– This alternative requires an area at the landfill for stockpiling white goods, but does not require any new facilities. Existing landfill staffing is considered sufficient to implement this alternative.

Consistency with Local Plans and Policies– This alternative is consistent with local plans and policies.

Institutional Barriers– Existing waste hauling and landfill operating contracts may provide a barrier to this alternative unless modifications can be readily implemented. The 1990 Clean Air Act bans units with CFCs.

Estimated Cost– There are no significant costs associated with this alternative. White goods can be stockpiled by existing landfill personnel.

End Uses– White goods can be repaired and reused; they can also be used for scrap metal following the removal of electrical capacitors and cooling units. The metal components of the white goods are processed for reuse in mills and foundries to produce new steel.

Alternative 7 - White Goods Processing Operation

White goods can be diverted from the waste stream at the Newby Island landfill by facility personnel. As incoming loads are discharged, the spotter and the equipment operator will separate identified white goods from the discharged load. The white goods will then be moved to an area clear of operations in the transfer station or to an area removed from the active face at the landfill. At the end of each day, the collected white goods will be moved to a designated white goods stockpile area. At the stockpiled area, electrical capacitors, cooling units, insulation, and wiring will be removed. The electrical capacitors and cooling units will be recycled and the insulation and wiring landfilled. The scrap metal will be sold to a scrap metal dealer.

Effectiveness– This alternative would be effective in diverting white goods from disposal.

Hazard– Potential hazards include risk of injury to landfill personnel from removing the white goods or from working around heavy equipment, and exposure to PCBs. To reduce the potential for hazard, workers should be properly equipped and trained in handling PCBs.

Ability to Accommodate Change– This alternative is limited by the quantity of white goods that can be stockpiled on site during unfavorable market conditions.

Consequences to the Waste Stream– This alternative would divert white goods from the waste stream; white goods account for less than one percent of the City's waste stream.

Implementation Period– Immediate implementation appears feasible using equipment and personnel that are currently available at the Newby Island landfill.

Facility Requirements– This alternative requires an area at the landfill for stockpiling white goods, but does not require any new facilities.

Consistency with Local Plans and Policies– This alternative is consistent with local plans and policies.

Institutional Barriers– Changes to the union contract and landfill personnel job descriptions may be necessary. Some unions (and personnel) may be reluctant to handle the hazardous components of white goods (capacitors and cooling units).

Estimated Cost– There are no significant costs associated with this alternative; however, additional labor would be required to dismantle the white goods. An additional staff person on a part-time basis is expected to be sufficient. Costs are not expected to exceed $15,000 per year.

End Uses– The electrical capacitors and cooling units that have been removed from the white goods can be recycled. The remaining scrap metal can be processed for reuse in mills and foundries to produce new steel. The market for scrap metal is relatively stable.

Selection of Program

In the previous section, seven alternatives were presented for consideration; each was evaluated according to a range of criteria mandated by the regulations governing AB 939. Each alternative has inherent qualities that makes it either more or less attractive to the City of Los Altos. In addition, each alternative has aspects that may be more or less appropriate to the City's goals, objectives, policy environment, waste stream, and solid waste management system.

Each alternative has been assessed to determine if it is appropriate to the City's needs and assigned each alternative a ranking in order to select various alternatives. In selecting among alternatives and programs, the city considered the following critical factors: (1) the degree to which each alternative and program is appropriate to the conditions of the jurisdiction (i.e., goals, objectives, policy environment, waste stream, and solid waste management system), and (2) the degree to which the alternatives and programs complement each other and form a coherent, comprehensive, and cost-effective package.

Based on the results of this evaluation and assessment, the alternatives selected to meet the goals and objectives of this component in the short-term and medium-term planning periods are:

Short-Term Planning Period

In order to meet the goals and objectives outlined in this component, the City of Los Altos will divert approximately two percent of the total waste stream in the short-term planning period. This selection is based on impact, effectiveness and ease of implementation in the short-term.

- Continue disposal of special waste. This program will not result in any diversion of the total generated waste stream. However, the current quantities generated are very low.

- Review a program to divert tires from landfilling for ultimate end use. This selection is based on impact, effectiveness and ease of implementation in the short-term.

- Review a program to prohibit disposal of used tires at landfills.

- Review a program to prohibit disposal of white goods at landfills.

- Continue a white goods processing operation via the spring and fall cleanups. This selection is based on impact, effectiveness, and ease of implementation in the short-term. Diversion of white goods is not included in any city solid waste diversion totals.

Medium-Term Planning Period

In order to meet the goals and objectives outlined in this component, the City of Los Altos will divert approximately one percent 250 tons of the total waste stream in the short-term planning period. All programs and alternatives selected in the short-term planning period will be continued in the medium-term.

Program Implementation

This section identifies and describes the specific government agencies responsible for implementing the selected alternatives and programs; the specific tasks necessary to achieve full implementation of the selected alternatives and programs; and an implementation schedule shown in Table 5.1.

Multi-Jurisdictional Special Waste Efforts

Multi-jurisdictional special waste efforts may be needed to implement some of the programs. For example, dead animals are currently handled at the county level. Other potential multi-jurisdictional efforts include (1) multi-jurisdictional waste tire facilities, (2) establishment of a county landfill permitted to accept only shredded tires, and (3) coordination of marketing of composted sludge.

Monitoring and Evaluation

To ensure that the selected special waste alternatives and programs are meeting the goals and objectives of this component, the city will implement a monitoring and evaluation program. Because the objectives of this component extend throughout both the short-term and medium-term planning periods, the city's monitoring and evaluation program will continue, as needed, during both planning periods.

Monitoring Methods– This section presents the methods for quantifying and monitoring the achievement of the following objectives for the special waste component.

Objective 1:
Reduce the hazard potential of white goods.

Objective 2:
Continue existing programs that divert recyclable special waste.

Objective 3:
Continue to provide for environmentally safe management or disposal of special waste that cannot be recycled.

Objective 4:
Increase the recovery of recyclable special waste from the solid waste stream.

Monitoring Method: Periodic inspections of handling methods for special waste will be conducted at the Newby Island landfill. These will focus on (1) determining whether waste handling methods required by the regulatory agencies are being implemented, (2) checking to ensure that facility staff is properly outfitted and equipped to handle specific "problem" wastes, and (3) verifying that staff is properly trained in safety and hazardous waste handling methods. In addition, further waste characterization studies will be conducted at the end of the short-term planning period to measure changes in both waste types and waste quantities. These studies will be combined with more informal "spot check" assessments of waste composition to monitor the increased diversion of special waste from landfilling. Specific emphasis will be given to quantifying the reduction in landfilling of special waste that poses health and safety hazards.

Written Criteria– The city will prepare annual reports summarizing the findings of the monitoring activities described above. The report will provide written criteria evaluating the effectiveness of the special waste alternatives by reporting on whether (1) the special waste objectives are being achieved; (2) the selected programs and activities were implemented on schedule; (3) waste handling practices have changed.

Responsibility For Monitoring– The monitoring and evaluation activities described in this section will be implemented by the department of public works.

Funding Requirements– Funding for the monitoring and evaluation program described in this section will be provided by the city through user fees. Funding for this program includes the costs of (1) administrative activities, (2) recordkeeping, (3) program monitoring and surveying, (4) tracking of survey results, and (5) annual reports.

Contingency Measures– If the programs described above fail to meet the goals and objectives of this component, the following tasks can be implemented:

- Introduce additional waste acceptance procedures at the landfill in order to divert special wastes from disposal
- Locate new/additional markets for recovered recyclable special wastes
- Amend special waste disposal practices
- Analyze existing programs and alternatives for obstacles to successful implementation.
- Modify selected alternatives, including degree, scope, or extent of special waste activity and implementation schedule
- Seek additional funding
- Select additional alternatives
- Consider regulatory programs or mandatory programs

FOOTNOTES **********

1 A Class III landfill accepts only nonhazardous solid waste.

Table 5.1

Special Wastes Implementation

City=Los Altos Public Works Department LAGCo=Los Altos Garbage Company County=Santa Clara County

Task	Responsible Agency	Implementation Date	Yearly Cost
Short Term			
Continue diversion of special waste	LAGCo	ongoing	included in other
Review program to divert tires from landfill	LAGCo/City	October 1994	none
Review program to prohibit tires at landfill	City/County	October 1994	none
Review program to prohibit disposal of white goods	City/County	October 1994	none
Continue white goods processing from cleanups	LAGCo	ongoing	$8,000
Medium Term			
Continue short term programs			

Education
and
Public Information Component

Introduction

Education and public information is one of the most important components of AB 939. The public needs to be made aware of the importance of managing solid waste. An education and information program must be based on the requirements of the other components. Integrating the components is critical because the overall approach to solid waste management must be balanced in order to meet the needs of the city and the requirements of the state. Los Altos has always supported its waste reduction activities with extensive public education.

Goals and Objectives

This component documents current education and public information activities for the City of Los Altos and describes how participation in reduction, recycling, and composting activities will be stimulated through implementing new education and public information programs and expanding existing ones.

Establishing clear goals and objectives for educational efforts provides an understanding of the program to governmental agencies, residents, and the business community. In addition, monitoring, evaluation, and improvement of public education becomes easier when the goals and objectives are clearly identified.

Goals identified by the City of Los Altos include:

- support existing and planned source reduction, recycling, and composting programs and services through education and public information activities;
- increase participation in existing and planned source reduction, recycling, and composting with education and public information efforts;
- maximize public awareness of environmental and solid waste issues;
- create broad visibility for recycling;
- familiarize consumers with importance and ease of recycling;
- motivate increased participation in available source reduction and recycling programs by all sectors;
- stress the importance to all sectors of buying recycled and composted material.

Short-Term Objectives

- Expand existing public education and information programs to address source reduction, composting, recycling, and household hazardous waste, tailored to the residential, and commercial sectors
- provide information to at least 90 percent of the residents regarding the City of Los Altos waste reduction and recycling programs by 1995
- create public involvement opportunities through recycling promotions and events
- provide all residents with detailed information for participation in local collection programs
- educate the public about the uses of recycled and composted materials, emphasize "closing the loop" through a "buy recycled" campaign
- gain support by publicizing and encouraging involvement of the business community
- participate in countywide public education efforts
- promote benefits of in-house source reduction and recycling activities by city employees and through city-wide procurement policies

Medium-Term Objectives

Medium-term objectives build upon short-term objectives and will focus upon the following:

- expand existing programs
- revise and improve current efforts based on feedback obtained from evaluation

Existing Conditions

Los Altos has utilized educational and public information tools to publicize its waste management programs since it began the curbside recycling collection in 1982. Public awareness activities are multifaceted and use a variety of media.

Recent surveys indicate that the city's newsletter and garbage bill inserts are well read and considered important to residents. Examples of some of the materials that have been developed are shown in Appendix C.

Residential (includes multi-family dwellings)

Curbside Recycling — A citizen's advisory committee was instrumental in developing the city's initial curbside recycling program. When the program began in 1982, a logo and theme of "Sort it Out — Set it Out!" was created. Posters, flyers and instructional brochures were developed for distribution throughout the community. A collection schedule and instructions were delivered door-to-door with collection containers. Extensive media coverage heralded the program startup. A recycling "hotline" was available to residents. In the first two years, regular phone surveys were made to establish participation rates and talk with the homeowners. Neighborhoods with high participation rates were sent congratulatory letters from the City Council and

were announced in the local newspaper. Educational materials and curricula were provided to elementary schools in addition to a city sponsored poster contest for school age children. Development of curbside recycling for apartments and condominiums was done via direct mail and personal contact.

Every year a collection schedule is mailed to all residents. It includes instructions on how to use the program and information on it's status, as well as general recycling information.

In 1991 the type of recycling collection container was changed and this additional opportunity was used to reach all homes with informative materials door-to-door and through the local newspaper.

Through the city's other regular publications to residents, curbside recycling information is disseminated.

Garbage Bill Inserts — Los Altos Garbage Company (LAGCo) allows the city to enclose solid waste program information in its quarterly billings. In recent years, the 3x6 inch card frequently has doubled becoming a 3x6 inch four page brochure.

Communique' — The quarterly newsletter mailed to all residences and businesses regularly has information about the city's solid waste programs. Special inserts have also been enclosed in the newsletter.

Advisory Committees — Over the years, Los Altos has had very active advisory committees reporting to the Council on solid waste issues. There has been a solid waste committee, the recycling committee that was instrumental is developing the curbside program and a plastics in the environment committee that changed course and helped begin the commercial cardboard recycling program in 1990. Currently LAGCo is sponsoring a citizens recycling awareness taskforce whose to promote public aareness of solid waste issues through educational materials and activities that encourage the community to reduce, reuse and recycle. Also the City Council has appointed an environmental taskforce that ocassionallly includes solid waste issues in its agenda.

Newspapers — Los Altos is served by two regional daily newspapers and a weekly local. Press releases are regularly sent and frequently used by the larger papers. The local newspaper, The Town Crier, publishes most releases and frequently develops features. Display ads are also purchased in the Crier for special program announcements.

Cable TV — Los Altos has a government access channel on the local cable television system which displays video text city sponsored announcements, including solid waste programs, 24 hours a day. The public access channel tapes and plays public service announcements.

Telephone — City staff is always available to answer inquiries regarding solid waste programs and takes every opportunity with callers to encourage source reduction, recycling and safe

disposal. In addition, a recorded message for the public on a dedicated "solid waste information line" is regularly updated to provide current program information.

LAGCo — The Los Altos Garbage Company supplies all information regarding the program services it provides. Their staff remains current on the city's other programs in an attempt to not send a caller searching for answers. The city has conducted in-house training with LAGCo customer service representatives.

Special Events — When the opportunity arises, the city includes solid waste program information displays for community events. The city has provided materials for organizers of Earth Day type programs. Specialty promotional items have been obtained from the California Division of Recycling to be given to participants attending special events. Each year Los Altos provides handout information and staffing for a recycling booth at the county fair.

Other Organizations — The Loma Prieta Chapter of the Sierra Club publishes information on where to find recycled paper products and where to recycle in Santa Clara County. The Center for Development of Recycling is a non-profit organization available to the Los Altos that produces and disseminates information on recycling and waste reduction. Some community groups and churches sponsor workshops and educational opportunities to encourage their members to be more environmentally aware.

Commercial (no industrial)

Many of the previously mentioned public awareness activities are used to reach local businesses. For information about commercial reduction and recycling activities, LAGCo plays a greater role.

Business Associations — Information especially for the commercial sectors' local associations such as the Chamber of Commerce, Downtown Village Association and the Loyola Merchants Association are contacted. The city has developed programs using their advice as well as disseminated information via their publications and member meetings.

Direct Mail/Door-to-Door — Letters and other informational materials are mailed directly or delivered door-to-door to commercial garbage customers regarding solid waste programs.

Cardboard Recycling — A full-fledged kick-off and promotional campaign was developed for the startup of the commercial corrugated cardboard recycling program in 1990. This public awareness campaign received an award for "excellence in communications" from the California Association of Public Information Officials. Members of an advisory committee surveyed merchants about recycling and particularly for cardboard. Once the program was approved, a letter was mailed to all commercial garbage customers. A fun and educational kick-off event, *The Green Earth Games*, was planned. All materials were developed around the theme of the kick-off and using materials that could be recycled, were from recycled products, or helped to recycle. An invitation to the "Games" was mailed to all businesses. A how-to-kit (in a corrugated box) included a letter from the City Council, a brochure about the program and recycling, a "score-

card" that gave specific instructions, a carton cutter and other specialty items promoting recycling. The kit was hand delivered to all businesses and made available to the garbage company for future inquiries. There was excellent newspaper coverage of the kick-off event.

Institutional and Municipal

The City of Los Altos — The city is currently developing a written policy regarding the purchase and use of recycled materials. In the meantime, purchases are made toward acquiring recycled products and paper whenever the cost difference is not significant. Containers for recycling of white paper, newspapers, cans and glass, are clearly marked with recycling information and symbols. The quarterly all employee newsletter is used to encourage recycling on the job and at home. Recycling in general and for the city is a frequent topic at formal and informal staff discussions.

Schools — The recycling taskforce sponsored by the garbage company has been working with the local PTA organizations to develop in-school recycling and education programs. In May 1991 a recycling poster contest was conducted for elementary age children.

Program Alternatives

To heighten the effectiveness of the various programs, and ensure an efficient use of resources whenever possible, public education and information resources should be targeted to specific audiences. Segmenting the community into various categories of waste generators provides a simple and useful means of directing specific messages.

The solid waste generation study for Los Altos indicates that in the residential and commercial sectors there could be 1) increased participation in the existing recycling program for cans, glass, and PET, 2) yard waste composting, 3) source reduction of other papers and plastics and 4) participation in new waste reduction activities promoted by the city; municipal and institutional sectors. There could be increased participation and additional materials included in existing recycling activities — debris box (which is the only industrial waste in the city) customers can be educated to encourage recycling efforts.

General Approaches to Education and Public Information

- Continue community advisory committees to assist in developing and implementing educational programs.
- Develop a comprehensive program that addresses solid waste management in general and AB 939 specifically. The program would be geared to all waste generators.
- Assess the size of the community's non-English speaking or reading populations in order to tailor education and publicity materials accordingly.

Numerous avenues of communication are available that would allow the transmission of education and public information to the targeted waste generators. Examples are:

- mass mailings (community newsletter and garbage bills
- recognizable theme, logo, and message. The logo should be printed on outdoor advertisements, as well as waste collection vehicles and equipment. Outdoor advertising can be placed on billboards, buses, bus shelters, benches, banners, posters, and litter receptacles
- press coverage of as many promotions, program introductions and effectiveness updates, and other notable events as possible
- press coverage through news conferences, feature stories, press kits and press releases
- newspaper articles and inserts in the Los Altos Town Crier, Peninsula Times Tribune, and San Jose Mercury News.
- local radio and TV including cable access channels to produce awareness shows or public service messages
- seminars, workshops, and related programs
- participation in special events such as Earth Day (especially if follow-up activities are planned), Recycling Week, County Fair, art and wine festivals, and local events such as employee picnics, holiday parades and celebrations
- slide shows, videos, and speakers' bureaus available to community groups
- recycling curriculum and other information distributed to public and private schools
- exhibit source reduction, recycling, and composting programs at county fairs, shopping centers, parks, community gardens, and other public sites
- create comprehensive public awareness campaigns for the start-up of any news programs

Commercial Sector

The tactics available for reaching the commercial are generally simpler and more direct. There is no industry in Los Altos except for debris box customers. The city can develop materials specific to individual businesses, and disseminate these via a number of approaches, which may include:

- conduct mailings to businesses
- work with the Chamber of Commerce and other business and professional associations
- develop a speakers bureau of educators, industry and technical representatives, and governmental officials to talk to professional organizations, the Chamber of Commerce, major employers, conservation groups, social clubs, and other groups
- develop a commercial waste audit kit. Once the audit has been conducted, the city can work with businesses to improve their disposal activities and in doing so will provide direct education and information to these waste generators
- develop specific programs tailored for the need of individual businesses (i.e. bakeries, dry cleaners)
- establish programs for specific business parks and centers
- prepare employee kits that explain the various programs for distribution by employers

- request that the garbage company do waste audits and contact customers periodically to offer recycling services
- create comprehensive public awareness materials for any new programs

Institutional Sector

Los Altos will need to work in cooperation with its local school districts to develop innovative approaches to educating the youth of the community.

- recycling curriculum and other information distributed to public and private schools
- cooperation with community service organizations (e.g. Rotary, Elks, Lions, Boys Scouts)

Education and Public Information Approaches Based on Waste Sector

Residential Sector

Approaches to develop public education programs for the residential sector might include:

Meetings and Forums

- sponsor city meetings, community forums, and public hearings to present and discuss reduction, reuse, recycling, and composting ideas
- appoint citizen advisory boards or task forces to monitor events and report to the public

Volunteer Networks

- develop a network of motivated and committed volunteers to help "spread the word." This method has been proven particularly successful in disseminating composting information through gardening clubs and community gardens in what are often called "Master Composter" programs

Publications

- regular feature articles in city newsletter focusing on solid waste reduction, reuse and recycling
- printed material for targeted waste categories should be developed

Commercial Sector

The tactics available for reaching the commercial sector are generally simpler and more direct. The city can develop materials specific to types of businesses and disseminate them via a number of approaches, which may include:

- direct mailings to businesses
- work with the Chamber of Commerce and other business and professional associations
- develop a speaker's bureau of educators, industry and technical representatives, and governmental officials to talk to professional organizations, the Chamber of Commerce, major employers, conservation groups, social clubs, and other groups
- develop a commercial waste audit kit. Once the audit has been conducted, the city can work with businesses to improve their disposal activities and in doing so will provide direct education and information to these waste generators

- prepare employee kits that explain the various programs that can be disseminated by employers
- request the garbage company do waste audits and contact customers periodically to offer recycling services

Institutional Sector

The City of Los Altos will need to work in cooperation with its school districts and private schools to develop innovative approaches to educating the youth of the community.

The following approaches could be utilized specifically for schools:

- sponsor special events in schools
- encourage student-run recycling programs at each school
- where feasible, establish student-run pilot composting program
- expand environmental and waste management awareness in schools by integrating relevant topic into school curricula
- target non-English speaking youth through bilingual education programs.

Specific Approaches Based on Programs

A well-integrated education and public information program is necessary. The initial educational campaign must be followed up by additional information about specific components. The following areas have been identified as needing specific information and educational programs: recycling, composting, household hazardous waste, special waste, and source reduction.

Source Reduction

The emphasis will be to inform the public that alternatives to many products and uses are available and that these alternatives will reduce the amount of material requiring disposal at the landfill.

To a great extent, source reduction can be accomplished only through legislative means. Requiring manufacturers to reduce the amount of packaging or change the type of packaging must be left up to state and federal governments. One problem that will be difficult to overcome is concern about product safety and integrity. Over the years, there has been product tampering (most noteworthy in the pharmaceutical industry). This has caused manufacturers to adopt tamper-proof packaging which, in most cases, has actually increased the amount of packaging.

A number of educational alternatives are available that will address residential and commercial source reduction. The use of brochures, the media, and public meetings are several avenues that can be used to inform the public. Program possibilities are:

Residential

- educate residents about the benefits of buying and using cloth shopping bags instead of plastic or paper
- explain to residents how they can launch a letter-writing campaign requesting manufacturers and businesses to reduce the amount of packaging materials and/or switch to materials that are more sensitive to the environment
- distribute to residents the necessary information so they can write to their elected representatives at both the state and federal levels, requesting that action be taken to reduce the amount and type of packaging materials being used
- encourage the use of onsite composting and grass clipping programs through demonstration programs at neighborhood parks, use of Master Gardeners, and/or initiating a Master Composter program, and develop accompanying information to explain the benefits of programs
- encourage the use of cloth diapers, in cooperation with a local medical association and diaper services
- provide a directory of reuse and repair businesses
- provide information on how to remove names from junk mail lists

Commercial, Institutional, and Debris Boxes

- promote source reduction, for example, through business associations, PTA meetings, and onsite presentations
- encourage supermarkets and other large retailers to reduce the use of plastic shopping bags (and other plastic bags) by switching to paper bags and encouraging the use of cloth bags
- publicize businesses that reuse and repair materials (e.g., repair stores and thrift stores)
- develop materials and provide technical assistance to allow "do-it-yourself" waste audits
- develop materials and provide technical assistance to encourage the use of onsite composting programs

Recycling

The emphasis will be to enhance the current recycling education and information programs. The following are recommended approaches:

Residential

- enhance the residential curbside education program (part of this approach would include a study to determine whether bilingual materials will be needed)
- expand information that explains the various enforcement procedures that the City of Los Altos has initiated. Examples include ordinances that prohibit the remova of recyclable materials from curbside by other than a licensed hauler, or destruction of recycling equipment
- work with recycling service providers and community groups to publicize the locations and promote the use of buy-back/drop-off collection centers

- provide feedback to the public on the success of the recycling programs (i.e., amount of materials recycled/resources saved, and the economics of the programs) and obtain feed back through ads in local newspapers and publishing of annual reports

Commercial, Institutional, and Debris Boxes

- in cooperation with the public and private elementary and high school districts, develop educational programs for grades K-12 — specific programs for the different age groups and/or grade levels would be appropriate
- expand the commercial recycling education programs
- develop pre-planned educational programs for specific businesses (e.g., dry cleaners, bakeries, service stations, etc.)
- use mailings to businesses giving information about the commercial recycling program
- work with the Chamber of Commerce and other business groups to inform the business community

Composting

A limited portion of the population understands what compost is or the benefits of using it. The information and education program will consider these approaches:

Residential

- develop educational materials that address the residential yard waste collection program for leaves, grass clippings, and other vegetative material
- inform the public how they can obtain compost and mulch from the program
- work with local garden clubs and Master Gardeners to help promote and educate the public
- work with the University of California cooperative extension to develop educational materials
- provide feedback to the public on the amount of yard waste collected and composted and how this material is used
- educate the public on the benefits of using compost and mulch for home purposes

Commercial, Institutional, and Debris Boxes

- expand information and education materials to support commercial and institutional yard waste collection programs

Special Wastes

Some special wastes, like infectious wastes, sludge, and ash, are quite specific and would not necessarily require that an educational program be developed. Other special wastes will require that educational materials be developed. Examples of programs to consider are:

Residential

- develop materials that inform the public how to properly dispose of such things as tires, white goods, auto bodies, and certain wood wastes — one approach is to publish a brochure on special wastes and mail it to all residents
- expand information to explain special cleanup day events — information must be sent out prior to the actual day of pick-up (information will include what can be disposed of, the date, and time of day)
- expand information about the proper procedures to remove and dispose of asbestos — list local firms that are licensed to remove asbestos

Commercial, Institutional, and Debris Boxes

- develop materials that inform how to properly dispose of such things as tires, white goods, auto bodies, and certain wood wastes — one approach is to publish a brochure on special wastes and mail it all institutions, and businesses
- develop information for commercial and self-haul generators that will explain about disposing of construction and demolition debris

Household Hazardous Waste

The Household Hazardous Waste Element (a separate document) addresses education and information. Most of the same avenues available for dissemination of information in the other components can be utilized to educate the public about the handling and disposal of household hazardous waste. Refer to the HHW element for details on education and information.

Program Selection

Short-Term Planning Period

General Approaches

- expand the efforts of the public works department for education and public information
- expand program that addresses solid waste management in general — directed to residential and commercial generators
- provide feedback to the public on the success of all implemented programs — methods include publishing an annual report, cable television and newspaper articles
- in cooperation with local schools, assist with developing educational materials for school age children and make available to private schools as well — topics to be covered are recycling, composting, source reduction and household hazardous waste
- conduct special event ("Green Earth Games") in conjunction with Chamber of Commerce public "expo" to celebrate 10 years of curbside recycling and prom ote other solid waste reduction activities

- develop information for commercial and self-haul generators to explain various options for the disposal of construction and demolition debris
- expand information to accompany special residential cleanup day events

Source Reduction

- develop a backyard composting program — include establishment of demonstration plots, availability of composting kits, "how-to" literature, materials describing the uses for compost, and developing a Master Composter program
- develop materials that explain the grass clipping program
- publish a directory of all reuse and repair businesses

Recycling

- enhance education materials for residential curbside recycling program
- enhance educational materials for commercial and debris box recycling programs — include "Recycling Kit," cooperative efforts with Chamber of Commerce, and establishment of a committee made up of business leaders
- publish a directory that lists brokers and end users of recyclable materials — develop information that explains various enforcement measures that have been taken to protect recycling equipment and the illegal removal of recyclable materials from curbside collection programs
- develop education materials for residential curbside collection of yard waste. Include information about how residents can obtain compost from the program

Special Waste

- enhance education materials that describe how to properly dispose of special wastes

Household Hazardous Waste

- expand materials to support the Household Hazardous Waste program

Medium-Term Planing Period

To a great extent, the various programs outlined under short-term are ongoing in nature. Once developed and initiated, they will need to be updated on an annual basis. Specific programs for the medium-term are:

- obtain feedback and review success of previous education and public information activities
- develop materials to assist debris box customers with inerts recycling program

Cost

The cost to develop, implement, maintain, monitor and evaluate the various tasks outlined in this component are presented in Table VI-1. Costs (for staffing and program materials) are expected to be approximately $28,000 in fiscal year 1991-92 with five percent increments annually. A greater portion is allocated for residential programs. Approximately 500 to 600 hours per year of staff time is estimated to be needed to implement the education and public information program. Los Altos Garbage Company is also responsible for providing educational information to their customers for any solid waste programs they operate on behalf of the city. Costs for LAGCo public awareness activities are not known and are included in regular garbage rates.

Whenever possible, volunteers will be encouraged to assist in the education and public information outreach programs. Funding will be provided by the solid waste programs budget through user fees.

Program Implementation

Each component requires the implementation of certain education tasks to support the objectives of the component. While these stand-alone programs need to be developed, an integrated approach is also needed. It will be necessary to ensure that the public receives proper information in a phased approach. In some instances, the information and education provided will be appropriate for more than one issue. The way information is disseminated might be similar for several components (brochures, newspaper), but what is actually said, and how, is important. Due to the nature and flexibility of the selected education and information alternatives, it will be relatively easy to modify or refocus attention to any diversion short-fall.

Table 6.1 shows the selected tasks for public information and education, responsible agencies, costs associated with the tasks and implementation dates.

Monitoring of Programs

The public works department will be responsible for monitoring the success of the programs. Any monitoring to evaluate the various programs can be accomplished by means of one or more of the following approaches:

- number of schools and students exposed to various programs
- number of businesses taking part in programs
- number and size of community events and activities
- number and frequency of media advertising purchased
- surveys conducted to determine awareness and participation levels for the various components
- complaints and requests for information received by the office of education and information and/or the contractors providing the various services
- qualitative feedback from waste generators about the information program

- the quantity of waste diverted by programs publicized through education and public information activities
- costs per generator, per ton, or per "impression" for education and public information programs
- the progress of the overall program toward diversion goals

Evaluation of Program Effectiveness

The public works department will be responsible for evaluating the success of the programs. An annual report, outlining the success of individual tasks, comparisons with neighboring communities, and plans for next year, will be the responsibility of this department.

Evaluation can occur at various stages of the public education and public information process depending on the objective to be measured. The criteria used to evaluate the effectiveness of the education and public information efforts will be determined in advance and will be appropriate to the monitoring methods that have been chosen.

Formative evaluation attempts to identify the strengths and weaknesses of the messages, materials, and educational or informational strategies before one proceeds to full production, distribution or implementation. This is particularly important in the parts of a program that will require significant resources. Paid advertising, for example, can use up a great deal of a budget and will be evaluated carefully before funds are committed.

Process evaluation assesses the organizational and administrative aspects of a program. Outcome and impact evaluation identify the immediate and longer term effects of efforts on the intended audience.

Monitoring Shortfalls

If the evaluation shows that specific diversion rates are not being achieved for certain programs and/or components, then expanding the education and information programs might be necessary. Methods that will be used include:

- increase the frequency, type, or extent of program monitoring and review to discover the reasons why diversion rates are not achieved
- revise education and public information efforts to make them more effective based on results of evaluation
- expand the education and public information programs by adding new components or increasing frequency
- publicize new or additional incentives for participation in reduction, recycling, or composting programs

Table 6.1

Public Education and Information Implemenation Plan

City = Los Altos Public Works Department LAGCo = Los Altos Garbage Company
County = Santa Clara County #R=Citizens Taskforce

Task	Responsible Agency	Implementation Date	Yearly Cost
Short-Term			
Expand general information about solid waste issues	City/LAGCo	ongoing	included in other
Provide feedback on progress of waste reduction programs	City	ongoing	none
Assist with educational materials for schools	City/LAGCo	ongoing	$ 500
Develop campaign and startup mateials for residential curbside yard waste to composting program	City/LAGCo	April 1992	$2,000+ LAGCo($5,000)
conduct special event "Green Earth Games"	3R/LAGCo/City	October 1992	$2,000
Develop information explaing enforcement and protection	City/LAGCo	January 1993	includedin other
Develop materials for self-haulers and debris box customers, for yard waste and construction materials reduction	City/LAGCo	March 1993	$ 500
Expand information accompanying residential cleanups	City/LAGCo	ongoing	$1,000
Develop materials for backyard composting	3R/LAGCo/City	June 1993	$ 200
Develop public information on grass clippings program	City	June 1993	$ 300
Publish directory of a reuse and repair businesses	City	Marh 1994	$ 500
Enhance materials for curbside recycling program	LAGCo	ongoing	LAGCo($5,000)
Enhance promotions for commercial recycling programs	LAGCo/City	ongoing	$ 500+ LAGCo($1,000)
Develop materials supporting commercial yard waste collection	City/LAGCo	March 1994	$ 200
Publish directory of a brokers/end users of recycled materials	City	Sept 1994	$ 500
Enhance materials for proper disposal of special waste	City/LAGCo	ongoing	included in other
Expand HHW program information	City/County	ongoing	$2,000

Table 6.1 (continued)

Public Education and Information Implemenation Plan

City = Los Altos Public Works Department LAGCo = Los Altos Garbage Company
County = Santa Clara County #R=Citizens Taskforce

Task	Responsible Agency	Implementation Date	Yearly Cost
Medium-Term			
Continue appropriate short-term objectives		ongoing	
Develop materials for debris box diversion program	LAGCo/City	March 1996	$ 1,000
Review and update objectives annually	City/LAGco	January-yearly	none

Solid Waste Facility Capacity Component

Landfilling is the process of disposing of municipal solid waste onto land. Waste is compacted in layers and covered with soil or a suitable alternative. As the most common method of solid waste disposal today, landfilling will continue as the primary method of disposal of non-recyclable/non-reusable wastes in Santa Clara County.

Because the amount of landfill capacity is declining throughout California and the amount of municipal solid waste is increasing, many landfills in the State have reached or are approaching capacity. The Source Reduction and Recycling Element includes a solid waste facility capacity component to ensure that there is adequate landfill capacity for disposing of the solid waste that cannot be diverted by recycling or composting.

The specific purpose of the Solid Waste Facility Capacity Component is to calculate the amount of disposal capacity required to meet the needs of the City of Los Altos for the next 15 years (calculated from the date of adoption of the SRRE).The component contains a description of the permitted solid waste disposal facilities currently used by the City of Los Altos. It includes projections of the city's waste capacity needs for the next 15 years, and describes how the city will satisfy future capacity needs. The solid waste reduction goals and implementation schedules described in Source Reduction, Recycling, Composting, and Special Waste sections of the Source Reduction and Recycling Element were incorporated into the projections of the city's future disposal facility capacity needs.

Los Altos does not have any permitted landfills within its boundries, nor does it have any short or long term plans to develop a disposal facility.

Existing Disposal Facilities

There are nine permitted landfills in operation in the county: Guadalupe, Kirby Canyon, Mountain View, Newby Island, Pacheco Pass, Palo Alto, Santa Clara (All Purpose), Sunnyvale, and Zanker Road. All are classified as Class III facilities. Four sites (Mountain View, Palo Alto, Santa Clara, and Sunnyvale) are publicly owned. The remaining five are privately owned: Guadalupe by the Guadalupe Rubbish Disposal Company; Kirby Canyon by Waste Management, Incorporated; Newby Island by International Disposal Corporation, a wholly owned subsidiary of Browning Ferris Industries; Pacheco Pass by South Valley Refuse Disposal; and Zanker Road by Zanker Road Resource Recovery, Incorporated. Except for the Palo Alto site, all landfills are privately operated.

According to the Santa Clara County Solid Waste Management Plan (1989 Revision), the County had between 24 and 32 years of remaining refuse capacity.

Using the current rate of fill of approximately 1.8 million tons per year, and an annual growth rate of 1.1 percent, the Plan projected 24 years of remaining capacity. With a 25 percent reduction in wastes landfilled by 1995 (the Plan's goal), the County had projected 32 years of remaining capacity.

In May 1988, the City of Los Altos signed and agreement with Newby Island Landfill in San Jose which provides for 30 years of landfill capapcity for solid waste generated by the city. A copy of the agreement is included in Appendix D. This 30 year capacity is based on Los Altos disposing of 40,000 tons per year .

Newby Island Sanitary Landfill

The Newby Island Landfill is owned and operated by International Disposal Corporation, a wholly-owned subsidiary of Browning-Ferris Industries (BFI). The site was opened around 1930 as an open burning dump before being converted to a sanitary landfill in 1956. The facility presently accepts waste from the cities of San Jose, Milpitas, Cupertino, Los Altos, Mountain View, Santa Clara, the Town of Los Altos Hills, surrounding unincorporated areas, independent contractors, and the general public.

Located at the west end of Dixon Landing Road in north San Jose, the 342-acre site is bounded by Coyote Creek on the west, north, and east, and a slough tributary to Coyote Creek on the south. Surrounding land uses include salt evaporation ponds to the west, a wildlife refuge to the north, and sludge beds to the south. The property is zoned R3 - Residential. Access is provided via the Dixon Landing Road interchange off of Interstate 880.

The Class III landfill accepts garbage, rubbish, small dead animals, demolition, brush, stumps, large containers, and street refuse. No hazardous or designated wastes may be accepted.

According to the landfill operator, the facility landfilled 980,477 tons (approximately 4.7 million cubic yards) of waste in 1990. Input tonnage is converted to in-place cubic yards by using a compaction factor of 1,750 pounds per cubic yard and a refuse to cover ratio of 5 to 1. Public disposal fees (as of January 1991) range from $2.35 to $17.00 per cubic yard, with a minimum charge of $12.90 per load. Tipping fees are $15.05 per ton for franchised waste from the City of San Jose and $20.50 per ton for franchised waste from Cupertino, Los Altos, Los Altos Hills, Mountain View, and Santa Clara.

In August 1988, a proposed recycling facility, called The Recyclery, received final CoSWMP approval for construction adjacent to the Newby Island Landfill. In early 1991, The Recyclery received final permits and began operations. The Recyclery is capable of processing up to 800 tons of refuse daily, recovering more than half for recycling. The landfill site also has a methane recovery system in place with a design capacity of 2,000 KW.

BFI currently has contracts with the communities of Cupertino, Los Altos, Los Altos Hills, and Santa Clara, and adjacent unincorporated areas, to provide 30 years of disposal capacity. Los Altos began using the landfill in November 1988 which means the city has secured disposal capacity until at least 2018.The City of San Jose also has a 30-year contract for disposal capacity at Newby Island.

Newby Island has a permitted capacity of approximately 50.8 million cubic yards. With a remaining capacity of approximately 27.1 million cubic yards, and the opening of The Recyclery, the site is expected to remain in operation until at least 2020. Proposed use after closure is as an open space park.

A hydrogeologic report for the site was done by EMCON Associates in 1972 and by Purcell, Rhodes and Associates in 1979 and 1982. Current operating permits issued to the site include

- CWMB Solid Waste Facility Permit (#43-AN-003 - Feb. 7, 1989); and
- RWQCB Waste Discharge Permit (#75-22, as amended by #82-4, #82-63, #82-64, and #87-152 - November 30, 1987)

Disposal Capacity Needs Projection

The disposal facility capacity needs projection provides an estimate of the disposal capacity (in cubic yards/year) that is needed to accommodate projected solid waste for a 15-year period commencing in 1991 (or date of adoption of SRRE). Section I of this SRRE describes the projected solid waste generation for this 15 year period. The following formula was used, as required by the California Integrated Waste Management Board, to project the City of Los Altos' projected capacity needs (expressed in cubic yards) over the next 15 years.

Capacity Needs Projection Equation:

$$\text{Annual Capacity}_{\text{Year n}} = [(G + I) - (D + TC + LF + E)]_{\text{Year n}}$$

where:

G = the amount of solid waste projected to be generated in the City of Los Altos

I = the amount of solid waste which is expected to be imported to the jurisdiction for disposal in permitted solid waste disposal facilities through interjurisdictional agreements with other cities or counties, or through agreements with disposal site owners

D = the amount of solid waste diverted by implementation of proposed source reduction, recycling and composting programs

TC = the amount of volume reduction occurring through available, permitted transformation facilities

LF = the amount of permitted solid waste disposal capacity which is available for disposal in the jurisdiction, for solid waste generated in the jurisdiction

E = the amount of solid waste generated in the jurisdiction which is exported to solid waste disposal facilities in another jurisdiction (Note: According to the CIWMB, "other jurisdiction" refers to any city other than your own city.)

n = each year of a 15-year period commencing in 1991 (or the date of adoption of the SRRE) (iterative in one-year increments)

The above formula can be written as:

Capacity Needed =	waste		waste		waste		waste		landfill		waste
Year 1	[(generated	+	imported)	-	(diverted	+	transformed (burned)	+	capacity available	+	exported)]

Results of the solid waste disposal facility needs projection are shown in Table 7.1. These results indicate that the City of Los Altos will not require additional disposal capacity during the 15-year planning period. This assumption is not contingent upon the achievement of the AB 939 diversion goals.

According to the COSWMP, 1989 Revision, a 25 percent reduction of wastes landfilled by 1995 would extend countywide disposal capacity to 32 years. This is based on a 1.1 percent annual growth rate and a 1987-88 recycling rate of 16 percent.

Disposal Facility Phase-Out or Closure

The city's current contract with Newby Island landfill, together with achievement of the projected waste diversion goals, will provide adequate disposal capacity through at least 2018.

New or Expanded Disposal Facilities

Los Altos has no plans to establish a new landfill, transfer station or materials recovery facility within its boundries.

Table 7.1

Projected 15 Year Disposal Facility Capacity

Los Altos and Newby Island Landfill 30 year contract with existing programs

Year	Waste Generated	Waste Diverted	Capacity Needed	Capacity Available
1991	34,097	5,369	28,278	40,000
1992	35,013	6,314	28,699	40,000
1993	34,979	6,308	28,671	40,000
1994	34,802	6,301	28,642	40,000
1995	34,908	6,295	28,613	40,000
1996	34,874	6,289	28,585	40,000
1997	34,838	6,282	28,556	40,000
1998	34,804	6,276	28,528	40,000
1999	34,769	6,270	28,499	40,000
2000	34,735	6,264	28,471	40,000
2001	34,735	6,264	28,471	40,000
2002	34,735	6,264	28,471	40,000
2003	34,735	6,264	28,471	40,000
2004	34,735	6,264	28,471	40,000
2005	34,735	6,264	28,471	40,000
2006	34,735	6,264	28,471	40,000

Los Altos and Newby Island Landfill 30 year contract with implementation of SRRE

Year	Waste Generated	Waste Diverted	Capacity Needed	Capacity Available
1991	34,097	5,369	28,278	40,000
1992	35,013	8,952	26,061	40,000
1993	34,979	10,502	24,477	40,000
1994	34,802	12,392	22,410	40,000
1995	34,908	12,563	22,345	40,000
1996	34,874	16,410	18,464	40,000
1997	34,838	16,558	18,280	40,000
1998	34,804	16,858	17,946	40,000
1999	34,769	17,614	17,155	40,000
2000	34,735	17,775	16,960	40,000
2001	34,735	17,949	16,786	40,000
2002	34,735	18,265	16,470	40,000
2003	34,735	18,265	16,470	40,000
2004	34,735	18,265	16,470	40,000
2005	34,735	18,265	16,470	40,000
2006	34,735	18,265	16,470	40,000

Funding Component

Adequate and long term funding is essential for a successful integrated solid waste management system. In California, local solid waste management is typically funded by one or more of the following methods:

- Tipping fee — the amount charged by a transfer station, landfill or transformation facility to accept a specified amount of waste (usually expressed in tons or cubic yards)
- Property taxes — are levied on the person or corporation recorded on the deed of record and have limitations such as statutory ceilings or lack of voter support
- User fees — assess the actual user (household or commercial) based on weight/volume, number of containers, or specific services

Funding for solid waste collection, diversion and disposal in Los Altos comes from customers to the city through billings by the Los Altos Garbage Company . Funds are accumulated in and paid from an enterprise fund called the Solid Waste Management Fund. The solid waste fund pays for all solid waste related programs including:

- refuse disposal
- commercial recycling
- spring and fall cleanups
- household hazardous waste
- education and public information
- administration

Until two years ago, the residential curbside recycling program was paid from this fund. When LAGCo took over managing the program it was at no charge to the city and has since become a "cost of doing business" that is reflected in customer garbage collection rates. As new programs are developed, such as the yard waste to composting program and commercial recycling, they will be implemented and operated as part of LAGCo's regular service.

Funding Sources

The city operates under a two-year budget cycle. Funds needed by user fees for city managed programs are determined every two years and are adjusted during LAGCo garbage service rate reviews. It is anticipated that rate reviews for LAGCo service will be conducted every year during the short-term planning process. The current garbage customer rate sheet, as approved by the City Council July 1991, is in Appendix E. Rates are based on volume. Also in Appendix E is historical information showing how Los Altos has previously used rate adjustments to maintain the funding necessary to provide solid waste programs.

While funding is not provided by AB 939, the regulations based on this law allow municipalities to levy fees (either directly on residents or passed through costs from the waste hauler) to pay all program costs. The city intends to make adjustments to its existing rate system to fund implementation of the provisions of AB 939 and other applicable legislation. This approach can readily accommodate changing economic conditions, including unexpected developments.

The refuse rate structure must be re-evaluated so that users receive clear and substantial economic incentives to reduce and recycle their solid waste. Volume based user fees for refuse collection, combined with lower fees for collection of source separated yard waste and recyclables, will provide a direct economic incentive to reduce the amount of waste generated.

Local jurisdictions in Santa Clara County, including the City of Los Altos, are discussing the advisability of a special fee to fund programs developed in response to AB 939. This fee would be charged on tons disposed at all landfills in the county and be rebated to each local jurisdiction to pay for implementation of the SRRE. The city will continue to examine using such a funding source to supplement or replace funding for AB 939 implementation from customer rates.

Estimated Program Costs

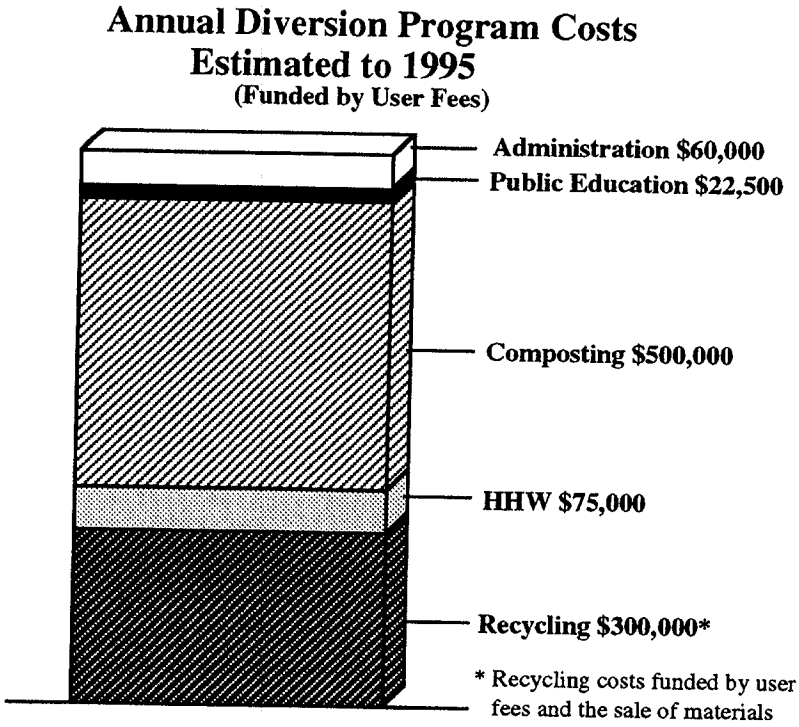
Figure 9.1 illustrates program costs projected through the year 1995. All costs are in 1991 dollars and include public education/information, administration and contingency costs. Funding "levels out" in later years as programs mature and population growth flattens.

Revenue Sources for New and Expanded Programs

Adjustments to the refuse collection and disposal rate structure will be made to offset increases in program costs associated with implementation of the SRRE.

The city will continue to encourage the commercial sector to recycle, whether through the city's hauler or a business' own contractor. Gross revenues from solid waste fees for the collection and disposal of commercial sector solid waste may exceed the reduction in solid waste collection and disposal costs. The city will reconcile any of the potential differences in gross revenues and costs through adjustments in refuse collection rates.

Figure 9.1



Contingency Funding

Unforeseen programs or opportunities to develop existing programs necessitate having contingency funding available. The solid waste fund has always maintained a substantial reserve for contingency purposes. Should this reserve not be adequate, rates would be adjusted. In addition, other options such as special taxes/assessments and grants are available.

Integration Component

Introduction

The California Waste Management Act (AB 939) establishes a statewide hierarchy for integrated waste management in the following order: 1) source reduction 2) recycling and composting and 3) environmentally safe land disposal and transformation. This component explains how source reduction, recycling, composting, and special waste components combine following this hierarchy to achieve the state's landfill diversion mandates of 25 percent by the year 1995 and 50 percent by the year 2000.

Los Altos has developed a fully integrated program to achieve the requirements of AB 939. Integration involves all facets of the solid waste management system, including: materials storage and preparation; collection; treatment or processing; and end use or disposal. This program builds upon the existing solid waste management system by extending or developing methods that assist in meeting AB 939 diversion goals.

The city will take a balanced, mutually compatible approach to diversion of sold waste by relying on a combination of source reduction, composting, and recycling by the residential, commercial, industrial (debris boxes), and self-haul sectors. The composition of the current and anticipated waste streams has been carefully considered during the selection of the particular programs. A number of programs are to be continued, expanded, or implemented. A summary of implementation timelines by program component is presented in Table 9.1. As shown in this table, most of the expanded or new aspects of the programs will be implemented in the short-term planning period. Table 9.2 indicates milestone dates for achieving waste reduction goals.

Program Selection

The source reduction, recycling, composting, and special waste components have been integrated so that the programs selected for implementation achieve their maximum potential. The selected programs expand upon the city's existing diversion programs. This reference point simultaneously provides a basis for program continuity and transition, which are key factors in maximizing program potential. Each program either targets mutually exclusive materials, or, in the case of source reduction, reinforces each individual program by targeting several common materials. A comprehensive, multi-faceted education and public information program will be a crucial part of the Source Reduction and Recycling Element.

Table 9.1

SRRE Component Integration

City=Los Altos Public Works Department LAGCo=Los Altos Garbage Company
County=Santa Clara County 3R=Citizen's Taskforce

Task	Responsible Agency	Begin Date	Funding Source
Short Term			
• Continue variable customer rate structure	City/LAGCo	ongoing	N/A
• Expand general information and program successes on solid waste issues	City/LAGCo/3R	ongoing	N/A
• Continue residential curbside recycling program	LAGCo/City	ongoing	user fees material sales
• Assist with educational materials for schools	3R/LAGCo/City	ongoing	user fees
• Continue white goods processing from cleanups	LAGCo	ongoing	user fees
• Expand information distributed during cleanups	City/LAGCo	ongoing	user fees
• Develop basic promotional materials for yard waste collection program	LAGCo/City	March 1992	user fees
• Initiate pilot program for yard waste/composting program	LAGCo/City	April 1992	user fees
• Special event "Green Earth Games"	3R/LAGCo/City	October 1992	user fees
• Begin adding routes for citywide composting program	LAGCo/City	October 1992	user fees
• Encourage residents etc. to utilized composted materials	LAGCo/City	ongoing	user fees
• Review program to offer waste evaluation to businesses	LAGCo/City	November 1992	user fees
• Expand commercial recycling program	LAGCo/City	ongoing	user fees material sales
• Increase materials types collected in residential and commercial recycling	LAGCo/City	ongoing	user fees material sales
• Develop information explaining enforcement and protection	City	January 1993	user fees
• Increase multi-family dwelling participation in curbside recycling	LAGCo/City	January 1993	user fees

Table 9.1 (continued)

SRRE Component Integration

City=Los Altos Public Works Department LAGCo=Los Altos Garbage Company
County=Santa Clara County 3R=Citizen's Taskforce

Task	Responsible Agency	Begin Date	Funding Source
Short Term			
• Develop materials for self-haulers/debris box customers to encourage diversion	LAGCo/City	March 1993	user fees
•Continue to encourage buy-back/AB2020 centers	City	ongoing	N/A
• Expand disposal collection fees for bulky items	LAGCo/City	April 1993	user fees
• Develop educational materials for backyard composting	3R/City	June 1993	user fees
• Review a yard waste drop-off program	City/LAGCo	June 1993	user fees
• Review program to provide source reduction technical assistance/education	LAGCo/City	September 1993	user fees
• Review plan for commercial/institutional composting	City/LAGCo	January 1994	user fees
• Publish directory of reuse and repair businesses	City	March 1994	user fees
• Develop program to divert debris box yard waste	LAGCo/City	June 1994	user fees
• Publish directory of brokers/end users of recycled materials	City/LAGCo	September 1994	user fees
• Review small grants to support community source reduction programs	City	October 1994	user fees
• Review program to divert tires from landfill	City/County	October 1994	N/A
• Review program to prohibit tires and white goods at landfill	City/County	October 1994	user fees
• Review program for public recognition of source reduction activities	City	December 1994	user fees
• Continue non-procurement programs with city organization	City	ongoing	N/A
• Continue city procurement policies encouraging source reduction	City	ongoing	N/A

Table 9.1 (continued)

SRRE Component Integration

City=Los Altos Public Works Department LAGCo=Los Altos Garbage Company
County=Santa Clara County 3R=Citizen's Taskforce

Task	Responsible Agency	Begin Date	Funding Source
Short Term			
• Review multi-jurisdictional approaches to source reduction	City/LAGCo/County	ongoing	N/A
• Develop debris box diversion program	LAGCo/City	March 1995	user fees
• Encourage demand for products made with post consumer materials	City/3R	July 1995	user fees
• Conduct waste stream characterization study	City	September 1995	user fees
• Evaluate and update program objectives annually	City	ongoing	user fees
Medium Term			
• Continue and optimize all of the short term programs		ongoing	
• Modify refuse collection practices to optimize recycling	LAGCo	ongoing	user fees
• Review program for direct economic benefits for implementing source reduction City	February 1996	user fees	
• Develop materials to support debris box inert solids diversion program	LAGCo/City	March 1996	user fees
• Expand diversion of inert solids from debris box program	LAGCo	June 1996	user fees
• Monitor national /state efforts in all waste reduction activities	City/LAGCo	ongoing	N/A
• Monitor state efforts for financial/economic incentives and public education support for recycling	City/County	ongoing	N/A
• Review instituting product bans	City	June 1998	user fees
• Review program to impose penalties for not implementing or reporting	City	December 1998	user fees
• Conduct waste stream characterization study	City	September 2000	user fees
• Evaluate and update program objectives annually	City	ongoing	user fees

Table 9.2

SRRE Component Integration Milestones

City=Los Altos Public Works Department LAGCo=Los Altos Garbage Company
County=Santa Clara County 3R=Citizen's Taskforce

Task	Responsible Agency	Begin Date
Short Term		
• Rate adjustments to include yard waste program and increase effectiveness of variable rate structure	City/LAGCo	January 1993
• Evaluate/add if appropriate, materials for residential curbside recycling program (annually)	City/LAGCo	July 1993
• Review and adjust citywide implementation of yard waste program (6-month review)	City/LAGCo	October 1993
• Review of existing programs effectiveness in meeting 25% diversion	City/LAGCo	January 1994
• Developed public information resources/library (reviewed annually)	City/LAGCo/3R	March 1994
• Short term objectives met diverting at least 25% of waste stream from landfill	City	December 1995
Medium Term		
• Debris box diversion programs in effect	City/LAGCo	June 1996
• Initiate product bans if appropriate	City	January 1997
• Impose regulations where appropriate for reporting, recycled products purchasing preferences, diversion requirements	City	January 1998
• Medium term objectives met diverting at least 50% of waste stream from landfill	City	January 2000

Priorities between components and programs within components were established based on several considerations, including:

- position in integrated waste management hierarchy
- effectiveness in reducing the weight, volume, or hazard or materials, or otherwise diverting materials from the landfill
- consistency with existing solid waste management practices
- cost effectiveness and ease of implementation

A top priority to the city will be source reduction. Any amount of waste that can be reduced at the point of generation means that less waste will enter the sold waste stream for diversion or disposal. Preventing entry of materials into the waste stream through source reduction is the most cost effective and efficient waste management approach.

The source reduction program will be extensive. It will include a combination of education and public information, economic incentives, program development and regulations. The contribution of source reduction to diversion goals cannot be predicted with confidence at this time, since existing data are nonconclusive or insufficient. It is anticipated that source reduction will result in only a small percentage of overall diversion. The city's goal is to have a measurable diversion of five percent by the year 2000. Nevertheless, the emergence of source reduction attitudes and behavioral changes will help increase diversion that is attributed to recycling and composting.

The next priority for managing materials which remain in the solid waste stream despite source reduction efforts will be to enhance the existing recycling program and implement a composting program efficiently. Materials targeted for recycling or composting were selected on: 1) ease of recovery 2) degree of contamination 3) cost effectiveness in collection, processing and marketing 4) existence of markets and 5) level of contribution to diversion goals.

Recycling offers the opportunity to divert a large portion of the waste stream. Several materials which appear in large quantities can be diverted effectively and easily through source separation, with subsequent collection, processing and marketing. In the short-term, recycling by residential and commercial sectors is expected to result diversion of approximately 23 percent. In the medium-term, with the addition of the industrial (debris box) sector for demolition debris, the estimated diversion from recycling and composting is anticipated to be 34 percent.

In the short-term, residential recycling education and public information activities will be enhanced to expand use by single and multi-family dwellings. The volume based user rates will reflect and encourage recycling efforts by residents. Additional materials to be collected will be considered for both the short and medium-term.

The city will encourage a wide variety of independent commercial sector recycling efforts as well as developing programs to purchase products made from recycled materials. Figures 9.1-4 depict current and projected materials diversion.

Figure 9.1
Current Diversion Program Results

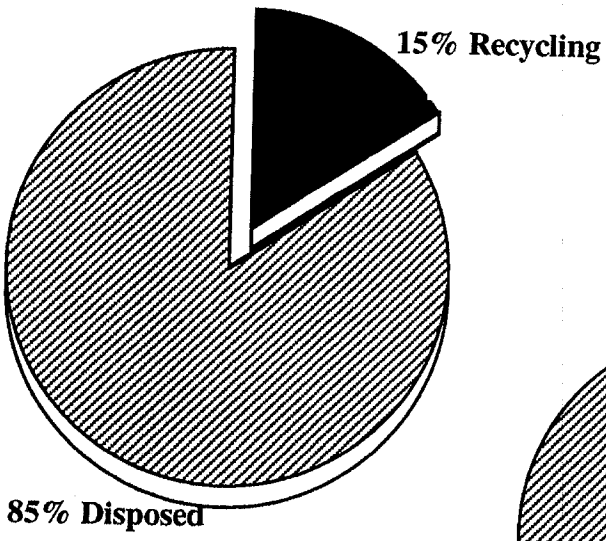


Figure 9.2
Projected 36% Short Term Diversion

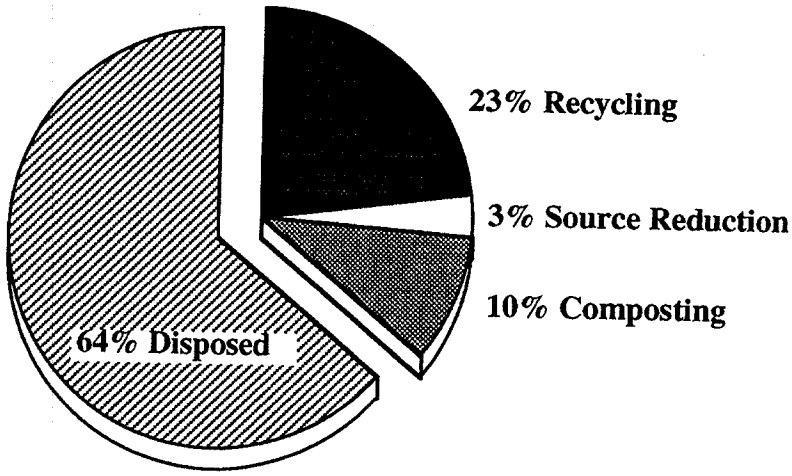


Figure 9.3
Projected 51% Medium Term Diversion

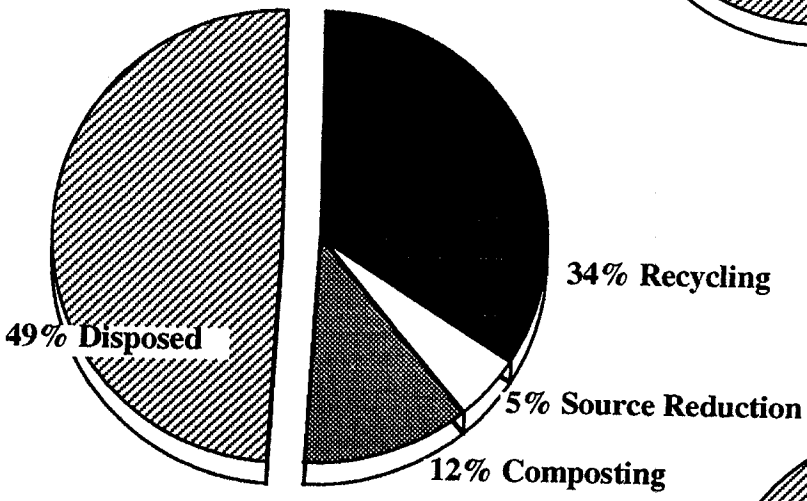
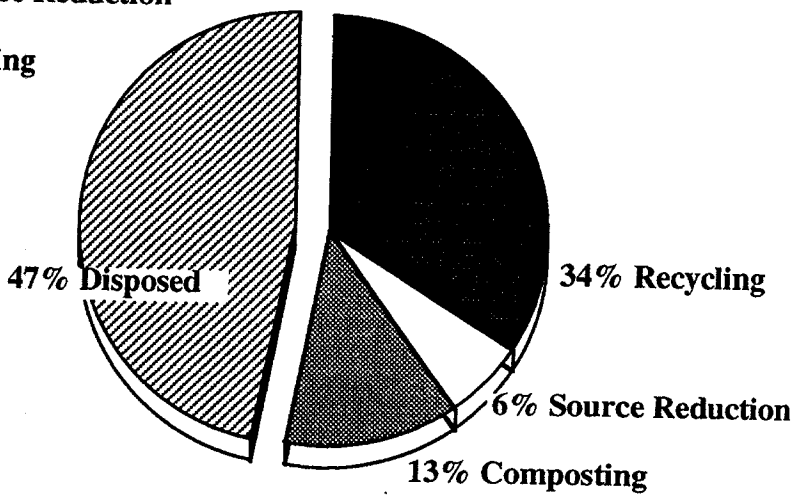


Figure 9.4
Projected 53% 15 Year Diversion



Like recycling, composting will play a vital role to reaching the city's diversion goals. Composting offers the potential for significant levels of diversion with materials that can be easily separated. These materials can be collected and marketed efficiently and effectively. A residential yard waste program will be implemented by late 1992. The commercial sector and debris boxes will be targeted for composting programs in 1994. The composting programs should result in diverting 10 percent from the short-term waste stream and 12 percent from the medium-term.

The city will continue to provide opportunities for residents to properly dispose of household hazardous waste and diverting it from landfills. The Household Hazardous Waste Element addresses this program in more detail.

Los Altos expects to meet or exceed the state's diversion goals by implementing recycling and composting programs supported by source reduction as well as with public education and information. Remaining solid waste that is not recycled or composted or otherwise diverted in accordance with AB 939 will be landfilled. With the implementation of comprehensive, integrated source reduction, recycling, special waste, and composting programs, the remaining solid waste to be landfilled will be reduced significantly in weight, volume and toxicity.

Flexibility and contingencies have been built into the programs because waste reduction, composting and recycling strategies can change rapidly as a result of changes in market conditions, technological innovations, and other circumstances. Los Altos will make every effort to assure that all parties involved in the city's source reduction and recycling programs — haulers, intermediate processors, residents, public agencies, building owners, end users — will be acting in a coordinated manner.

Report 1301

Final

DISPOSED WASTE CHARACTERIZATION STUDY FOR CITY OF LOS ALTOS

Submitted to:

Santa Clara County

by:

CalRecovery Inc.
725C Alfred Nobel Drive
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DISPOSED WASTE CHARACTERIZATION STUDY

INTRODUCTION

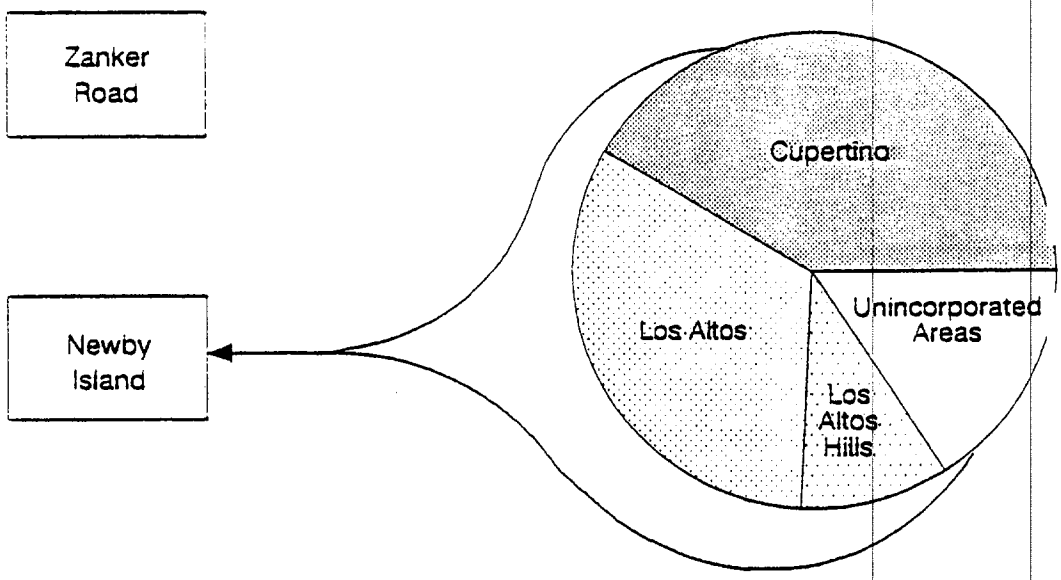
The California Integrated Waste Management Act, Assembly Bill 939, requires local governments to reduce, reuse, recycle, and compost a portion of the materials that are typically disposed by their jurisdictions. The State has mandated that 25% and 50% solid waste diversion rates be met in 1995 and 2000, respectively. The information presented in this study defines the existing conditions regarding disposed waste quantities. The results of the study establish the baseline data for future integrated waste management practices. The data presented herein will be used along with diversion data collected in other studies to compute waste generation. The baseline waste generation data will be used subsequently to assist in the monitoring and documentation of the progress of programs implemented to achieve the mandated 25% and 50% diversion goals.

CalRecovery was retained by Santa Clara County to plan and conduct a waste characterization study for portions of north Santa Clara County (North County). The North County area defined for this study is composed of the following jurisdictions: 1) City of Los Altos; 2) Town of Los Altos Hills; 3) City of Cupertino; and 4) unincorporated north Santa Clara County. For purposes of this report, unincorporated north Santa Clara County comprises the unincorporated areas within the sphere of influence of each of the jurisdictions.

The estimated annual and projected disposed waste data presented in this study were determined based on the average compositions of the sampled waste sources developed for this study, the apportionment of scalehouse data to respective waste types, and population data supplied by the jurisdictions and from published sources.

CURRENT SOLID WASTE DISPOSAL PRACTICES

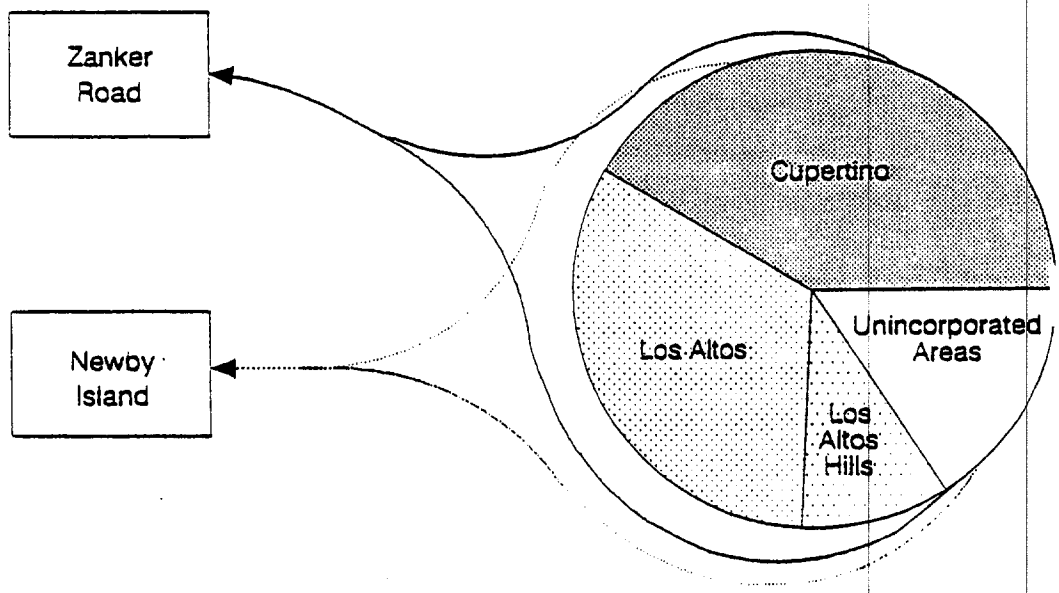
The cities of Cupertino and Los Altos, and the Town of Los Altos Hills have recently agreed to long-term (30-year) disposal contracts with BFI for disposal at Newby Island Landfill (see Figure 1a). Each of the disposal agreements provides for disposal of wastes generated within the



——— All collection vehicles

Note: Jurisdiction sizes are relative to percent of total waste disposed.

Figure 1a. Typical Disposal Pattern for North Santa Clara County



——— All collection vehicles for sampling

All nonsampled collection vehicles

Note: Jurisdiction sizes are relative to percent of total waste disposed.

Figure 1b. Study Period Disposal Pattern for North Santa Clara County

sphere-of-influence of each city, which includes the unincorporated area in and adjacent to the city. The County is a party to each agreement. The four jurisdictions have also executed an agreement allocating the contracted capacity among the jurisdictions.

SAMPLING METHODOLOGY FOR SOLID WASTE COLLECTION VEHICLES

A Test Plan which outlines the field and sorting activities for the jurisdictions and lists the disposed waste components for sorting is included as Appendix A. The California Integrated Waste Management Board (CIWMB) has developed the list of waste categories and types that are used in this report, to reflect the common practices of solid waste management and recycling industries in California and provide recognizable names for waste types requiring special handling and/or disposal. The state-wide uniform application of the list of waste categories and types will allow the CIWMB to compare the appropriateness of a jurisdiction's chosen diversion methods with the quantities and types of waste currently disposed.

The following CIWMB definitions are used when referring to residential, commercial, and industrial wastes. A brief description as to how these wastes were typically received for sampling follow each definition respectively.

- **Residential Waste**: Solid waste originating from single-family or multi-family dwellings (apartments). Single-family residential waste arrived for sampling in side-loading vehicles. Apartment waste was received in front-loading and side-loading vehicles.

- **Commercial Waste**: Solid waste originating from stores; business offices; commercial warehouses; hospitals; educational, health care, military, and correctional institutions; non-profit research organizations; and government offices. The majority of commercial waste was received for sampling in front-loading vehicles.

- **Industrial Waste**: Solid waste originating from mechanical manufacturing facilities, factories, refineries, construction and demolition projects, and publicly-operated treatment works and/or solid waste placed in debris boxes. All industrial waste was sampled from debris boxes.

The characterization of disposed waste from solid waste collection vehicles was c from June 3 to 12, 1991, at the Zanker Road Landfill and Recycling Center. Assis r study was provided by Los Altos Garbage Company (LAGCO). Initial discussions wit prior to sampling provided background information regarding jurisdictional bound routes, and frequency of collection of solid waste. To facilitate the sampling and cedure, LAGCO routed solid waste collection vehicles which generally go to Newbv rectly to the Zanker Road facility (Figure 1b).

The Draft ASTM "Method for the Determination of the Composition of Unprocesse Solid Waste," which describes the testing, analytical, and statistical method for sampl cluded as Appendix B. Based on the LAGCO background data, daily residential, com and industrial waste sources could be readily sampled on an as-needed basis duri pling period to reflect the jurisdiction's waste stream. The as-needed procedure for se vehicle loads provided an unbiased method of selection and therefore is random b c investigator has no basis (other than the need to sort) upon which to subjectively s vehicle over another.

Zanker Road assisted in transporting sample loads to the sampling area and sorting th nated samples. This work and all data recording were supervised and documented the sampling period by CalRecovery field personnel.

ACCURACY STATEMENT

The sampling program for disposed waste analysis was designed to achieve compo sults that would be within ±10% to 15% of the population mean (x) of each jurisdi posite disposed waste sources at the 90% level of confidence for the majority of wa gories (see Test Plan in Appendix A). The jurisdiction's composite disposed was defined as the sum of its waste from residential, commercial, and industrial sources. jurisdiction-specific composition data were not available at the time of this study th Plan assumes a coefficient of variation of 0.3 (s/x) among the majority of waste cate or selection of the 0.3 value for coefficient of variation is based on the average and deviations of component compositions (in particular but not exclusively, the total ap gory as noted below) measured in previous waste characterizations in California aft For example, the residential and commercial <u>total</u> paper average compositions (x a dard deviations (s), as determined in the October 1990 waste characterization study for

of Sunnyvale[1] (located in north Santa Clara County) waste characterization study, yield a coefficient of variation of approximately 0.3. Substituting this value would produce sample sizes similar to those developed with the Test Plan coefficient of variation.

Using the ASTM Draft "Method for Determination of the Composition of Unprocessed Municipal Solid Waste," the appropriate number of samples (n) required to achieve an accuracy within 15% of the population mean is computed by invoking the relation for accuracy (e) as a fraction and the number of samples (n):

$$n = \left[\frac{t^* \ (s/x)}{e} \right]^2$$

where t^* is the t-statistic and s/x is the coefficient of variation. Through substitution:

$$n = \left[\frac{1.684 \ (0.3)}{0.15} \right]^2$$

$$n \simeq 12$$

using t^*_{90} (n=12) through substitution:

$$n = \left[\frac{1.7959 \ (0.3)}{0.15} \right]^2$$

$$n \simeq 13$$

Under these conditions, the minimum number of samples that should be collected for each jurisdiction is 13. The actual number of samples analyzed in the field for each jurisdiction was in the range of 13 to 25.

NUMBER OF VEHICLES SAMPLED

The proposed and the actual total number of solid waste collection vehicles sampled for each jurisdiction for the disposed waste analysis are presented in Table 1. The table also shows the number of vehicles sampled by waste type.

[1] "Source Reduction and Recycling Element," prepared by Cal Recovery Systems, Inc. for the City of Sunnyvale, 1990.

Table 1. Planned and Actual Number of Vehicles Sampled for the North Santa Clara County Disposed Waste Field Analysis (June 3 - 12, 1991)

	Cupertino		Los Altos		Los Altos Hills		Unincorporated		Total	
Waste Source	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Residential	10	10	10	9	10	7	10	10	40	36
Commercial	8	8	8	8	-	-	-	-	16	16
Industrial	6	7	6	8	6	6	6	7	24	28
TOTALS	24	25	24	25	16	13	16	17	80	80

SAMPLING METHODOLOGY FOR SELF-HAUL WASTE

The primary sources of self-haul waste are residents of single-family dwellings and small business operators. It is advantageous, for planning purposes, to make the distinction between compacted residential and commercial waste, and noncompacted self-haul waste. Programs selected for implementation to meet the required 25% and 50% diversion goals can be better determined if self-haul waste is addressed as a separate waste source.

A visual survey to develop average compositions of this waste stream was conducted during the week of June 3, 1991, at the Mt. View Landfill. The Mt. View Landfill was chosen as the location for the self-haul waste characterization because of its proximity to the North County jurisdictions. Because the number of self-haul loads disposed at the site was low, an informal telephone survey of businesses that generate the type of waste that is often disposed by self-haul vehicles (e.g., landscapers, gardeners, general contractors) was conducted to assess typical disposal patterns. The responses indicated that these businesses dispose of the waste via self-haul to various disposal sites in the area, as well as have it collected and disposed in roll-off containers or by commercial vehicles. Additional composition data on self-haul wastes from the North County jurisdictions were also obtained from a visual survey conducted by CalRecovery at the Guadalupe Mines Landfill during July 1991.

Self-haul waste was classified into one of four categories: yard waste, construction/demolition debris, dirt/rubble, or miscellaneous (household refuse). For example, if a load was estimated by visual observation to contain a majority of yard waste, it was designated as a yard waste load. This information was then used to calculate an average yard waste load composition. Since self-haul waste is typically bulky and relatively uniform, trained field observers are able to analyze and record a large number of vehicle loads.

The four categories identified in the self-haul waste characterization can be described as the following:

- **Yard waste**: loads typically consisting of residential yard clean-up and maintenance debris
- **Construction/demolition**: loads resulting from construction, repairs, remodeling, and demolition projects
- **Dirt/rubble**: loads consisting of debris-filled dirt and, on occasion, clean dirt for use as landfill cover

- **Miscellaneous**: loads which cannot be classified into one of the categori above and often contain large percentages of solid waste from resident not receive curbside or regular collection service

The yard waste, construction/demolition, and dirt/rubble categories generally con percentages of residential and/or commercial type waste. While most self-haul waste readily categorized into one of the four above categories, purely homogeneous self-h loads are generally quite rare.

Concurrent with the visual sampling, scalehouse personnel at the Mt. View Landfill the origin (jurisdiction) of self-haul loads during the sampling period. Similar informat obtained from the field study conducted at Guadalupe Mines Landfill, and from a scalehouse survey conducted by BFI at Newby Island. This information provided the m apportionment of quantity data to each jurisdiction.

CalRecovery contacted the following sources to obtain self-haul quantity data: Mt. Vi fill, Zanker Road Landfill and Recycling Center, Browning-Ferris Industries (Newby Isla fill), and Guadalupe Mines Landfill. Data received from Zanker and BFI showed that a of self-haul wastes from the North County jurisdictions were negligible.

Over 725 self-haul vehicles were visually surveyed at the Mt. View and Guadalupe la volume, waste type, and composition.

RESULTS

The average compositions (% weight) and the estimated annual disposed quar tons/year) for residential, commercial, industrial, and self-haul waste are shown in Tabl results are presented in accordance with the California Int Waste Management Board.

For this study the category labeled "Other Special Wastes" consists of common hous pliances such as stereos, radios, and telephones. These types of appliances predom compacted residential waste (i.e., waste usually collected in rear loaders) and can b salvaged or identified from the tipping area.

Table 2. Average Composition (% Weight) and Annual Quantities (Tons/Year) of Disposed Waste.

Los Altos
June 3-12, 1991
Disposed Waste Characterization

Material	Residential N = 5 %	Residential N = 5 TPY	Commercial N = 6 %	Commercial N = 6 TPY	Industrial N = 7 %	Industrial N = 7 TPY	Self Haul (Visual) %	Self Haul (Visual) TPY	Total %	Total Disposed TPY
1) TOTAL PAPER	34.9	3744	45.7	3282	1.9	200	3.5	16	25.2	7242
OCC/Kraft	6.3	675	21.1	1517	0.9	96	1.9	9	8.0	2297
Mixed	18.1	1940	12.4	890	0.1	15	1.4	7	9.9	2851
Newspaper	4.1	440	3.6	260	0.3	30	0.2	1	2.5	730
High-Grade	0.3	33	2.4	175	0.0	0	0.0	0	0.7	209
Other	6.1	656	6.1	439	0.6	59	0.0	0	4.0	1154
2) TOTAL PLASTICS	6.0	641	7.4	530	2.1	214	1.3	6	4.8	1391
HDPE	0.8	88	0.6	40	0.0	0	0.0	0	0.4	128
PET	0.1	15	0.4	29	0.1	7	0.0	0	0.2	52
Film	2.8	298	3.4	241	0.5	52	0.6	3	2.1	593
Other	2.2	240	3.1	219	1.5	155	0.6	3	2.1	617
3) TOTAL GLASS	4.4	472	3.5	251	0.1	7	0.3	1	2.5	732
Refillable Beverage	0.0	0	0.0	2	0.0	0	0.0	0	0.0	2
Cal Redemption	0.6	69	1.0	74	0.1	7	0.0	0	0.5	151
Other Recyclable	3.7	402	2.0	146	0.0	0	0.0	0	1.9	548
Other Non-Recycl	0.0	1	0.4	28	0.0	0	0.2	1	0.1	30
4) TOTAL METALS	3.4	360	4.4	314	4.2	436	4.9	23	3.9	1132
Aluminum Cans	0.3	30	0.2	13	0.3	30	0.0	0	0.3	73
Bimetal	0.0	0	0.0	1	0.0	0	0.0	0	0.0	1
Tin F/B	1.1	117	1.5	104	0.1	15	0.0	0	0.8	236
Non-Fe	0.3	32	0.2	12	0.1	7	0.3	2	0.2	53
White Goods	0.0	0	0.0	0	1.4	148	1.4	7	0.5	155
Other	1.7	180	2.6	183	2.3	236	3.1	14	2.1	614
5) YARD WASTE	29.4	3155	4.8	344	25.9	2675	3.5	16	21.5	6190
6) OTHER ORGANICS	17.0	1823	32.5	2336	34.6	3584	22.8	106	27.3	7849
Food	9.5	1018	23.3	1673	0.0	0	0.3	1	9.4	2692
Tires/Rubber	0.1	13	5.3	383	0.7	74	0.5	2	1.6	472
Wood	0.9	94	1.4	102	14.1	1456	18.8	87	6.1	1740
Ag. Crop Residue	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Manure	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Textile/Leather	1.8	196	1.0	74	10.9	1123	1.9	9	4.9	1403
Other Misc Org.	4.7	503	1.4	104	9.0	931	1.3	6	5.4	1543
7) OTHER WASTES	4.8	513	1.5	105	31.2	3229	63.6	295	14.4	4143
Inerts	4.5	486	1.1	77	31.2	3229	63.5	295	14.2	4087
HHW	0.3	27	0.4	28	0.0	0	0.1	0	0.2	56
8) SPECIAL WASTES a)	0.2	26	0.3	22	0.0	0	0.1	1	0.2	49
Total	100.0	10734	100.0	7184	100.0	10346	100.0	464	100.0	28728

Average may not sum to 100% due to rounding

a) Small Household Appliances

Figure 2 shows the percentage (by weight) of the jurisdiction's total disposed waste b source. As shown in the figure, the residential and industrial sectors comprise tl portions of the disposed waste stream at 37% and 36%, respectively.

In the following sections, the results of the disposed waste characterization are disc s they pertain to the City of Los Altos.

RESIDENTIAL WASTES

Vehicles containing residential waste were sampled each day during the collection sample period. As shown in Table 2, the total paper category is the category with tl concentration (34.9%) in the disposed residential waste stream. Mixed paper alone con approximately 18.1% of the City's disposed residential waste. Yard waste comprise and food waste 9.5% of this waste stream.

COMMERCIAL WASTES

Generators of commercial waste were sampled randomly from front- and rear-loaders. L personnel were available during the sampling program to provide assistance in de load origin and route information regarding wastes from different sources in mixed loads.

The data in the table show that 45.7% of the disposed commercial waste stream cc s paper products, with OCC/kraft and mixed paper comprising the largest part of this categ 21.1% and 12.4% of the disposed commercial waste stream, respectively. Other r comprise approximately one-third (32.5%) of the disposed commercial waste stream; 23 food wastes.

INDUSTRIAL WASTES

While there are no industrial generators located within the City, by CIWMB definition, c waste includes material placed into debris boxes. Therefore, the industrial compositio.. in Table 2 is based on debris boxes. Table 2 shows that 34.6% of the disposed inc waste stream is other organics, and 31.2% is in the category of other wastes. A signifi r tion of the disposed industrial waste stream is yard waste (25.9%). A number of land contractors reported that they routinely place yard waste into debris boxes.

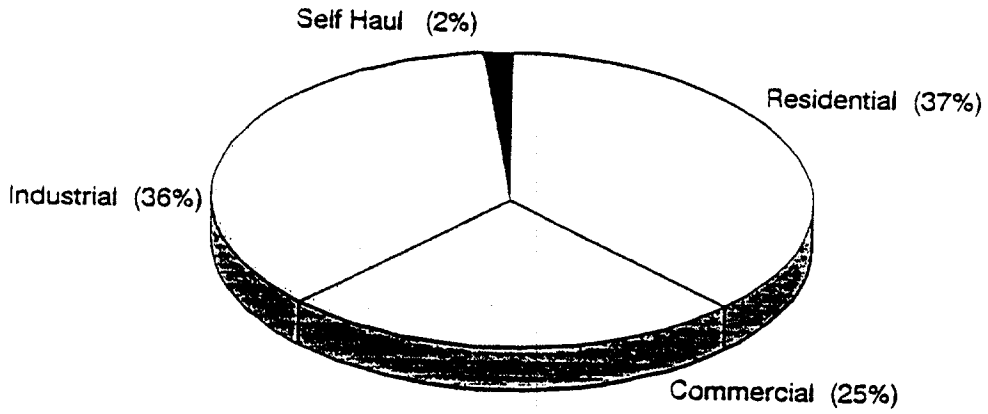


Figure 2.
Percentage (by weight) of
Total Disposed Quantities by Waste Source -
City of Los Altos

SELF-HAUL WASTES

The quantity of self-haul wastes disposed is less than 2% of the total disposed so..J stream.

As shown in Table 2, the inerts waste type has the largest concentration (63.5%) in tr posed self-haul wastes. Wood waste comprises 18.8% of this waste stream.

SEASONALITY

It has been assumed that four seasons could potentially impact the disposed wastes in tr of Los Altos. The collection vehicle quantities supplied for the sampling period were r( ) tative of 6 months of disposed waste data and were doubled to provide estimated quar..t a 12-month basis.

The potential seasonal impacts on the remainder of Los Altos' waste stream were cons based on the following factors: demographics of the area, degree of commercial devel : local meteorology, the results of the disposed waste characterization, and the results c sonal waste characterization studies conducted for the City and County of San Fr (1985/86),[2] the City of Berkeley (1988/89), North Santa Clara County (NSCC) (1982/8_, San Diego County (1988/89).[4] This information was reviewed with emphasis placed unc prior four-season waste characterization study for North Santa Clara County. Based or : view and on the fact that yard waste is a large percentage of the waste stream, yard wa judged to be the only component that may undergo a substantial seasonal variation in : tion. The concentration of yard waste is expected to fluctuate within ±20% of the estir annual average over the course of a year. The results of the four-season NSCC study that the concentrations of yard waste in the spring and fall were 21% and 31%, respec These amounts are approximately ±20% of the average of the four seasons' (26%) p: j disposed waste quantities.

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2 "Solid Waste Characterization Study," study prepared by Cal Recovery Systems, Inc. for the (San Francisco, 1987.

3 "North Santa Clara County Comprehensive Waste Characterization Study (1982-83) Final S r Report," prepared by Cal Recovery Systems, Inc. for the NSCC Solid Waste Management A 1984.

4 "Waste Characterization and Market Study," prepared for the County of San Diego by F c Sciences, Inc., 1989.

PROJECTED DISPOSED WASTE QUANTITIES

Fifteen-year projections of disposed wastes by waste source are shown in Table 3. The projected quantities are based on population projections from the Association of Bay Area Governments (ABAG). The population projections are used only to calculate the escalation rate of the disposed waste quantities.

Table 3. Projected Annual Quantities of Disposed Waste for Los Altos (Tons/Year)

Year:	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Material Esc. factor a):		0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	1.000	1.000	1.000	1.000	1.000	1.000
1) TOTAL PAPER	7242	7235	7227	7220	7213	7206	7198	7191	7184	7177	7177	7177	7177	7177	7177	7177
OCC/Kraft	2297	2295	2293	2290	2288	2286	2284	2281	2279	2277	2277	2277	2277	2277	2277	2277
Mixed Paper	2851	2848	2846	2843	2840	2837	2834	2831	2829	2826	2826	2826	2826	2826	2826	2826
Newsprint	730	729	729	728	727	727	726	725	724	724	724	724	724	724	724	724
High-Grade	209	208	208	208	208	208	207	207	207	207	207	207	207	207	207	207
Other Paper	1154	1153	1152	1151	1150	1149	1148	1146	1145	1144	1144	1144	1144	1144	1144	1144
2) TOTAL PLASTICS	1391	1390	1389	1387	1386	1384	1383	1382	1380	1379	1379	1379	1379	1379	1379	1379
HDPE	128	128	128	128	128	128	128	128	127	127	127	127	127	127	127	127
PET	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52
Film	593	593	592	591	591	590	590	589	588	588	588	588	588	588	588	588
Other Plastics	617	617	616	616	615	614	614	613	613	612	612	612	612	612	612	612
3) TOTAL GLASS	732	731	730	729	729	728	727	726	726	725	725	725	725	725	725	725
Refillable Glass Bev.	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Calif. Redemption Value	151	151	150	150	150	150	150	150	150	149	149	149	149	149	149	149
Other Recyclable	548	547	547	546	546	545	545	544	544	543	543	543	543	543	543	543
Other Non-Recyclable	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
4) TOTAL METALS	1132	1131	1130	1129	1128	1127	1125	1124	1123	1122	1122	1122	1122	1122	1122	1122
Aluminum Cans	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73
Bimetal Cans	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Tin F&B Cans	236	236	236	236	235	235	235	235	234	234	234	234	234	234	234	234
NON-Fe/Other Alum	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53
White Goods	155	154	154	154	154	154	154	153	153	153	153	153	153	153	153	153
Other Metal	614	613	613	612	612	611	610	610	609	609	609	609	609	609	609	609
5) YARD WASTES	6190	6184	6178	6172	6165	6159	6153	6147	6141	6135	6135	6135	6135	6135	6135	6135
6) OTHER ORGANICS	7849	7841	7834	7826	7818	7810	7802	7795	7787	7779	7779	7779	7779	7779	7779	7779
Food	2692	2689	2686	2684	2681	2678	2676	2673	2670	2668	2668	2668	2668	2668	2668	2668
Tires/Rubber	472	471	471	470	470	470	469	469	468	468	468	468	468	468	468	468
Wood	1740	1738	1736	1735	1733	1731	1730	1728	1726	1724	1724	1724	1724	1724	1724	1724
Ag Crop Residue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Manure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Textiles/Leather	1403	1401	1400	1398	1397	1396	1394	1393	1391	1390	1390	1390	1390	1390	1390	1390
Other Misc. Organics	1543	1542	1540	1539	1537	1535	1534	1532	1531	1529	1529	1529	1529	1529	1529	1529
7) OTHER WASTES	4143	4139	4135	4130	4126	4122	4118	4114	4110	4106	4106	4106	4106	4106	4106	4106
Inert Solids	4087	4083	4079	4075	4071	4067	4063	4059	4055	4051	4051	4051	4051	4051	4051	4051
HHW	56	56	56	56	55	55	55	55	55	55	55	55	55	55	55	55
8) OTHER SPECIAL WASTES b)	49	49	49	49	49	49	49	49	49	48	48	48	48	48	48	48
Total	28728	28699	28671	28642	28613	28585	28556	28528	[illegible]	[illegible]	28[illegible]	2847[illegible]	471	1[illegible]	[illegible]	284[illegible]

Appendix A

SANTA CLARA NORTH COUNTY AREA

DISPOSED WASTE FIELD ANALYSIS PLAN

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May, 1991

DISPOSED WASTE FIELD ANALYSIS PLAN

INTRODUCTION

This test plan presents the methodology for estimating the composition of solid waste gene te City of Cupertino, City of Los Altos, Town of Los Altos Hills, and Unincorporated North Coun '. analyses will be conducted at the Zanker Road Disposal Site and the Mountain View Landfill du of June 3-12 (Monday through Wednesday), 1991.

SAMPLE COLLECTION AND SORTING METHODS

The methods of sample collection and of sorting will be those adapted from the ASTM Draft ' le Determination of the Composition of Unprocessed Municipal Solid Waste." Loads of waste will l the landfill to the load sampling and sorting location. Waste categories and types for the field a those specified in Section 18722 (j) of the Emergency Regulations. A listing of the waste cate c is presented, but not limited to, those in Table 1. Data will be recorded on field sample data she those in Table 2.

Residential waste collection vehicles will be selected to be representative of waste from within e jurisdiction. Commercial waste collection vehicles will be selected to be representative of com generators within each jurisdiction. The selection of representative loads of waste will be bas d discussions with the haulers and CRS's knowledge of the residential and commercial waste sou the jurisdictions.

Industrial waste collection vehicles (debris boxes) from the three jurisdictions will be selected at landfill during the course of the one-week field study.

Special wastes (such as sludge, asbestos, etc.) will be sorted to the extent that it is safe to do sc extent that the materials are present in loads designated for sampling. Special wastes may also b during the visual survey of self-hauled wastes. Additionally, records kept of special waste by h u disposers will be analyzed as part of the study.

No sources of marine waste were identified during the planning process for the field analysis p However, while conducting the field study, such wastes will be noted if they are observed.

WASTE SAMPLING PLAN

The waste sampling plan for each jurisdiction and waste source is delineated in Table 3. As show table, in addition to the field sorting program for waste delivered to Zanker Road by collection h haul wastes and wastes delivered by small haulers will be visually surveyed at the Mountain View establish an estimation of the quantity, composition, and source of this waste including jurisdictio generation. The objective will be to visually survey about 70 percent of the self-haul wastes dis c the week sample period.

The sampling plan is structured to achieve the following objectives:

- Provide an accurate accounting of waste materials by jurisdiction and waste source (resid commercial, industrial, and self-haul generators).

An estimated composition measurement accuracy for the primary recyclable waste categories of the overall waste stream in the range of 10% to 15% of the population mean for each jurisdiction at the 90% confidence level.

Since composition sampling has not been performed before on wastes from all three jurisdictions, the sampling plan is based on information regarding sample variability obtained from other areas. Specifically, the plan has been developed assuming a ratio of standard deviation to mean value (coefficient of variation) of 0.3. The selection of the 0.3 value for coefficient of variation is based on the average and standard deviations of component compositions, in particular but not exclusively, the total paper category measured in previous waste characteristics in California after 1984. An objective of the analysis is to characterize the overall waste stream from each jurisdiction within an accuracy of approximately 10 to 15%. A sampling of 18 to 20 samples per jurisdiction yields an estimated error band of 12% at the 90% confidence level. The number of collection vehicles selected for sampling represents greater than 50% of those available during the sample period.

WASTES QUANTITIES

Total waste quantities will be accounted for by using the most recent 6 months of historical data for each waste type originating from within the three cities. The quantity data for each waste source (resident, commercial, and industrial) will be provided for each jurisdiction by the collection company. Quantities of self-haul wastes will be provided by the solid waste facility operator(s) or computed by CRS based on field data.

ANCILLARY DATA COLLECTION

Ancillary data collection activities before, during and after the field analyses will include where possible the following for each vehicle load:

<u>Residential</u>

- Collection company and route number
- Estimated number of corresponding households

<u>Commercial</u>

- Collection company and route number
- Type of generator

<u>Industrial</u>

- Collection company
- Type of container (open top or compactor)
- Type of generator

Table 1. Refuse Components for Sorting Study

1) **TOTAL PAPER**
   - Corrugated containers
   - Mixed paper
   - Newspaper
   - High grade ledger paper
   - Other paper

2) **TOTAL PLASTICS**
   - HDPE containers
   - PET containers
   - Film plastics
   - Other plastics

3) **TOTAL GLASS**
   - Refillable beverage
   - California Redemption Value
   - Other recyclable
   - Other non-recyclable

4) **TOTAL METALS**
   - Aluminum cans
   - Bi-metal cans
   - Tin F&B cans
   - Non-ferrous/other aluminum
   - White goods

5) **YARD WASTES**

6) **OTHER ORGANICS**
   - Food waste
   - Tires/rubber products
   - Wood wastes
   - Agricultural crop residues
   - Manure
   - Textiles/leather
   - Other organics

7) **OTHER WASTES**
   - Inert solids
   - HHW

8) **OTHER SPECIAL WASTES**

Table 2. Sample Field Data Sheet

/ASTE COMPOSITION DATA SHEET FOR _____ Sample Notes: _____

ay/Date: _____ JURISDICTION: _____

esidential Sample No.: _____ Truck Co./No.: _____

Recorded By: _____ Truck Type: _____

Waste Type: _____

Component	Cont. Tare	Gross Weights (lb) Tare					No Tare				Total
rrugated containers											
Mixed paper											
wspaper											
High grade ledger paper											
Other paper											
PE containers											
PET containers											
n plastics											
er plastics											
Refillable beverage											
Redemption Value											
Other recyclable											
Other non-recyclable											
minum cans											
Bi-metal cans											
F&B cans											
-ferrous/other aluminum											
White goods											
er metals											
d waste											
Food waste											
s/rubber products											
Wood wastes											
ultural crop residues											
ure											
Textiles/leather											
r organics											
solids											
HW											
r special wastes											

s on HHW:

_____

_____

_____

Misc. Notes:

_____

_____

_____

Table 3. Santa Clara North County Sampling Plan

Waste Source	Los Altos	Los Altos Hills	Cupertino	Unincorporated	Totals[1]	Self-H
Residential	10	10	10	10	40	(V u
Commercial	8	–	8	5	21	(V u
Industrial	6	6	6	6	24	(V u
Totals	24	16	24	21	85	

[1]The actual number of samples to be collected and sorted depends upon the actual arr al times of vehicles at the landfill. The total number of samples to be collected is estimat be in the range of 80 to 90.

Appendix B

ASTM Designation: DXXXX-XX

Draft Number 4: 1/24/90
D34.01.02 Waste Sampling
Author: G. Savage

METHOD FOR DETERMINATION OF THE COMPOSITION OF UNPROCESSED MUNICIPAL SOLID WASTE

1. Scope

1.1 The method describes the procedures for measuring the composition of unprocessed municipal solid waste (MSW) by employing manual sorting. The procedure applies to the determination of the mean composition of MSW based on the collection and manual sorting of a number of samples of waste over a selected period of time with a minimum of one week.

1.2 The procedures include those for collection of a representative sorting sample of unprocessed waste, manual sorting of the waste into individual waste components, data reduction, and reporting of results.

1.3 The method may be applied at landfill sites, waste processing and conversion facilities, and transfer stations.

2. Definitions

2.1 Sorting Sample: A 200 to 300 lb portion that is deemed to represent the characteristics of a vehicle load of MSW.

2.2 Unprocessed Municipal Solid Waste: Solid waste in its discarded form, i.e., waste that has not been size reduced or otherwise processed.

2.3 Waste Component: A category of solid waste composed of materials of similar physical properties and chemical composition, which is used to define the composition of solid waste, e.g., ferrous, glass, newsprint, yard waste, aluminum, etc.

2.4 Solid Waste Composition or Waste Composition: The characterization of solid waste as represented by a breakdown of the mixture into specified waste components on the basis of mass fraction or of weight percentage.

2.5 Composite Item: An object in the waste that is composed of multiple waste components or dissimilar materials, such as disposable diapers, bi-metal beverage containers, electrical conductor composed of metallic wire encased in plastic insulation, etc.

3. Summary of Methods

3.1 The number of samples to be sorted is calculated based upon statistical criteria selected by the investigators.

3.2 Vehicle loads of waste are designated for sampling, and a sorting sample is collected from the discharged vehicle load.

3.3 The sorting sample is manually sorted into waste components. weight fraction of each component in the sorting sample is calculate the weights of the components.

3.4 The mean waste composition is calculated using the results composition of each of the sorting samples.

4. Significance and Use

4.1 Waste composition information has wide application and can be used for such activities as solid waste planning, designing waste mana ment facilities, and establishing a reference waste composition for a baseline standard in facility contracts and in acceptance test pla

4.2 The method can be used to define and report the composition municipal solid waste through the selection and manual sorting of sar of waste. Care should be taken to consider the source and seasonal va tion of waste, where applicable.

4.3 After performing a waste composition analysis, laboratory ana ses may be performed on representative samples of waste components or tures of waste components for purposes related to the planning, manag ment, design, testing, and operation of resource recovery facilities.

5. Apparatus

5.1 Sufficient metal, plastic, or fiber containers for storing an weighing each waste component, labeled accordingly. For components th will have a substantial moisture content (e.g., food waste), metal o plastic containers are recommended to avoid absorption of moisture by container and, thus, the need for a substantial number of weighings to maintain an accurate tare weight for the container.

5.2 A mechanical or electronic weigh scale with a capacity of at least 200 lb, and a precision of at least 0.1 lb.

5.3 Heavy-duty tarps, shovels, rakes, push brooms, dust pans, hand brooms, magnets, sorting table, first aid kit, miscellaneous small too traffic cones, traffic vests, leather gloves, hardhats, safety glass and leather boots.

6. Precautions

6.1 Review the precautions and procedures with the operating and sorting personnel prior to the conduct of the field activities.

6.2 Sharp objects such as nails, razor blades, hypodermic needles. and pieces of glass are present in solid waste. Personnel should be instructed of this danger and to brush waste particles aside while so ing, as opposed to projecting their hands with force into the mixture Personnel handling and sorting solid waste should wear appropriate protection. Appropriate protection includes heavy leather gloves, hardhats, safety glasses, and safety boots.

6.3 During the process of unloading waste from collection vehicles and of handling waste with heavy equipment, projectiles may issue from the mass of waste. The projectiles can include flying glass particles from breaking glass containers and metal lids from plastic and metal containers that burst under pressure when run over by heavy equipment. The problem is particularly severe when the waste handling surface is of high compressive strength, e.g., concrete. Personnel should be made aware of the danger and wear eye and head protection if in the vicinity of the collection vehicle unloading point, or in the vicinity of heavy equipment, or both.

6.4 Select a location for discharge of designated loads, manual sorting activities, and weighing operation that is flat, level, and away from the normal waste handling and processing areas.

6.5 Weigh storage containers each day, or more frequently if necessary, in order to maintain an accounting of the tare weight.

7. Calibration

7.1 All weigh scale equipment shall be calibrated according to the manufacturer's instructions. Take appropriate corrective action if the readings are different than the calibration weights.

8. Procedures

8.1 Secure a flat and level area for discharge of the vehicle load. The surface should be swept clean or covered with a clean, durable tarp prior to discharge of the load.

8.2 Position the scale on a clean, flat, and level surface and adjust the level of the scale if necessary. Check the accuracy and operation of the scale with a known (i.e., reference) weight.

8.3 Weigh all empty storage containers and record the tare weights.

8.4 Determine the number of sorting samples to be sorted. The determination is a function of the waste components to be sorted and the desired precision as applied to each component. Weights of 200 to 300 lb for sorting samples of unprocessed solid waste are recommended. The number of samples is determined using the calculational method described in section 9.1.

8.5 A comprehensive list of waste components for sorting is shown in Table A. A description of some of the waste component categories is given in Table B. Other waste components can be defined and sorted depending upon the purpose of the waste composition determination. The list in Table A is comprised of those components most commonly used to define and report the composition of solid waste. At a minimum, it is recommended that the complement of left-justified categories in Table A be sorted. Therefore, similar breakdowns of solid waste composition are available for purposes of comparison, if desired. Label the storage containers accordingly.

TABLE A. List of Waste Component Categories

Mixed Paper	Other Organics
High Grade Paper	Ferrous
Computer Printout	Cans
Other Office Paper	Other Ferrous
Newsprint	Aluminum
Corrugated	Cans
Plastic	Foil
PET Bottles	Other Aluminum
HDPE Bottles	Glass
Film	Clear
Other Plastic	Brown
Yard Waste	Green
Food Waste	Other Inorganics
Wood	

TABLE B. Description of Some Waste Component Categories

Category	Description
Mixed Paper	Office paper, computer paper, magazines, glossy paper, waxed paper, other paper not fitting categories of "Newsprint" and "Corrugated"
Newsprint	Newspaper
Corrugated	Corrugated medium, corrugated boxes or cartons, brown (kraft) paper (i.e., corrugated) bags
Plastic	All plastics
Yard Waste	Branches, twigs, leaves, grass, other plant material
Food Waste	All food waste except bones
Wood	Lumber, wood products, pallets, furniture
Other Organics/ Combustibles	Textiles, rubber, leather, other primarily burnable materials not included in the above component categories
Ferrous	Iron, steel, tin cans, bi-metal cans
Aluminum	Aluminum, aluminum cans, aluminum foil
Glass	All glass
Other Inorganics/ Non-combustibles	Rock, sand, dirt, ceramics, plaster, non-ferrous non-aluminum metals (copper, brass, etc.), bones

8.6 Vehicles for sampling shall be selected at random during ea of the one-week sampling period, or so as to be representative of h waste stream as agreed to by the affected parties. With respect to selection of vehicles, any method is acceptable that does not introd bias into the selection. An acceptable method is use of a random u generator. For a weekly sampling period of k days, the number of e sampled each day shall be approximately n/k, where n is the total nu of vehicle loads to be selected for determination of waste composi i weekly period is defined to be 5 to 7 days.

8.7 Direct the designated vehicle containing the load of waste area secured for discharge of the load and collection of the sorti g sample.

8.8 Direct the vehicle operator to discharge the load onto th surface in one contiguous pile, i.e., to avoid gaps in the dischar e load. Collect any required information from the vehicle operator pr the vehicle leaving the discharge area.

8.9 Using mechanical equipment, remove material longitudinally one entire side of the discharged load, sufficient to form a mass of terial which, on a visual basis, is at least four times the desire of the sorting sample (i.e., about 1,000 lb). Mix, cone and quart material and select one quarter to be the sorting sample, using a ra method of selection or a sequence agreed to by all affected partie the purpose of eliminating or minimizing biasing of the sample. I oversize item (e.g., water heater) composes a large weight percentag the sorting sample, add a notation on the data sheet and weigh it, possible.

8.10 One sorting sample is selected from each collection vehicl that is designated for sampling. All handling and manipulation of discharged load, longitudinal sample, and sorting sample shall be c ducted on previously cleaned surfaces. If necessary, remove the sor sample to a secured manual sorting area. The sorting sample may b on a clean table for sorting for the convenience of the sorting pe The sorting area shall be a previously cleaned, flat, and level surf

8.11 Position the storage containers around the sorting sampl the sorting sample, empty all containers such as capped jars, pape and plastic bags of their contents. Segregate each waste item and p it in the appropriate storage container.

8.12 In the case of composite items found in the waste, separat individual materials where practical and place the individual mater into the appropriate storage containers. Where impractical, segre classify the composite item according to the following order:

8.12.1 If there are many identical composite items (e.g., pla sheathed aluminum electrical conductor), place them into the waste ponent containers corresponding to the materials present in the item in the approximate proportions according to the estimated mass frac each material in the item.

8.12.2 If there are only a few of the identical composite item, place them in the storage container corresponding to the material which comprises, on a weight basis, the majority of the item (e.g., place bi-metal beverage cans in the ferrous container).

8.12.3 If composite items represent substantial weight percentages of the sorting sample, a separate category should be established, e.g., composite roofing shingles.

8.12.4 If none of the above procedures is appropriate, place the item(s) (or proportion it (them)) in the storage container labeled "Other Non-Combustible" or "Other Combustible" as appropriate.

8.13 Sorting continues until the maximum particle size of the remaining waste particles is approximately 0.5 in. At this point, apportion the remaining particles into the storage containers corresponding to the waste components represented in the remaining mixture. The apportionment shall be accomplished by making a visual estimate of the mass fraction of waste components represented in the remaining mixture.

8.14 Record the gross weights of the storage containers and of any waste items sorted but not stored in containers. The data sheet shown in Fig. 1 can be used to record gross weights as well as tare weights.

8.15 After recording the gross weights, empty the storage containers and weigh them again, if appropriate. Re-weighing is important and necessary if the containers become moisture-laden, e.g., from wet waste.

8.16 Clean the sorting site as well as the load discharge area of all waste materials.

9. Calculations

9.1 Number of 200 to 300 lb samples.

9.1.1 The number of sorting samples (i.e., vehicle loads) (n) required to achieve a desired level of measurement precision is a function of the component(s) under consideration, and the confidence level. The governing equation for n is:

$$n = (t^* \, s/e \cdot \overline{x})^2 \qquad (1)$$

where t* is the student t statistic corresponding to the desired level of confidence, s is the estimated standard deviation, e is the desired level of precision, and $\overline{x}$ is the estimated mean.

All numerical values for the symbols are in decimal notation. For example, a value of precision (e) of 20% is represented as 0.2.

One sorting sample is chosen per vehicle load.

Waste Composition Data Sheet

Day/Date: _____
Site: _____
Weather: _____

Collection Company: _____
Vehicle Type: _____
Route No.: _____
Recorded by: _____

Component	Weight in Pounds			Percent of Total
	Gross	Tare		
Mixed Paper				
High Grade Paper				
Computer Printout				
Other Office Paper				
Newsprint				
Corrugated				
Plastic				
PET bottles				
HDPE bottles				
Film				
Other Plastic				
Food Waste				
Wood				
Other Organics				
Ferrous				
Cans				
Other Ferrous				
Aluminum				
Cans				
Foil				
Other Aluminum				
Glass				
Clear				
Brown				
Green				
Other Inorganics				
TOTALS				

NOTES: _____

Lab sample taken? Yes____ No____

Figure 1. Waste Composition Data Sheet

Suggested values of s and of $\overline{x}$ for waste components are listed in Table C. Values of t* are given in Table D for 90% and 95% levels of confidence, respectively.

9.1.2 Estimate the number of samples (n′) for the selected conditions (i.e., precision and level of confidence) and components using equation 1. For the purpose of estimation, select from Table D the t* value for $n = \infty$ for the selected level of confidence. Since the required number of samples will vary among the components for a given set of conditions, a compromise will be required in terms of selecting a sample size, i.e., the number of samples that will be sorted. The component that is chosen to govern the precision of the composition measurement (and therefore the number of samples required for sorting) is termed the "governing component" for the purpose of this method.

9.1.3 After determining the governing component and its corresponding number of samples (n_0), return to Table D and select the student t statistic (t^*_0) corresponding to n_0. Recalculate the number of samples, i.e., n′, using t^*_0.

9.1.4 Compare n_0 to the new estimate of n, i.e., n′, which was calculated for the governing component. If the values differ by more than 10%, repeat the calculations of 9.1.2 and 9.1.3.

9.1.5 If the values are within 10%, select the larger value as the number of samples to be sorted. Refer to Appendix A for a sample calculation of n.

9.2 Component Composition

9.2.1 The component composition of solid waste is reported on the basis of the mass fraction (expressed as a decimal) or percentage of waste component i in the solid waste mixture. The reporting is on the basis of wet weight, i.e., the weight of materials immediately after sorting.

9.2.2 The mass fraction of component i, mf_i, is defined and computed as:

$$mf_i = \frac{w_i}{\sum_{i=1}^{j} w_i} \qquad (2)$$

where w_i is the weight of component i and j is the number of waste components. In those cases where a container is used to store and weigh the materials:

$$w_i = \text{gross weight} - \text{tare weight of container} \qquad (3)$$

TABLE C. Values of Mean ($\bar{x}$) and of Standard Deviation (s) for Within Week Sampling to Determine MSW Component Composition[A]

Component	Standard Deviation (s)	Mean ($\bar{x}$)
Mixed Paper	0.05	0.22
Newsprint	0.07	0.10
Corrugated	0.06	0.14
Plastic	0.03	0.09
Yard Waste	0.14	0.04
Food Waste	0.03	0.10
Wood	0.06	0.06
Other Organics	0.06	0.05
Ferrous	0.03	0.05
Aluminum	0.004	0.01
Glass	0.05	0.08
Other Inorganics	0.03	0.06
		1.00

A) The tabulated mean values and standard deviations are estimates b on field test data reported for municipal solid waste sampled dur weekly sampling periods at several locations around the U.S.

TABLE D. Values of t Statistics (t*) as a Function of Number of Samples and Confidence Interval

No. of Samples (n)	90%	95%
2	6.314	12.706
3	2.920	4.303
4	2.353	3.182
5	2.132	2.776
6	2.015	2.571
7	1.943	2.447
8	1.895	2.365
9	1.860	2.306
10	1.833	2.262
11	1.812	2.228
12	1.796	2.201
13	1.782	2.179
14	1.771	2.160
15	1.761	2.145
16	1.753	2.131
17	1.746	2.120
18	1.740	2.110
19	1.734	2.101
20	1.729	2.093
21	1.725	2.086
22	1.721	2.080
23	1.717	2.074
24	1.714	2.069
25	1.711	2.064
26	1.708	2.060
27	1.706	2.056
28	1.703	2.052
29	1.701	2.048
30	1.699	2.045
31	1.697	2.042
36	1.690	2.030
41	1.684	2.021
46	1.679	2.014
51	1.676	2.009
61	1.671	2.000
71	1.667	1.994
81	1.664	1.990
91	1.662	1.987
101	1.660	1.984
121	1.658	1.980
141	1.656	1.977
161	1.654	1.975
189	1.653	1.973
201	1.653	1.972
∞	1.645	1.960

9.2.3 The percentage of component i, P_i, is defined and computed as:

$$P_i = mf_i \times 100$$

9.2.4 For the data analysis to be correct, the denominator of equation (2) must be unity and,

$$\sum_{i=1}^{j} P_i = 100$$

9.3 The mean component composition for the one-week period is lated using the component composition results from each of the anal samples. The mean mass fraction of component i, $\overline{mf_i}$, is calculated a

$$\overline{mf_i} = \frac{1}{n} \sum_{k=1}^{n} (mf_i)_k$$

and the mean percentage of component i, $\overline{P_i}$, is calculated as,

$$\overline{P_i} = \frac{1}{n} \sum_{k=1}^{n} (P_i)_k$$

where n is the number of samples.

APPENDIX A. ESTIMATE OF NUMBER OF SAMPLES FOR ANALYSIS

ASSUMPTIONS

1. Corrugated is selected as the governing component
2. A 90% confidence level is selected
3. A precision of 10% is desired

Therefore:

$s = 0.06$ (from Table C)
$\overline{x} = 0.14$ (from Table C)
$e = 0.10$
$t^* (n = \infty) = 1.645$ (from Table D)

Using equation 1:

$$n = [t^* \, s/(e \cdot \overline{x})]^2$$

$$= \left[\frac{1.645 \ (0.06)}{0.1 \ (0.14)} \right]^2$$

$$= 50$$

$$= n_o$$

Referring again to Table D, for $n = 50$

$t^*_{90} \ (n = 50) = 1.677$

and,

$$n = \left[\frac{1.677 \ (0.06)}{0.1 \ (0.14)} \right]^2$$

$$= 52$$

$$= n'$$

Since 52 (i.e., n') is within 10% of 50 (i.e., n_o), 52 samples should be selected for analysis.

GUIDE TO USE OF WASTE DIVERSION DATA

A focused waste diversion study was undertaken in January and February, 1991 that targeted materials brokers and end users in the County. Types of businesses targeted in the survey included recycling collectors, materials brokers, end users of secondary materials, and outlets for local secondary materials markets.

Following data interpretation and reduction, the results of the surveys were summarized on a city-by-city basis in Tables 1 through 4. These tables are as follows:

Table 1:	Residential Diversion Quantities (1 table for each city)
Table 2:	Commercial/Industrial Diversion Quantities (1 table for each city)
Table 3:	Summary of Santa Clara County Residential Diversion Quantities
Table 4:	Summary of Santa Clara County Commercial/ Industrial Diversion Quantities

This section summarizes (1) limitations of the data, (2) recommendations for obtaining additional diversion data, and (3) the manner in which the data can be used to calculate the diversion rate.

Notes Regarding the Tables

The following should be noted in reviewing the data presented in Tables 1 through 4:

1. Some data were reported for whole regions of the County. Where this occurred, the data were apportioned based

upon the population ratio of those areas for which the data was reported.

2. Industrial wastes are included in the table with commercial (except where broken out specifically) because collectors do not distinguish by source in their records.

3. Apartment recycling is generally not reported separate from residential recycling. However, because of the different type of collection system, a column is provided for separate reporting. One advantage of keeping separate accounting for this material is that a separate public education program is often designed for apartment dwellers, and this accounting would enable tracking of the success of such a program.

4. The data for landfill salvaging were placed in the commercial table. The suppliers of the data were not able to separate it out by source because of the nature of the operation.

5. Data on glass tonnages from some cities were reported as commingled. According to the Department of Conservation (DOC), as of March 1, commingled glass coming from curbside programs is assumed to contain 60 percent California redemption value glass, whereas commingled glass from a certified redemption center is assumed to contain 75 percent. This percentage is based on a recent survey for DOC and thus used for this study.

6. The results for tires show quantities recycled and transformed. Some tires are sent to Mexico to be recapped. Of the quantity of tires sent to transformation, 25 percent are recovered as casings and used tires before being transformed into electricity. Of the 75 percent transformed, 25 percent is recovered as by-products: gypsum, zinc, and steel. Thus, the data reported were apportioned in this manner.

Additional City-Specific Considerations

The County contracted with EMCON to survey recyclers only; surveying businesses in each city, although time consuming and expensive, would provide a more complete picture of the recycling and source reduction activities occurring in each jurisdiction for future planning and tracking. This method was chosen by four cities in the County with independent contracts: Milpitas, Santa Clara, Sunnyvale, and Palo Alto. Other cities may wish to survey businesses as a means of obtaining a baseline with which to compare diversion in future years. However, the results of such a survey can not be simply added to the diversion totals in this report because of the likelihood of double-counting quantities of some materials.

A focused survey of businesses may be worth considering. For example, a city may wish to survey the 30 largest waste generators in its jurisdiction for diversion information for specific commodities, such as paper and scrap metal, for inclusion in the diversion study. The quantities reported for these materials in Tables 1 through 4 are lower than the actual recycling rate, since few paper and scrap metal brokers were willing to provide data.

EMCON documented the use of reusable diapers as the only source reduction activity for the city. The city can survey residents and businesses regarding additional source reduction activities for inclusion in the waste diversion study.

Use of Diversion Data in Calculating Diversion Rate

The quantities of materials diverted by waste type, which is required as part of the Source Reduction and Recycling Element (SRRE), can be calculated as a percent diversion by the following method, once the disposal quantities are known. See Attachment 5 for an example of how to summarize the disposal and diversion information to determine the diversion rate. The steps are as follows:

- calculate the tons/year disposed by waste type and waste generator
- tally these quantities by waste type
- in a separate column, tally the quantity of waste diverted for each waste type

- add up the quantities disposed and diverted to determine the total quantity in tons/year generated by waste type (disposed + diverted = total generated)
- divide the quantity recycled and source reduced by the total generated to determine the diversion rate [(recycling + source reduction)/total generated = diversion rate percent]

Survey sent to recyclers

County of Santa Clara
Department of Planning and Development
Office of Toxics and Solid Waste Management

1735 North First Street, Suite 275
San Jose, California 95112
Toxics (408) 441-1195
Solid Waste (408) 441-1198

January 25, 1991

Recycling Survey

Dear Santa Clara County Recycler:

The County of Santa Clara needs your help in providing information on the amount of solid waste (garbage) being recycled or reduced within the County limits.

As you may already know, under AB 939, a waste management law adopted in 1989, all cities and counties in the State of California are required to document the type and quantity of waste materials that are being generated, diverted, or reduced in any way. The County of Santa Clara and each of its cities must submit this information in a report that describes how the County and the cities will recycle 25 percent of their waste by 1995 and 50 percent by the year 2000. The maximum fine to counties and cities for failure to comply is $10,000 per day.

To help us determine the amount of commercial and industrial wastes currently being recycled or otherwise diverted from landfills in the County, please complete the enclosed survey, copy and complete a Material Report Form on the reverse side for the unincorporated county and cities you serve, and return them in the enclosed envelope by February 8 to the County's consultant, EMCON Associates, 1921 Ringwood Avenue, San Jose, CA 95131-9961.

The information you provide will be kept confidential. Only aggregate information will be reported to the County. Enclosed is a formal Confidentiality Agreement. If you choose to use this agreement, please enclose it with your completed survey.

Thank you very much for your response to this request. If you have questions about the survey, please contact Katherine Dever of EMCON at 408/453-7300. If you have questions about this project, or wish to discuss it further, please call me at 408/441-1198.

Sincerely,

Margaret J. Rands, Solid Waste Program Manager

Enclosures

Board of Supervisors: Michael M. Honda, Zoe Lofgren, Ron Gonzales, Rod Diridon, Dianne McKenna
County Executive: Sally R. Reed

COUNTY OF SANTA CLARA RECYCLING SURVEY

to

Recycling Collectors and Brokers
operating within or receiving materials from within
the County of Santa Clara

The information in this survey will be kept confidential and will be used to prepare a report for the County of Santa Clara and the incorporated cities in the County to comply with the California Integrated Waste Management Act of 1989.

COMPANY NAME:_____

ADDRESS:_____

_____TELEPHONE:_____

CONTACT PERSON:_____TITLE:_____

TYPE OF BUSINESS: (Please check all that apply.)

_____Collector/Hauler
_____Dealer/Packer
_____Convenience Zone Redemption Center
_____Buy-Back Center
_____Donation Center
_____Non-profit Organization
_____Commercial Composter
_____News Bin Operator
_____Broker
_____End market/Manufacturer
_____Scrap Metal Dealer
_____Auto Wrecker
_____Asphalt/Concrete Recycler
_____Demolition Debris Recycler
_____Wood Waste Chipper
_____Confidential Paper Service
_____Other Commercial Recycler (Specify)_____
_____Special Waste Recycler (See listing below; specify)_____

When completed, please return this survey in the enclosed postpaid envelope to:
Katherine Dever, EMCON Associates, 1921 Ringwood Avenue, San Jose, California 95131.
If you have questions regarding this survey, call Ms. Dever at 408/453-7300.

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1. On the following page, please include the TOTAL TONS of MATERIAL COLLECTED, BY TYPE, for a recent twelve month period from an aggregate of accounts WITHIN THE COUNTY OF SANTA CLARA, by unincorporated area and city jurisdiction only, not from other sources.

   Twelve month period used is from_____ to _____

2a. Anticipated <u>increase</u> in recycling tonnage for 1991:_____% or

2b. Anticipated <u>decrease</u> in recycling tonnage for 1991:_____%

3. Amount of residue:_____% of total amount collected which is not recyclable and is discarded.

Recycling Material Report Form

CITY_____

Please indicate SOURCE of the material (give % if more than one source) Residents, Commercial Businesses, Industry, or Other.

Materials Collected	Total Tons Received (by City)	Source	Purchaser (if not end user)
PAPER			
Corrugated cardboard			
Mixed paper			
Newspaper			
High grade ledger			
Other paper (specify)			
PLASTICS			
HDPE containers			
PET containers			
Film plastics			
Laser toner cartridges			
Other plastics			
GLASS			
Refillable glass beverage containers			
CA Redemption Value glass			
Other recyclable glass			
METALS			
Aluminum cans			
Bi-metal containers			
Ferrous metals and tin cans			
Non-ferrous metals plus al scrap			
White goods (appliances, etc.)			
YARD WASTE			
including leaves, grass and prunings			
OTHER ORGANICS			
Food waste			
Tires and rubber products			
Wood waste, incl. pallets			
Agricultural crop residues			
Manure			
Textiles and leather			
INERT SOLIDS			
Rock, concrete, brick			
Sand, soil, or dirt			
SPECIAL WASTES			
Ash			
Industrial sludge			
Auto shredder waste			
Batteries			
Oil			
Other (specify)			

Survey sent to cities

February 1, 1991

Dear

The Santa Clara County Solid Waste Program needs your help in collecting information on the amount of solid waste (garbage) being recycled, reduced or composted in your city.

This information will be used in preparing the Countywide Solid Waste Diversion Study, which is part of our Countywide AB 939 Implementation Project. This Study will determine the total amount currently diverted from landfill disposal, producing both a countywide total and totals for each jurisdiction (15 cities and the County).

To help us determine the amount of solid waste currently being diverted from landfills in the County and the identity of the purchaser of those materials that are being diverted, please fill out the enclosed tables (instructions are provided) and return them in the enclosed envelope by February 12 to the County's consultant, EMCON Associates, 1921 Ringwood Avenue, San Jose, CA 95131-9961.

The information you provide will be kept confidential. Only aggregate information will be reported to the County. Each city will receive a copy of the completed diversion study.

Thank you very much for your response to this request. If you have questions about the survey, please contact Katherine Dever of EMCON at 408/453-7300.

Sincerely,

Margaret J. Rands, Solid Waste Program Manager

Enclosures

INSTRUCTIONS FOR FILLING OUT TABLES

Enclosed are the following tables:

- Table 1 Residential Diversion Programs (Tons/Year)
- Table 2 Residential Diversion Programs (Purchaser)
- Table 3 Commercial Diversion Programs (Tons/Year)
- Table 4 Commercial Diversion Programs (Purchaser)
- Table 5 Industrial Diversion Programs (Tons/Year)
- Table 6 Industrial Diversion Programs (Purchaser)
- Sample Form 1 Residential Diversion Programs (Tons/Year)
- Sample Form 2 Residential Diversion Programs (Purchaser)

Sample Forms 1 and 2 are provided as examples of the format to use when filling out the tables.

TABLE 1

1.) List all residential diversion programs in your city across the top row.

2.) Report quantities of materials diverted from the residential waste stream through these programs in the corresponding box. Report quantities in tons per year.

3.) Sum the quantity of materials diverted by each program and report a total at the bottom of the column.

4.) Sum the quantity of each material diverted from all the programs and report a total in the last column.

TABLE 2

1.) List all residential diversion programs in your city across the top row.

2.) Report the purchaser of the material that is being diverted from the residential waste stream in the corresponding box. For example, if ABC Aluminum is purchasing aluminum cans from your curbside program, report

ABC Aluminum in the box under the heading "curbside" and in the row "aluminum cans".

TABLES 3, 4, 5 & 6

1.) Fill out Tables 3 and 5 as you did Table 1, except list commercial and industrial diversion programs in your city.

2.) Fill out Tables 4 and 6 as you did Table 2, except list commercial and industrial diversion programs in your city.

Sample Form 1. R JENTIAL DIVERSION PROGRAMS
(Tons/Year)

	Curbside	20/20	Apartment Recycler	Other Recycling Drop-off Programs	Composting	Source Reduction Programs	Total
PAPER							
corrugated containers							
newspaper	1000						
high grade ledger paper			20	200			1220
mixed paper							
other paper							
PLASTICS							
HDPE containers							
PET containers		2					2
film plastics							
other plastics							
GLASS							
refillable bev. containers							
CA Redemption Value	300	50	10	100			460
other recyclable glass	300						300
other non-recyclable glass							
METALS							
aluminum cans	50	10	2				62
bi-metal containers							
tin cans	40						40
other ferrous	100						100
other aluminum							
other non-ferrous							
white goods							
YARD WASTE							
leaves, grass					800		800
brush, branches					300		300
OTHER ORGANICS							
food waste							
tires/rubber						50	50
wood wastes							
agricultural crop residues							
manure							
textiles/leather							
diapers							
other misc. organics							
OTHER WASTES							
inert solids							
hazardous waste							
SPECIAL WASTES							
ash							
sewage sludge							
industrial sludge							
asbestos							
auto shredder waste							
auto bodies							
other special waste							
TOTAL	1790	62	32	300	1100	50	3334

Sample Form 2. RESIDE^''TIAL DIVERSION PROGRAMS
urchaser)

	Curbside					
PAPER						
corrugated containers						
newspaper						
high grade ledger paper						
mixed paper						
other paper						
PLASTICS						
HDPE containers						
PET containers						
film plastics						
other plastics						
GLASS						
refillable bev. containers						
CA Redemption Value						
other recyclable glass						
other non-recyclable glass						
METALS						
aluminum cans	ABC aluminum					
bi-metal containers						
tin cans						
other ferrous						
other aluminum						
other non-ferrous						
white goods						
YARD WASTE						
leaves, grass						
brush, branches						
OTHER ORGANICS						
food waste						
tires/rubber						
wood wastes						
agricultural crop residues						
manure						
textiles/leather						
diapers						
other misc. organics						
OTHER WASTES						
inert solids						
hazardous waste						
SPECIAL WASTES						
ash						
sewage sludge						
industrial sludge						
asbestos						
auto shredder waste						
auto bodies						
other special waste						

Table 1. RESIDENTIAL DIVERSION PROGRAMS
(Tons/Year)

							Total
PAPER							
corrugated containers							
newspaper							
high grade ledger paper							
mixed paper							
other paper							
PLASTICS							
HDPE containers							
PET containers							
film plastics							
other plastics							
GLASS							
refillable bev. containers							
CA Redemption Value							
other recyclable glass							
other non-recyclable glass							
METALS							
aluminum cans							
bi-metal containers							
tin cans							
other ferrous							
other aluminum							
other non-ferrous							
white goods							
YARD WASTE							
leaves, grass							
brush, branches							
OTHER ORGANICS							
food waste							
tires/rubber							
wood wastes							
agricultural crop residues							
manure							
textiles/leather							
diapers							
other misc. organics							
OTHER WASTES							
inert solids							
hazardous waste							
SPECIAL WASTES							
ash							
sewage sludge							
industrial sludge							
asbestos							
auto shredder waste							
auto bodies							
other special waste							
TOTAL							

Table 2. RESIDENTIAL ' ERSION PROGRAMS
(Purc. .er)

PAPER						
corrugated containers						
newspaper						
high grade ledger paper						
mixed paper						
other paper						
PLASTICS						
HDPE containers						
PET containers						
film plastics						
other plastics						
GLASS						
refillable bev. containers						
CA Redemption Value						
other recyclable glass						
other non-recyclable glass						
METALS						
aluminum cans						
bi-metal containers						
tin cans						
other ferrous						
other aluminum						
other non-ferrous						
white goods						
YARD WASTE						
leaves, grass						
brush, branches						
OTHER ORGANICS						
food waste						
tires/rubber						
wood wastes						
agricultural crop residues						
manure						
textiles/leather						
diapers						
other misc. organics						
OTHER WASTES						
inert solids						
hazardous waste						
SPECIAL WASTES						
ash						
sewage sludge						
industrial sludge						
asbestos						
auto shredder waste						
auto bodies						
other special waste						

Table 3. COMMERCIA VERSION PROGRAMS
(Tons/Year)

							Total
PAPER							
corrugated containers							
newspaper							
high grade ledger paper							
mixed paper							
other paper							
PLASTICS							
HDPE containers							
PET containers							
film plastics							
other plastics							
GLASS							
refillable bev. containers							
CA Redemption Value							
other recyclable glass							
other non-recyclable glass							
METALS							
aluminum cans							
bi-metal containers							
tin cans							
other ferrous							
other aluminum							
other non-ferrous							
white goods							
YARD WASTE							
leaves, grass							
brush, branches							
OTHER ORGANICS							
food waste							
tires/rubber							
wood wastes							
agricultural crop residues							
manure							
textiles/leather							
diapers							
other misc. organics							
OTHER WASTES							
inert solids							
hazardous waste							
SPECIAL WASTES							
ash							
sewage sludge							
industrial sludge							
asbestos							
auto shredder waste							
auto bodies							
other special waste							
TOTAL							

Table 4. COMMERCIAL DI `SION PROGRAMS
(Purcha..r)

PAPER						
corrugated containers						
newspaper						
high grade ledger paper						
mixed paper						
other paper						
PLASTICS						
HDPE containers						
PET containers						
film plastics						
other plastics						
GLASS						
refillable bev. containers						
CA Redemption Value						
other recyclable glass						
other non-recyclable glass						
METALS						
aluminum cans						
bi-metal containers						
tin cans						
other ferrous						
other aluminum						
other non-ferrous						
white goods						
YARD WASTE						
leaves, grass						
brush, branches						
OTHER ORGANICS						
food waste						
tires/rubber						
wood wastes						
agricultural crop residues						
manure						
textiles/leather						
diapers						
other misc. organics						
OTHER WASTES						
inert solids						
hazardous waste						
SPECIAL WASTES						
ash						
sewage sludge						
industrial sludge						
asbestos						
auto shredder waste						
auto bodies						
other special waste						

Table 5. INDUSTRIAL /ERSION PROGRAMS
(Tons/Year)

							Total
PAPER							
corrugated containers							
newspaper							
high grade ledger paper							
mixed paper							
other paper							
PLASTICS							
HDPE containers							
PET containers							
film plastics							
other plastics							
GLASS							
refillable bev. containers							
CA Redemption Value							
other recyclable glass							
other non-recyclable glass							
METALS							
aluminum cans							
bi-metal containers							
tin cans							
other ferrous							
other aluminum							
other non-ferrous							
white goods							
YARD WASTE							
leaves, grass							
brush, branches							
OTHER ORGANICS							
food waste							
tires/rubber							
wood wastes							
agricultural crop residues							
manure							
textiles/leather							
diapers							
other misc. organics							
OTHER WASTES							
inert solids							
hazardous waste							
SPECIAL WASTES							
ash							
sewage sludge							
industrial sludge							
asbestos							
auto shredder waste							
auto bodies							
other special waste							
TOTAL							

Table 6. INDUSTRIAL DIVERSION PROGRAMS
(Purchaser)

PAPER						
corrugated containers						
newspaper						
high grade ledger paper						
mixed paper						
other paper						
PLASTICS						
HDPE containers						
PET containers						
film plastics						
other plastics						
GLASS						
refillable bev. containers						
CA Redemption Value						
other recyclable glass						
other non-recyclable glass						
METALS						
aluminum cans						
bi-metal containers						
tin cans						
other ferrous						
other aluminum						
other non-ferrous						
white goods						
YARD WASTE						
leaves, grass						
brush, branches						
OTHER ORGANICS						
food waste						
tires/rubber						
wood wastes						
agricultural crop residues						
manure						
textiles/leather						
diapers						
other misc. organics						
OTHER WASTES						
inert solids						
hazardous waste						
SPECIAL WASTES						
ash						
sewage sludge						
industrial sludge						
asbestos						
auto shredder waste						
auto bodies						
other special waste						

Figure 4: Sample Weight to Volume Conversion Factors for Recyclables

Material	Volume	Weight in Pounds
Newsprint, Loose	one cubic yard	360 - 800
Newsprint,compacted	one cubic yard	720 - 1,000
Newsprint	12" stack	35
Corrugated cardboard, loose	one cubic yard	300
Corrugated cardboard, baled	one cubic yard	1000 - 1200
Glass, whole bottles	one cubic yard	600 - 1,000
Glass, semi crushed	one cubic yard	1,000 - 1,800
Glass, crushed (mechanically)	one cubic yard	800 - 2700
Glass, whole bottles	one full grocery bag	16
Glass, uncrushed to manually broken	55 Gallon Drum	125 - 500
PET soda bottles, whole, loose	one cubic yard	30 - 40
PET soda bottles, whole, loose	gaylord	40 - 53
PET soda bottles, baled	30" x 48" x 60"	500
PET soda bottles, granulated	gaylord*	700 - 750
PET soda bottles, granulated	semi-load	30,000
Film, baled	30" x 42" x 48"	1,100
Film, baled	semi-load	44,000
HPDE (dairy only), whole, loose	one cubic yard	24
HPDE (dairy only), baled	30" x 48 x 60"	500-800
HPDE (mixed), baled	30" x 48 x 60"	600-900
HPDE (mixed), granulated	gaylord	800 - 1,000
HPDE (mixed), granulated	semi-load	42,000
Mixed PET & Dairy, whole, loose	one cubic yard	average 32
Mixed PET, Dairy and other rigid, whole, loose	one cubic yard	average 38
Mixed rigid, no film or Dairy, whole loose	one cubic yard	average 49
Mixed rigid, no film, granulated	gaylord	500 - 1,000
Mixed rigid & film, densified by mixed plastic mold technology	one cubic foot	average 60
Aluminum cans, whole	one cubic yard	50 - 74
Aluminum cans, whole	1 one full kraft paper grocery bag	average 1.5
Aluminum cans	one 55 gal plastic bag	13 - 20

* Gaylord size most commonly used 40" x 48" x 36"

Figure 4: Sample Weight to Volume Conversion Factors for Recyclables

Material	Volume	Weight in Pounds
Ferrous cans, whole	one cubic yard	150
Ferrous cans, flattened	one cubic yard	850
Leaves, uncompacted[8]	one cubic yard	250 - 500
Leaves, compacted	one cubic yard	320 - 450
Leaves, vacuumed	one cubic yard	350
Wood chips	one cubic yard	500
Grass clippings	one cubic yard	400 - 1500
Used Motor Oil	one gallon	7
Tire - Passenger Car	one	12
Tire - Truck	one	60
Food Waste, solid and liquid fats	55 gallon drum	412

VI. Conclusion

"Standard" is defined as "something considered by an authority or by general consent as a basis of comparison; an approved model; a rule or a principle that is used as a basis for judgement ...." [9]

While we believe that the recommendations presented here represent the best possible way of reporting and using data, we realize that complete agreement on every individual point isn't necessary for this work to serve as a "standard." Even where there may be disagreement about the application of a particular term or formula, the difference is made clearer by having a standard against which to contrast the alternative. The NRC offers these definitions, reporting guidelines, and calculation methods in that sense of the term: to serve as a common point of departure.

These concepts will have the best utility if indeed they do achieve widespread adoption, that is, if we all indeed begin to "speak the same language." To accomplish this, your participation is greatly needed to encourage the widespread testing and adoption of the NRC's National Measurement

Standards and Reporting Guidelines. Your reports of experience in applying these concepts in your programs, and your comments and criticism on this document, are invited and will be appreciated, for the preparation of future updates.

VII. Notes

[1] "The National Policy on Recycling" was adopted by the National Recycling Coalition at its Fifth Annual Recycling Congress in Seattle Washington, in November of 1986. Copies of this brochure are available from the NRC.

[2] At the 1989 Membership Meeting, and in workshops held during the 1989 Congress, consensus could not be reached on these terms because some members expressed the opinion that a definition for integrated waste management must also include a specified hierarchy of priorities for waste management options, whereas others argued that this should be left unspecified. Furthermore, consensus could not be reached in defining the waste management hierarchy, because of lack of agreement regarding the ranking of incineration with energy recovery versus landfilling. These comments were consistent with other comments previously received throughout several drafts of the Standards document. Unchallenged was this portion of the definition:

> "The waste management hierarchy is the prioritization of waste management strategies as follows: 1. Decreasing the generation of waste through source reduction, and 2. Decreasing disposal by maximizing materials recovery. "

[3] The Glossary of Recycling Terms and Acronyms, contains more than 300 terms and is available for $5 from Resource Recycling, P.O. Box 10540, Portland, Oregon 97210; 503-227-1319

[4] This description is a direct paraphrase of comments provided by the Glass Packaging Institute.

[5] This is a direct paraphrase of commentary provided by Resource Integration Systems/Resource Conservation Consultants.

[6] A detailed methodology for deriving current recycling rates has been developed by Gilmore Research Group and The Matrix Management Group

Attachment 5 - Example of Diversion Rates by Material

(TONS, 1990)

	DISPOSED (a)	DIVERTED (b) Recycling	DIVERTED (b) Source Reduction	TOTAL GENERATED (c)	DIVERSION RATE (b/c) (percent)
PAPER (total)	22,145			30,114	
OCC/Kraft	4,722	4067	0	8,789	46
Magazines	1,028	0	0	1,028	0
Mixed Paper	7,349	0	0	7,349	0
Newsprint	4,006	3261	0	7,267	45
High Grade	804	641	0	1,445	44
Other Paper	4,235	0	0	4,235	0
PLASTICS (total)	6,263			6,315	
HDPE	1,260	0	0	1,260	0
PET	553	52	0	605	9
Film	2,101	0	0	2,101	0
Polystyrene Foam	332	0	0	332	0
Other Plastic	2,016	0	0	2,016	0
GLASS (total)	3,277			5,021	
Refillable Beverage	0	0	0	0	0
CA Redemption Value	477	1744	0	2,221	79
Other Recyclable	2,097	0	0	2,097	0
Other Non-Recyclable	703	0	0	703	0
METALS (total)	3,921			4,835	
Aluminum Cans	221	797	0	1,018	78
Other Aluminum	328	0	0	328	0
Bi-metal Cans	0	0	0	0	0
Steel Food & Bev. Cans	1,478	0	0	1,478	0
Other Ferrous	1,881	117	0	1,998	6
Other Non-ferrous	13	0	0	13	0
White Goods	0	0	0	0	0
YARD WASTE (total)	2,165			2,165	
Leaves and Grass	1,937	0	0	1,937	0
Branches and Brush	228	0	0	228	0
OTHER ORGANICS (total)	18,735			18,746	
Food	10,992	0	0	10,992	0
Rubber/Tires	422	0	0	422	0
Wood	1,126	0	0	1,126	0
Agri. Crop Residue	0	0	0	0	0
Manure	0	0	0	0	0
Textiles/Leather	1,845	8	0	1,853	0
Diapers	3,552	0	3	3,555	0
Other Organics	798	0	0	798	0
OTHER WASTES (total)	1,602			1,602	
Inert Solids	1,441	0	0	1,441	0
HHW	161	0	0	161	0
Appliances	0	0	0	0	0
SPECIAL WASTES (total)	0			0	
Ash	0	0	0	0	0
Sewage Sludge	0	0	0	0	0
Industrial Sludge	0	0	0	0	0
Asbestos	0	0	0	0	0
Auto Shredder Waste	0	0	0	0	0
Auto Bodies	0	0	0	0	0
Stuffed Furn./Mattresses	0	0	0	0	0
TOTAL	58,107	10,687	3	68,797	16

Los Altos Town Crier 8/21/91

Los Altos Garbage calls on all Los Altans to recycle

New bins make it easy for residents to reduce waste

By Jean Newton

Los Altans will get a special delivery within the next few weeks and the opportunity to participate in a program that could make a difference environmentally for generations to come.

Los Altos Garbage Company (LAGCO) is dropping off more than 9,000 green recycling bins to encourage residents to join a new "co-mingling" recycling program.

According to Los Altos Garbage Company General Manager Jonathan M. Angin, more than 60 percent of Los Altans currently recycle. "But we'd like to have a 100 percent participation rate so we want to make it as simple as possible for people to join our recycling program," Angin said.

The sturdy green bins, made of recycled plastic, replace burlap bags that residents have been using to separate cans and bottles before placing them curbside. With the new co-mingling system, residents can place aluminum, glass and PET plastics all in the same container. The recyclable materials will be sorted later on a conveyor system. Residents should still bag or bundle newspapers separately. Angin thinks the bins will become a visible reminder to residents.

"If you go down the street on your recycling day and you see your neighbors using the green containers you may be more likely to join in," Angin said.

The burlap bags were not visible and didn't last very long. It was also difficult for Los Altos Garbage drivers to determine whether there were non-recyclable items that would contaminate the load, Angin said. "We think the bins will be easier for everyone."

> 'It's necessary for every single citizen to recycle if we are to preserve our natural resources and save valuable landfill space.'
> *Jonathan Angin*

Angin said the Los Altos Garbage Company absorbed the initial capital costs to purchase the containers because the bins will help streamline operations.

"Residents are not paying for the new recycling bins," Angin said. "We absorbed the cost because we're doing our part to help the cities reach the waste stream reduction goals mandated by Assembly Bill 939." Using the containers will also help Los Altos Garbage operationally because

AB 939 mandates that cities must reduce waste stream levels by 25 percent by 1995 and 50 percent by the year 2000. If a city doesn't meet that goal, the state will levy a $10,000 a day fine, which Angin said will likely translate into higher garbage rates for cities that don't meet the goal.

Daphne Siegert, city of Los Altos community programs coordinator, said the city is working closely with Los Altos Garbage Company to find ways to meet AB 939 goals. "We're only reducing approximately 10 percent of our solid waste right now and that means we have to find a way to reduce 15 percent more of what is now going to landfill."

Siegert said some people recycle on their own so the city has no way of knowing what the exact recycling percentage is in Los Altos.

Los Altans who participate in the curbside recycling program help the city meet the state mandated goals.

"Los Altos is a very forward-thinking, environmentally aware community," Angin said.

The city also wants to implement a yard waste to composting program. Research shows that yard waste from residents makes up 29 percent of the waste stream level, Siegert said.

Siegert thinks the city will meet waste stream reduction levels by adding to or enhancing existing programs and cited the commercial cardboard recycling program as an example. Los Altos businesses are now recycling corrugated cardboard in one of the first such programs in Santa Clara County.

"Sometimes people don't

Please turn to page 5

Charles Hollock

Los Altan Don Dolan reads his recycling instruction pamphlet as he picks up his newly-delivered recycle box, courtesy of Los Altos Garbage Company.

Charles Hollock

Every Los Altan will receive a bin for recyclable cans and bottles. Los Altos Garbage Company is delivering the free sturdy bins, made of recycled plastic.

Charles Hollock

Cities must reduce the amount of waste sent to landfills by 25 percent by the year 1995 and 50 percent by the year 2000.

LA TOWN CRIER 8/21/91
CONTINUED

Charles Holleck

To comply with state-mandated recycling goals, Los Altos Garbage Company asks each resident to place recyclable bottles and aluminum cans into the new green bins. Residents should continue to separate newspapers into brown paper bags.

How to recycle

Put all metal, aluminum, glass and PET plastics together into the green recycling bin. Bundle or bag newspapers separately. Place recyclables out for curbside pickup by 6 a.m. on every other week of your regularly scheduled garbage pickup day.

Look at the calendar on the side of the bin to determine your recycling schedule. The dates highlighted in red designate your recycling week. Your recycling day is the same day as your garbage pickup during that week.

LAGCO will accept the following materials:

- ❑ All metal food and beverage containers made of aluminum, tin, steel and bi-metal
- ❑ All glass bottles and jars with lids removed
- ❑ PET plastics containers
- ❑ Newspaper
- ❑ White paper
- ❑ Advertising inserts
- ❑ Paper bags
- ❑ Stationery
- ❑ Photocopies

Note: You don't need to remove labels from cans or bottles. Please rinse food containers.

-Please do not place newspapers out for recycling on rainy days.

Recycling

Continued from page 4

understand why we can't recycle certain kinds of material," said Siegert, who noted many people ask if they can recycle plastic milk cartons.

"Marketing and finding a home for recyclables like plastic milk cartons is sometimes difficult," said Angin about Los Altos Garbage Company efforts to recycle as many materials as possible. "It sort of defeats the purpose if we can't find a market and it just ends up in the landfill."

The recent garbage collection rate increase, the first in two-and-a-half years, was strictly for operational purposes, Angin said. "The city decided we needed an increase for cost-of-living and rising operational costs."

Actually, the rate increase is designed to encourage recycling and lower rates for residents on a long-term basis," said Angin, who explained that Los Altos Garbage based the rate increase on an inverted rate structure in which one trash can is the base rate and the fee for each additional can goes up incrementally.

"Many residents can reduce their regular garbage service costs by recycling more items and reducing the number of cans needed for garbage pick-up," Angin said.

Los Altos Garbage Company provides recycling programs at a not-for-profit rate, Angin said. Although the company sells the recyclable materials to help defray the program's costs, proceeds from the sale do not cover all the operational or administrative costs of operating the program.

"The recycling program we've designed for Los Altos is unique," Angin said. "We work closely with the cities and as a result, our recycling programs have one of the highest participation rates by citizens and we've achieved one of the best waste stream reduction levels in the state of California."

Los Altos Don Dolan thinks the recycling bins are a great idea. As he picked up his new bin that Los Altos Garbage had just dropped in front of his house, Dolan said, "We've been recycling all along so this is great."

Los Altos Garbage serves 33,000 customers in a 250-square-mile territory that includes the communities of Los Altos, Los Altos Hills, Cupertino, Portola Valley, Woodside, Emerald Hills, Palamor Park and Ladera.

"It's necessary for every single citizen to recycle if we are to preserve our natural resources and save valuable landfill space," Angin said.

For more information about recycling in Los Altos, call the Los Altos Garbage Company at (415) 961-8040.

Morgan

Continued from page 3

the state. With some of the state's $300 million reserved for childcare, Morgan said counties can provide enhanced enforcement for missed child support payments. Authorities already have put a lien on three new cars, all paid for in full by parents who are remiss in their child support payments.

Donations

The Los Altos Town Crier sponsors a donation box for Community Services Agency of Mountain View, Los Altos and Los Altos Hills.

Donations of clothing, non-perishable food items and toys for children of all ages can be dropped off from 8:30 a.m. to 5 p.m. at the Town Crier office, 138 Main St.

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SAVE!
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NEWSLETTER MAILED TO ALL RESIDENTS & BUSINESSES

The City of Los Altos

Communiqué

Volume 5 Number 1

February 1990

City Almanac*

February

- 12 Library Commission 4:30 p.m.
- 13 City Council** 7:30 p.m.
- 15 Planning Commission 7:30 p.m.
- 19 **Presidents' Day Holiday** City Offices Closed
- 21 Parks & Recreation Commission 8 p.m.
- 26 Historical Commission 7:30 p.m.
- 27 City Council** 7:30 p.m.

March

- 1 Planning Commission 7:30 p.m.
- 8 Council/Neighborhood Meeting 7:30 p.m. Montclaire School
- 12 Library Commission 4:30 p.m.
- 13 City Council** 7:30 p.m.
- 15 Planning Commission 7:30 p.m.
- 20 Council Mid-year Service and Financial Review 7 p.m.
- 21 Parks & Recreation Commission 8 p.m.
- 26 Historical Commission 7:30 p.m.
- 27 City Council ** 7:30 p.m.

April

- 5 Planning Commission 7:30 p.m.
- 9 Library Commission 4:30 p.m.
- 10 City Council** 7:30 p.m.
- 18 Parks & Recreation Commission 8 p.m.
- 19 Planning Commission 7:30 p.m.
- 23 Historical Commission 7:30 p.m.
- 24 City Council** 7:30 p.m.

May

- 3 Planning Commission 7:30 p.m.
- 8 City Council ** 7:30 p.m.
- 14 Library Commission 4:30 p.m.
- 16 Parks & Recreation Commission 8 p.m.
- 17 Planning Commission 7:30 p.m.
- 21 Historical Commission 7:30 p.m.
- 22 City Council ** 7:30 p.m.
- 28 **Memorial Day Holiday** City Offices Closed

*This information could change. To verify, call 948-1491. Cable channel 53 also carries City information and current City Council agenda.

**Information available at libraries and police station the Saturday prior to each Tuesday meeting. Call 948-1202, *Dial-an-Agenda*, for a recording of items on the coming agenda.

Live Television Comes to Los Altos in April

Comedy ✧ Music ✧ Dance ✧ Prizes will kick-off LIVE television from Access Los Altos at Foothill College April 6. A three-hour cablecasting party will originate from the access studio. The public is invited to come to the facility and meet producers and take a look behind the scenes of local TV. Those who chose to stay home, can watch the event as it happens on channel 30 of the cable television system.

Currently, locally produced programs on the public access channel are taped and replayed from Cupertino. The ability to cablecast live enables producers to "get in touch" with their audience. Viewers can call in with questions and comments, and talk directly to hosts and guests. Panel and debate programs are planned to tackle controversial issues of interest to the community.

Those who create local TV will be on hand to guide visitors through the facility during the telethon-like evening. Clips will be shown of the many award winning programs that have come from Access Los Altos.

Viewers at home may call in for prizes and hopefully "come on down" (or up, in this case) to claim their prize and see this valuable local resource. Mark you calendars and stay tuned!

For more information about public access television, call Access Los Altos at 949-7079.

Live Television Kick-off Party

Friday • April 6

6 - 9 p.m.

Foothill College TV Center

Comedy ◆ Music ◆ Prizes

Access Los Altos ◆ Channel 30

Materials Added to Curbside Recycling

Curbside recyclers will soon be able to add plastic soda bottles to the materials set out twice monthly. Plans also include having cans, glass and plastic soda bottles co-mingled into one burlap bag. "Junk mail", mixed paper and magazines can be added to the newspaper bundles. Used motor oil will be accepted in any one-gallon plastic containers provided by the resident. Plus, the surcharge for recycling will be eliminated from residential garbage bills.

The highly regarded City curbside program begun in 1982 is being transferred to the Los Altos Garbage Company (LAGCo) in the near future. **Watch for notification of when you can begin adding the new materials.** Your regular pickup day will stay the same.

While collection of materials has always been done by LAGCo, the City has managed the program and coordinated all the public awareness activities. In order to provide the same services for other cities it serves, LAGCo has offered to take over the program at no charge to Los Altos or its residents.

As specialists in solid waste, LAGCo is in the forefront of industry efforts to reclaim materials that would otherwise be landfilled. **For more information about curbside recylcing call 961-8040.**

Phone Line for Anonymous Witnesses

Activities that appear suspicious should be reported to the police. A *Witness Hotline* is now available for citizens reluctant to reveal their name and address but feel information they have merits a call. Residents who wish to remain anonymous when reporting a suspicious activity to the Police Department may dial

W-I-T-N-E-S-S (948-6377).

Callers will leave a message on a recorder. Investigators will assess the information and take whatever action is necessary. This number **is not** meant to report crimes that are taking place, barking dogs, or traffic complaints.

All emergency calls should be made to 9-1-1.

Step right up — Express Yourself

Civic Soapbox

The City of Los Altos is interested in knowing your thoughts on shopping in Los Altos. Please take a few minutes to answer the following questions.

How frequently do you shop in Los Altos for the following items?

(place appropriate letter in the boxes)

Groceries ☐

Apparel ☐

Home improvements/hardware ☐

Restaurants ☐

Major appliances ☐

Personal Services (ie. hair salon) ☐

Other ***(please specify)*** ☐ _____

A More than once a week
B Weekly
C 2-3 times a month
D Once a month
E Less than once a month
F Never

What prevents you from doing more of your shopping in Los Altos?

What kinds of businesses would you like to see located within the City of Los Altos?

(please circle)
Sex: Male Female Age: 18-24 25-34 35-54 55-64 Over 65

STATEMENT OF PURPOSE

To communicate Los Altos City services, programs and activities of concern and interest to and involving residents and businesses within the City of Los Altos. To provide greater awareness of opportunities and encourage further civic participation.

City Council:
Margaret Bruno, Mayor
Theodore Laliotis, Mayor pro tem
Penelope R. Lave
David Reeder
Frank Verlot

City Manager: Arne Croce

Editors: Daphne Siegert 415/948-1491
Lyn Lavery

Communique'
1 N. San Antonio Rd
Los Altos, CA 94022

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Local Businesses Recycle Too

Local businesses are joining residents in city recycling efforts. Beginning September 17 corrugated cardboard will be collected by Los Altos Garbage Company for recycling. By October 15 all business areas will have the same recycling service. This latest program is another aspect of city planning for solid waste disposal.

State legislation is requiring all cities to reduce solid waste going to a landfill by 25 percent by 1995 primarily through source reduction and recycling. Cities who fail to meet these reduction goals will be liable for substantial daily fines.

Corrugated cardboard is estimated to be 40 percent of the Los Altos commercial waste generated by businesses. Merchants surveyed this spring indicated they were highly favorable to a recycling program. In the future, other items from the businesses to be recycled may include white and computer paper.

Information about the program can be obtained from the Los Altos Garbage Company at 961-8040 or the city engineering department at 948-1491.

Volume and Monthly Costs of Solid Waste Handling

Averaged for Three Months of April to June 1990

Average Monthly	
Tons disposed in landfill	**2,681**
Tons diverted by recycling	**216**
Percentage diverted*	**7.5%**

Cost **$272,413**

***Diversion goal by 1995 is 25%**

This "score card" fulfills a requirement of State legislation AB 1101 and will be in future issues of the *Communique'*.

Step right up — Express Yourself

Civic Soapbox

Comments: _____

_____

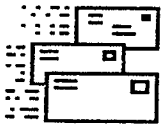
_____

_____

_____

_____

_____



Optional:

Name: _____

Address: _____

Daytime Phone Number: _____

Check here if you want a reply ☐

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The *Communique'* is published quarterly in the months of March, June, September and December.

City Council:
David Reeder, Mayor
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Margaret Bruno
Theodore Laliotis
Penelope R. Lave

City Manager: Dianne Gershuny

Editor: Daphne Siegert 415/948-1491
Financial Insert: Sherry Lambach

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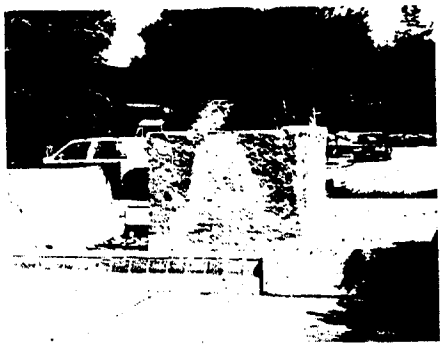

Library fountain to remain dry for duration of current drought conditions.

City Government Sets Example for Water Reduction Efforts

Water reduction goals of 20 percent were met last year by Los Altos. City government, the largest single user, reduced its water useage by 25 percent. With heavy rains in March, the city is currently ahead of water reduction goals of 30 percent April through October and 15 percent November through March.

Through specific water policies, the city intends to set the example in water conservation practices by the use of drought tolerant plants and water efficient irrigation systems an all publicly owned properties. Reclaimed water will continue to be used whenever possible. Most of the public landscaping projects that have been delayed (some as long as three years) will now be planted in a drought conscious manner.

Grant Park playing field will be seeded and watered to provide more use of the park facility. Downtown planter islands will be colorful this year with drought tolerant plants and watering systems that will utilize either drip or bubbler irrigation methods.

Drought stressed and frost damaged landscaping along Foothill Expressway and San Antonio Road is being evaluated. Dead trees and shrubs are being removed and the gaps will be replanted following water policy guidelines.

Reclaimed water has been used since 1989 to water boulevards and street trees. This year approval has been given to wash tennis courts with reclaimed water.

Advanced treatment procedures for reclaimed water from the Regional Water Quality Control Plant (RWQCP) is suitable for residential landscaping, parklands and schoolyards. Residents may obtain reclaimed water for general irrigation through the services of *permitted* operators. Call Sandra Domingo at the RWQCP, 329-2598, for more information and an updated list of individuals permitted to distribute reclaimed water.

Landscape Guidelines for Water Conservation are available at City Hall in the planning department (948-2790). While these guidelines are not mandatory for existing residential properties, they provide homeowners planning landscaping changes with simple methods to conserve water without sacrificing the unique character of Los Altos.

Did You Know?...

➨ City Council and Planning Commission meetings held in the Community Meeting Chambers are cablecast live on Channel 53 of the cable television system.

Taped playback of a meeting will be shown the following night at 7 p.m. Check listing on the channel for additional playbacks of meetings. A copy of meeting tapes is available for checking out through the main library.

➨ It is illegal to pass a car using a bike lane. When marked "BIKE LANE" or "BIKES", accompanied by an arrow, the shoulder is reserved for bicycles. The shoulder area will be marked with a six-inch wide white line which becomes broken near an intersection.

Cars are not allowed to drive in a bike lane to pass or create a second travel lane. A car may cross the bike lane to turn into a driveway, park where it is permitted and may use the lane to turn right within 200 feet of an intersection. A car should yield to bicycles when entering a bike lane.

Volume and Monthly Costs of Solid Waste Handling

Averaged for Three Months of January to March 1991

Average Monthly	
Tons disposed in landfill	**1,970**
Tons diverted by recycling	**264**
Percentage diverted*	**11.8%**
Cost	**$237,265**

***Diversion goal by 1995 is 25%**

Take the time to have your voice heard. The Civic Soapbox reply form is on page 4. Feel free to make any comments or suggestions. Clip the form and fold it in half. Be sure the Business Reply Mail side (below) is on the outside. The U.S. Postal Service would prefer it secured at the bottom with a small piece of tape.

Fold Here

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FIRST CLASS PERMIT NO. 916 LOS ALTOS,CA

POSTAGE WILL BE PAID BY ADDRESSEE

CITY OF LOS ALTOS
1 North San Antonio Road
Los Altos, CA 94022

Use Home Fire Extinguishers

Those who have lived through a fire in their home know the full value of household fire extinguishers. An extinguisher can be your best weapon during a fire's most crucial stage — the first few seconds it takes hold before leaping out of control. The cost of an extinguisher is small compared to the potential fire loss.

It's important to choose the right one according to the City of Los Altos Fire Department. Any unit you buy should be labeled by Underwriters Laboratories.

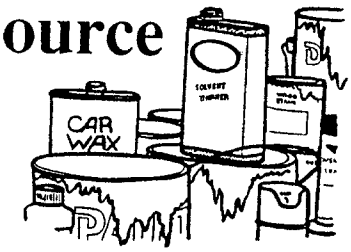
The UL label classifies the extinguisher (A, BC, or ABC) and rates relative effectiveness with a number. You should buy an extinguisher with at least a 2A-15B:C rating. This size and type is suitable for use on all types of fires (wood/paper, grease and electrical). The small "toy" type is not large enough to extinguish even a very small fire. They give a false sense of security and should not be purchased.

Keep extinguishers near doorways of danger areas (kitchen/garage) to allow yourself the choice of fighting the fire or escaping. Guard against injury by not reaching for an extinguisher kept too near a potential hazard (such as over the stove). Mount it on the wall using an easily released clamp bracket. Do not store it in a cabinet — it could be out of reach, if you remember where it is. The Fire Department can advise you on extinguisher locations.

In the event of a fire:

1) evacuate the house
2) call 911 for the Fire Department so they'll be on the way if your efforts fail
3) fight the fire only if it's safe to do so

Reduce Household Hazardous Waste at the Source



Preserving and improving our environment is becoming increasingly important as we enter the 90's. Disposing of hazardous household materials is getting a lot of attention lately. We are more aware of our personal responsibilities in protecting our water, land and air. Advice and ideas about what to do abound.

Los Altos provides drop-off collection days three times a year for residents. Last spring 33 tons of potentially harmful materials were diverted from the local landfill through one such event at a cost of $80,000 . At this time, it is not only very expensive but the demand for safe disposal options exceeds the availability.

Santa Clara County is working with cities to develop year-round opportunities for residents to get rid of these materials. A program is being proposed and could be operational in the next year or two.

In the meantime Los Altos will continue to hold three yearly drop-off events for its homeowners. The next Toxics Drop-off Day is Saturday April 6 from 9 a.m. to 3 p.m. at St. Simon's Church, 1860 Grant Road. State law allows only five gallons or 50 pounds of household material to be transported by a resident.

- **Probably the most important thing a householder can do is buy only what is needed and use up "leftovers" according to directions.**
- Find someone else who will use the product to eliminate waste disposal.
- Small amounts of latex paint can be air dried — solid paint in the can may go into trash.
- Any empty cans (including aerosols) may go in the regular trash.
- Don't allow painting or building contractors to leave materials behind.
- Hobbyists should be especially careful about labeling and disposing of hazardous materials that are no longer used. Recently a widow had a very difficult time identifying and disposing of a highly toxic substance after her husband died.
- A limited quantity of booklets, *Take Me Shopping*, are available at City Hall that provide advice for using non-toxic alternatives.

Take the time to have your voice heard. The Civic Soapbox reply form is on page 4. Feel free to make any comments or suggestions. Clip the form and fold it in half. Be sure the Business Reply Mail side (below) is on the outside. The U.S. Postal Service would prefer it secured at the bottom with a small piece of tape.

Fold Here

Volume and Monthly Costs of Solid Waste Handling

Averaged for Three Months of July to September 1990

Average Monthly	
Tons disposed in landfill	**2,270**
Tons diverted by recycling	**242**
Percentage diverted*	**9.6%**
Cost	**$222,321**

***Diversion goal by 1995 is 25%**

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Los Altos, CA 94022

Senior Center Home of Toymakers

Dedicated ladies from the City's Senior Center make stuffed monkey toy dolls intended to bring smiles onto faces of terminally ill children entering Children's Hospital at Stanford. In the last 12 years they have sewn and stuffed 4,000 dolls — that's almost one monkey a day. At a recent celebration honoring the *monkey toy ladies*, representatives from the Hospital brought a cake with a decorated message saying "Thanks for the Monkey Business".

Gladys Baxter and Mega Regnery with other toymakers honored for "monkey business".

Mega Regnery, Mary Metro, Angelino Caprio and Helen Ellis are among the original 10 ladies starting the group in 1977 who are still creating monkey dolls. A fund raising luncheon sponsored by Mercury Savings and Loan every year provides ribbon, trim and other supplies. Children's Hospital contributes the socks.

"The group is always looking for new recruits", according to Regnery. Current group leader, Gladys Baxter adds, "Anyone interested in fashioning these toys can drop by the Senior Center any Monday morning after 9:30 a.m."

Coming Senior Events

Pancake Breakfast Fundraiser
Sunday • April 8

❁ SeniorFest ❁
Sunday • June 3
Hillview Community Center
948-7483

Solid Waste Issues Are Priority for 90's

Recycling programs and state solid waste legislation are undergoing rapid change. Recent newspaper headlines have announced a new state law requiring local governments to reduce solid waste going to landfills. The *California Integrated Solid Waste Management Act of 1989* specifies waste reduction goals of 25 percent by 1995 and 50 percent by the year 2000. It also includes components for recycling, household hazardous waste programs, funding and education.

Managing solid waste disposal is a primary service provided by local government. The City of Los Altos has a franchise agreement with the Los Altos Garbage Company (LAGCo) for the collection of residential and commercial refuse, curbside recycling and cleanup days. The City has a contract with the Newby Island Landfill to dispose of collected solid waste unitl 2019. In addition, the City coordinates drop-off days for household hazardous materials.

Los Altos is already reducing its residential waste by 17 percent through its curbside recycling program begun in 1982. A citizen's advisory committee is exploring methods to develop a commercial recycling program. In addition,later this year the Newby Island Landfill will be sorting and recycling a majority of commercial waste materials missed by other methods.

Is this enough to reach state mandated goals? Maybe, if **everyone** is doing the maximum possible. To learn more about residential curbside recycling and to get a 1990 schedule, call LAGCo at 961-8040. (Note: Due to the usual heavy phone load during the holidays and increased calls from other cities, LAGCo has recently doubled their phone line capacity. The best times to call are late morning and mid-afternoon.)

Watch for important information about solid waste issues and programs routinely provided on inserts in your garbage bills and articles in the *Communique'*.

Monthly Costs and Volume of Solid Waste Handling

Averaged for Three Months of September to November 1989

Tons disposed in landfill	**2,740**
Tons diverted by recycling	**607**
Total Cost	**$231,246.00**
Cost per ton	**$78.59**

This "score card" is fulfilling a requirement of State legislation AB 1101 and will be in future issues of the *Communique'*.

City to Review Cable Television Performance

Customer satisfaction of cable television is being reviewed by the CATV Citizen's Advisory Committee. A public review meeting is scheduled for Tuesday, April 3 at 7:30 p.m. in the Community Meeting Chambers at City Hall. At this meeting, subscribers may submit comments orally or in writing.

Conducting a formal periodic review is part of the 15 year franchise agreement with United Cable Television which becomes renewable in 1999. The focus of this review will be on customer service and system performance. The results of the review will serve as a guideline for future reviews and at times of possible renegotiations of franchise renewal.

Five areas contributing to the quality of customer services are being addressed during the review.

- Subscriber penetration and marketing efforts
- Customer satisfaction
- Technical performance
- Financial performance
- Programming

Customer surveys have been conducted by United through their subscriber billings. In addition, the Advisory Committee would like to hear from non-subscribers. A short survey is part of the ***Civic Soapbox*** on page 4.

3R Awareness Taskforce

Mission Statement:

To promote public awareness of solid waste issues through educational materials and activities that encourage the community to reduce, reuse and recycle.

The taskforce will develop activities and materials:

- **to promote an increase in public awareness and participation in existing waste reduction programs**
- **that provide information on purchasing choices to reduce waste generated as well as support products made from recycled materials**
- **to be utilized by various individuals, schools and organizations throughout the community**

Reduce ✧ Reuse ✧ Recycle

Los Altos Garbage Company
City of Los Altos
3/25/92

INSERT TO NEWSLETTER
(2 SIDES)

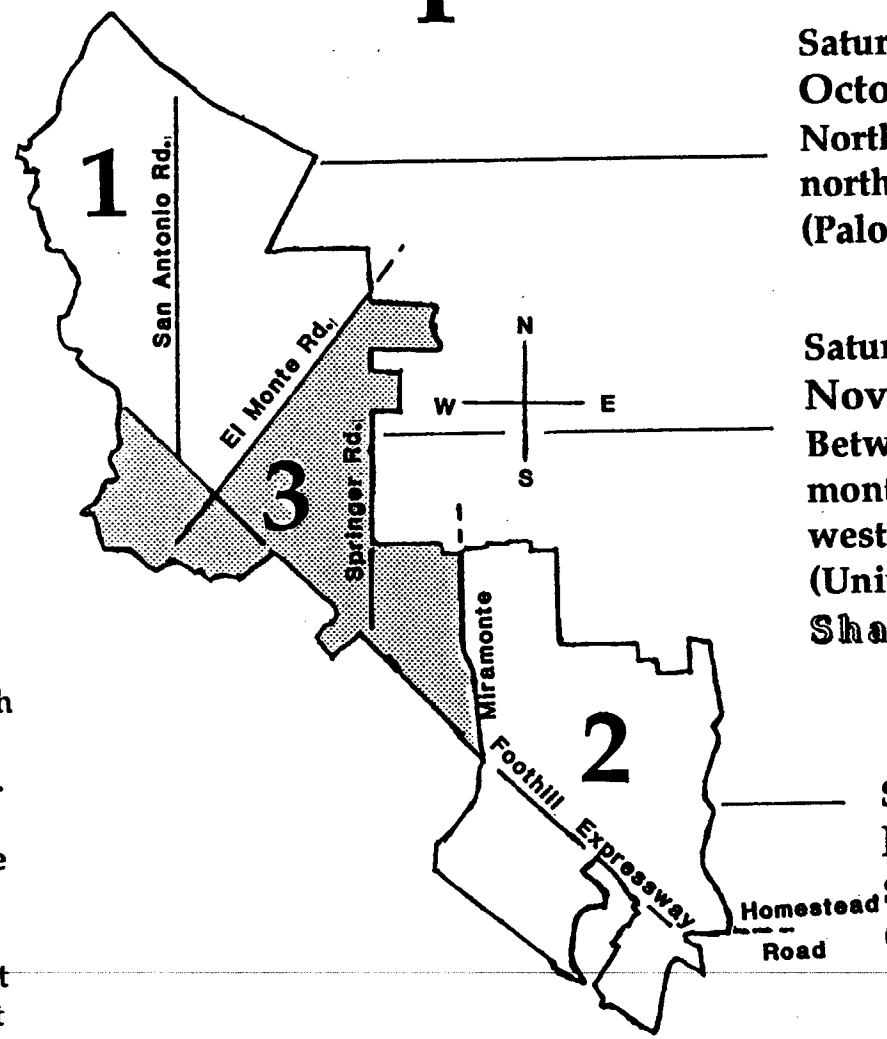
Changes in 1988 Fall Cleanup

Increased participation and more material being collected has necessitated some changes to future cleanup dates. The City is now divided into three sections with three Saturdays for pickup. **Residents between El Monte Avenue and Miramonte Avenue plus the University/Orange area now have a different cleanup day.** All other residents have no date changes.

On the map to the right, the shaded portion is the added third section with a new date.

Cleanup days are twice a year opportunities for Los Altos residents with can garbage service to dispose of household debris and yard trimmings.

To keep costs manageable, there are rules for setting out materials. Please follow the rules shown on the reverse side of this insert. If these rules are not followed, your materials will be left at the curbside.



Revised Schedule

Saturday
October 29
Northwest of El Monte and north of Foothill Expwy (Palo Alto side)

Saturday
November 11
Between El Monte & Miramonte plus streets southwest of Foothill Expwy (University/Orange)
Shaded Area

Saturday
November 5
Southeast of Miramonte (Sunnyvale side)

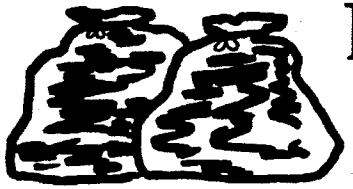
This program is for residents within the Los Altos city limits who are Los Altos Garbage Company customers with *can* service.

Los Altos Fall Cleanup Days

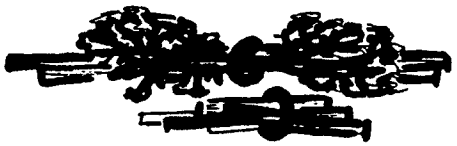
For Date Changes — See other Side

1. Collection begins at 7 a.m. All prepared rubbish must be placed at the curbside before 7 a.m.

2. Material should **not** be put out more than seven days prior to your scheduled pickup day.



BAG

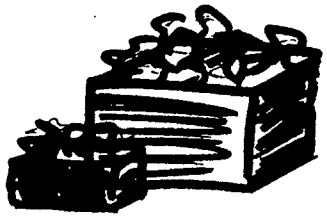


BUNDLE

3. All household debris and garden trimmings **must** be secured in boxes, cartons or heavy-duty plastic garbage bags.

4. Tree trimmings **must** be bound securely into bundles no larger than 3' X 2'.

5. Household appliances will be picked up **only** if they can be easily managed by two men. It may be necessary to complete some of the appliance pickups on the following **Monday.**



BOX

Residents are encouraged to donate usable items to their favorite charity group such as Goodwill (408/998-5774) or the **Salvation Army (800/336-4900).**

This cleanup program is limited to *City of Los Altos* residential *can* service customers only. Collection will only be made for these customers. Material that is set out by any non-customers will be left at the curb.

No loose trash is accepted.

For more information, please call the Los Altos Garbage Company at 961-8040.

These items will not be accepted

rock
dirt
construction materials
asphalt
lumber
hazardous or toxic materials
explosives
automotive parts

Please remember — no loose trash!

EMPLOYEE NEWSLETTER

Reduce, Reuse, Recycle !

Goals for the Nineties

By Daphne Siegert, Engineering Dept

Regardless of where we live or work, all of us are being faced with reducing the waste we create. Landfill space is rapidly diminishing around the world. Local governments are designing programs and educational material as fast as they can. But it is generally individuals producing the waste that will ultimately succeed at reducing, reusing and recycling.

What Los Altos is Doing Now

The city is currently providing a curbside recycling program for all residences. Materials collected are newspaper, cans, glass, PET (soda bottles) plastic and used motor oil. A program collects corrugated cardboard from businesses. We are developing a residential yard waste to compost curbside collection program that we plan to begin this coming January. For the last five years we have held household toxics drop-off days for residents to safely dispose of potentially hazardous materials.

A new program (which Los Altos was instrumental is developing to replace doing our own events) for all county residents is expected to start in October. This HHW (household hazardous waste) program is being run by the county and will move around the county offering any resident an opportunity every two to three to drop off materials by appointment. A countywide "hotline" will be published to make appointments and obtain HHW information.

A major effort is being developed by the city to meet State of California mandated (AB 939) goals to reduce waste going to landfills by 25 percent by 1995 and 50 percent by 2000. All cities in the state must comply with AB 939. Also, there are more programs being required to eliminate HHW from sewers, storm drains and creeks as well as landfills. Ultimately this will reduce pollution to our water and the SF Bay.

What We're Doing While at Work

All city facilities should have recycling containers available for white paper, newspaper, glass and cans. The custodians transfer materials placed in a "central" building location to containers that are regularly picked up by the garbage company.

The white paper collection is for any non-coated (not shiny or slippery) white paper, including computer paper. Cream or buff colors are not white. Staples or paper clips do not need to be removed. Plastic bindings should be removed. Avoid putting envelopes or items with a lot of glue in the white paper barrel. An occasional "post-it note" is okay. But, too much contamination could cause a whole truckload to be rejected and might end up in a landfill.

All glass, any cans and PET (soda bottles) plastic can be mixed together in one collection container. That's easier, and means we now recycle more materials from city facilities. Please rinse food from empty glass and cans before putting them in the "recycling hopper".

More and more of our reports and brochures are being printed on recycled paper. The people in purchasing make a special effort to buy recycled products whenever possible. Some of the inking and ribbon mechanisms to printers and copiers are sent to be recycled.

We've eliminated styrofoam cups and plates from the lunchrooms. The municipal service center has a program to dispose of their hazardous waste.

There's More We Can Do

As an employee you can keep up the good work. Watch for opportunities to reuse something before tossing it. For example, take notes or leave messages on the backs of old printed materials. Be extra conscious about getting all of your white paper into the recycling barrel. It only takes a minute to remove a colored cover and plastic binding from all those reports we get.

When ordering paper or printing, ask for recycled — ideally you'd want at least 10 percent post consumer stock. Recycled paper doesn't always have to look flecked and rough. Whenever possible do double sided copying. There's a choice, use colored recycled paper or white paper that can be recycled.

A recent conservationist push is to never use paper cups. Many meetings I go to encourage us to bring our own reusable mugs. Generally, select items that can be reused and completely used up.

Buy non-hazardous materials in large economy sizes (if you know you'll eventually use it all) because it reduces packaging waste. Purchase items with the minimum amount of packaging.

Buy potentially hazardous materials in the smallest amount you need and use it all up according to directions. Make sure toxic materials are disposed of properly. Any completely empty and dry container can go into the regular trash.

And There Is Even More Info Available

Did you find this article helpful? Would you like more information about recycling and HHW at work and at home? If so, let me know. As time permits, I'll write more.

Fact Sheet
Curbside Recycling Program

Purpose

By providing residential curbside collection of recyclable materials, the City of Los Altos intends to reduce solid waste tonnages sent to landfills and contribute positively to environmental conservation.

Demographics

Population—27,000
Single Family Residences—9,100
Multi-Family Residences—1,500
Businesses—1,400
No Industry

Statistics

1987-88—2,422 tons collected
58 percent participation rate (route survey conducted October 1988)
Reduction of residential wastestream—17 percent

Operations

Since October 1982 twice monthly collection has been provided to all residences. Arrangements were developed with condominiums and apartments.

Materials are collected in unmarked sisal bags for mixed cans and for mixed glass. Bags are provided by the program. Newspapers are placed at curbside in paper grocery bags or tied into bundles. Used motor oil is collected in one-gallon plastic containers with a screw-on cap provided by the program.

Under an amendment to the franchise agreement, the Los Altos Garbage Company is responsible for collection of all materials and transport for processing. LAGCo is reimbursed by the City for all operational costs, including vehicle maintenance, plus a two percent administration charge. About 50 percent of the routes require an additional City vehicle and staff person to collect newspapers for delivery to processing.

Processing and marketing of recyclable materials is done at the City of Sunnyvale's recycling center. Newspapers collected by the City crew are processed at Container Corporation. Sunnyvale is reimbursed for processing based on Los Altos' percent of the total operation tonnage.

Equipment

The customized van, trailer and bins owned by the City are leased to LAGCo for a nominal fee. A City truck is also used for newspaper additional collection.

Public Awareness

An annual calendar is distributed to all residences, by route, indicating dates for collection, instructions for setting out materials, and a report on the program's success. Periodically the program is spotlighted with press releases, newsletter articles, and information inserted in the LAGCo quarterly billings. All new residents receive introductory information from LAGCo. This established program is highlighted regularly whenever City services are featured. When the program was beginning, contests and educational activities were used in the schools, as well as special direct mail pieces and posters.

Funding

Approximately 50-66 percent of program revenues are derived from the sale of recyclables. A surcharge on residential garbage bills is assessed yearly to provide the fund balance. Initially a $49,500 grant from the California Solid Waste Management Board was used to purchase the van and equipment and to develop a public awareness campaign.

The City of Los Altos • 1 North San Antonio Rd • Los Altos, CA 94022 • (415)948-1491

Los Altos Curbside Recycling

1989 Calendar

CALENDAR SENT YEARLY TO ALL RESIDENCES — INCLUDING MULT. FAMILY

U.S. Postage
PAID
Los Altos, CA
Permit No. 258

LOS ALTOS
Curbside Recycling

Los Altos Curbside Recycling
One North San Antonio Road
Los Altos, CA 94022

Recycling Calendar 1989
Save this side for easy reference

Route #7

The dates shown below are your recycling pickup days

(Second and Fourth Tuesdays)

In the event of a missed pickup, call Los Altos Garbage Company 961-8040

1989

JANUARY						
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Note these dates for the **Cleanup day**
in your neighborhood:

Northwest of El Monte and north
of Foothill Expressway (Palo Alto side)
April 22/October 28

Between El Monte and Miramonte plus streets
southwest of Foothill Expressway (University/Orange)
April 29/November 4

Southeast of Miramonte (Sunnyvale side)
May 6/November 11

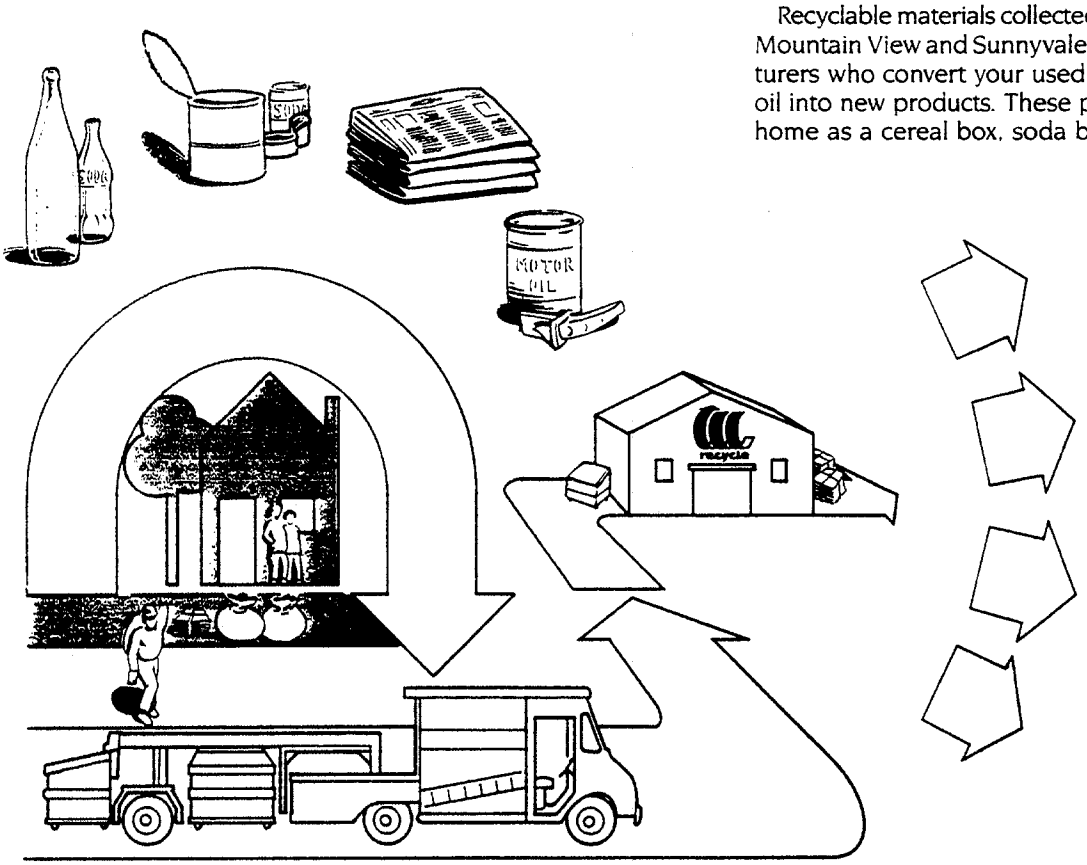
Household Toxics Drop-off Day
★ April 15/July 15/October 14 ★

New Life for Recycled Goods

For Los Altans recycling cans, glass, newspaper and motor oil with the curbside recycling program, the story usually ends when the material is picked up by the recycling van. However the recycling loop has really just begun.

The recycling van is specially equipped with bins for each of the materials collected and a rack to securely hold the one-gallon plastic oil containers. The driver starts his route at 6 a.m. each morning. Once the van is full it heads to the Sunnyvale processing center to unload. The van may make one or two trips to the center each day.

Recyclable materials collected at the curbside in Los Altos, Mountain View and Sunnyvale are sold to various manufacturers who convert your used glass, cans, newspaper and oil into new products. These products may return to your home as a cereal box, soda bottle or pie tin.



Newspaper – newsprint, cardboard, box board, various packaging materials, cellulose insulation

Glass – new bottles and jars, fiberglass insulation

Used Motor Oil – rerefined motor oil, low grade fuels, asphalt shingles

Aluminum – new aluminum cans, foil, sheet metal stock, siding, wire

Watch for information and reminders of these programs in your garbage bill, the City Communique', recreation brochure and local newspapers.

Los Altos Curbside Recycling is Easy!

Please save these materials

All Newspaper - but no magazines, telephone directories or cardboard. Newspapers must be set out either in brown grocery sacks or bundled with strong twine. Please do not put papers in burlap or plastic bags.

Metal Cans - tin and aluminum. Please remove all paper labels and quick rinse the cans. Paper contaminates the chemical process used in reclaiming the tin plating. Put cans in one of the burlap bags provided for recycling.

Glass - bottles and jars. Discard the lids and give them a quick rinse. Paper labels need not be removed from glass bottles and jars.

Used Motor Oil - simply fill the provided standardized plastic container with used motor oil and screw on lid tightly. **To request delivery of containers, call the Los Altos Garbage Company at 961-8040.**

Curbside Recycling Reminders

- Place recyclables out the night before scheduled pick-up day or before 6 a.m. on the day of pick-up.
- Remember this program has pick-ups scheduled twice-a-month, not every other week.
- Place your cans and glass out in the burlap bags supplied for curbside recycling. Using the provided burlap bags enables the driver of the recycling van to easily identify the material left at curbside as recyclables and intended for pick-up. **If you need burlap bags, please call the Los Altos Garbage Company at 961-8040.**
- Make sure your recyclables are easily visible from the street in both directions.
- For more information about the curbside recycling and other solid waste programs, call Los Altos City Hall at 948-1491.
- **To report a missed pick-up, please call the Los Altos Garbage Company 961-8040.**

Other Solid Waste Programs

Cleanup Days

Twice-a-year opportunities for City residents to dispose of bagged and bundled household rubbish and garden trimmings. Cleanup service is limited to residential can service customers only. Collection begins at 7 a.m. Household debris and garden trimmings **must** be in boxes, cartons or heavy duty plastic garbage bags. Tree trimmings must be bound in bundles no larger than 3'×2'. Furniture and appliances will be picked up **only** if they can be easily managed by two men.

Household Toxic Drop-off Days

Three opportunities a year to safely dispose of household toxic waste such as oil based paints, solvents and pesticides at no charge. All toxic products must be in tightly closed, labeled containers. Each household has a limit of five gallons or 50 pounds.

All empty containers may go in the trash. The best way to dispose of toxic products is to use them up according to the packaged directions, or give them to friends and organizations who could utilize them. Better still, buy and use non-toxic substitutes whenever possible.

1989 Curbside Recycling Calendar is on Reverse Side

Fact Sheet
Curbside Recycling Program

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By providing residential curbside collection of recyclable materials, the City of Los Altos intends to reduce solid waste tonnages sent to landfills and contribute positively to environmental conservation.

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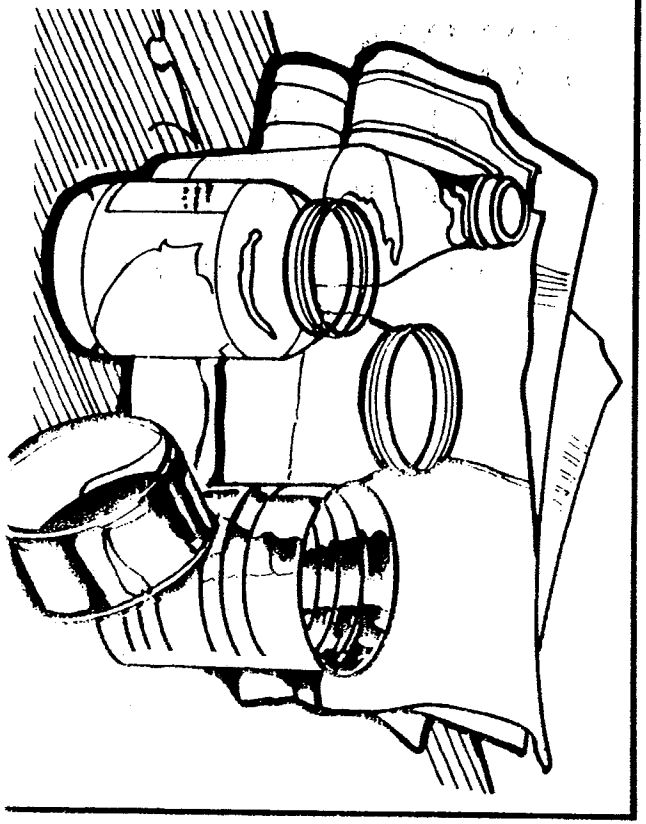
The City of Los Altos • 1 North San Antonio Rd • Los Altos, CA 94022 • (415)948-1491

Los Altos Curbside Recycling

1988 Calendar



U.S. Postage
PAID
Los Altos, CA
Permit No. 258

Los Altos Curbside Recycling

Los Altos Curbside Recycling
One North San Antonio Road
Los Altos, CA 94022

Recycling Calendar 1988
Save this side for easy reference

Route #9

The dates shown below are your recycling pickup days.

(Second and Fourth Thursdays)

In the event of a missed pickup, call Los Altos Garbage Company 961-8040.

1988

JANUARY						
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1988 Holiday Note:
Tuesday, November 29 pickup is due to the Thanksgiving Day holiday.

Note these dates for the Cleanup day in your neighborhood:

☐ West of Springer Road (Palo Alto side)
April 30/Oct. 29

○ East of Springer Road (Sunnyvale side)
May 7/Nov. 5

▶ Household Toxics Drop-off Day
April 16/July 16/Oct. 8

Five Years of Recycling— Just a "Tip of the Landfill"

Prior to 1982, all Los Altos household waste went to a landfill. In the last five years of residential curbside recycling, almost 11,000 tons of materials have been diverted for resource recovery. That is 11,000 tons not going to a rapidly diminishing landfill. The amount of space this saves in the landfill is equivalent to a standard quarter-acre lot five stories (50 feet) high, completely filled from corner to corner!

Why do we need to save landfill space?

Los Altos does not own a landfill. All collected wastes are currently transported to the City of Mountain View's landfill. Your garbage rates reflect the costs of collection, transportation and disposal. Twenty-nine percent of your garbage bill goes toward landfill disposal costs. In 1994, Mountain View's landfill will no longer be available for Los Altos. A landfill much farther away will be needed. In addition to new disposal rates, this will significantly increase transportation costs.

To control transportation and disposal costs, it makes sense to reduce the amount being sent to the landfill. It is estimated that 35 percent of all household trash can be recycled. Los Altos is already recycling 16 percent of its waste. That's good, but it's only part of the way to doing as much as possible.

Will recycling save money?

Materials collected for resource recovery are marketed, thus offsetting the cost for operations of the recycling program. The market for recyclables varies greatly. Currently the net cost of the curbside recycling program is about $27 per ton, one-third of the cost for landfill disposal.

The greatest saving in recycling is in the costs avoided in terms of energy for processing or the natural resources not used.

- **Recycling aluminum saves 95 percent of the energy needed to produce it from bauxite**
- **Energy saved by recycling 26 cans of aluminum would light a 100-watt bulb for 290 hours**
- **A three-foot stack of recycled newspapers saves the equivalent of two gallons of gasoline in energy**
- **75,000 trees are left standing if the entire print run of the Sunday New York Times is recycled**

How much is Los Altos Recycling?

Approximately 68 percent of the residents regularly participate in curbside recycling. In 1987 each participating household averaged over one-third ton in recyclables collected. Last year's collection was 33 percent higher than 1986. Used motor oil increased by 18 percent.

1982-83	1,279 tons
1983-84	1,928
1984-85	2,058
1985-86	2,239
1986-87	2,986

Motor Oil:

1984-85	2,799 gallons
1985-86	4,687
1986-87	5,532

In 1987 Los Altos saved by recycling:

- **36,771 trees with recycled newspaper**
- **with glass, enough electricity to light 2,000 one-hundred watt light bulbs 2,062 hours**
- **aluminum energy equalling 2,363 gallons of gasoline**
- **20,000 cubic yards of landfill space**

What about the bottle bill?

The California Beverage Container Recycling Act allows consumers to redeem beverage containers for one cent each. Plastic, glass and aluminum beverage containers may be redeemed at certain major grocery stores. Known as the bottle bill, this act was created to encourage recycling and decrease litter.

However, curbside recycling in Los Altos is much easier. You can simply put recyclables at your curbside twice a month and still achieve the purpose of the bottle bill. The one cent redemption is paid to the curbside recycling program for every beverage container collected. In effect, the redemption is creating additional income to offset costs of operating curbside recycling.

Are there other solid waste programs?

Spring and Fall Cleanup is the most popular program provided by the City. This twice a year opportunity allows residents to dispose of bagged and bundled rubbish and garden trimmings.

Cleanup days are always scheduled for:
West of Springer Road — the last Saturday in April and October
East of Springer Road — the first Saturday in May and November

Household Toxics Drop-off Days are jointly sponsored by the cities of Los Altos, Cupertino and Mountain View three times a year. Each city provides a day for residents of all three cities to safely dispose of household hazardous materials.

Watch for information and reminders of these programs in your garbage bill, the City Newsletter, recreation brochure and local newspapers.

Los Altos Curbside Recycling is Easy!

Please save these materials

All Newspaper - but no magazines, telephone directories or cardboard. Newspapers must be set out either in brown grocery sacks or bundled with strong twine. Please do not put papers in burlap or plastic bags.

Metal Cans - tin and aluminum. Please remove all paper labels and quick rinse the cans. Paper contaminates the chemical process used in reclaiming the tin plating. Put cans in one of the burlap bags provided for recycling.

Glass - bottles and jars. Discard the lids and give them a quick rinse. Paper labels need not be removed from glass bottles and jars.

Used Motor Oil - simply fill the provided standardized plastic container with used motor oil and screw on lid tightly. To request delivery of containers, call the Los Altos Garbage Company at 961-8040.

Curbside Recycling Reminders

- Place recyclables out the night before scheduled pick-up day or before 6 a.m. on the day of pick-up.
- Remember this program has pick-ups scheduled twice-a-month, not every other week.
- Place your cans and glass out in the burlap bags supplied for curbside recycling. Using the provided burlap bags enables the driver of the recycling van to easily identify the material left at curbside as recyclables and intended for pick-up. If you need burlap bags, please call the Los Altos Garbage Company at 961-8040.
- Make sure your recyclables are easily visible from the street in both directions.
- For more information about the curbside recycling and other solid waste programs, call Los Altos City Hall at 948-1491.
- To report a missed pick-up, please call the Los Altos Garbage Company 961-8040.

Other Solid Waste Programs

Cleanup Days

Twice-a-year opportunities for City residents to dispose of bagged and bundled household rubbish and garden trimmings. Cleanup service is limited to residential can service customers only. Collection begins at 7 a.m. Household debris and garden trimmings **must** be in boxes, cartons or heavy duty plastic garbage bags. Tree trimmings must be bound in bundles no larger than 3' × 2'. Furniture and appliances will be picked up **only** if they can be easily managed by two men.

Household Toxic Drop-off Days

Three opportunities a year to safely dispose of household toxic waste such as oil based paints, solvents and pesticides at no charge. All toxic products must be in tightly closed, labeled containers. Each household has a limit of five gallons or 50 pounds.

All **empty** containers may go in the trash. The best way to dispose of toxic products is to use them up according to the packaged directions, or give them to friends and organizations that could utilize them. Better still, buy and use non-toxic substitutes whenever possible.

1988 Curbside Recycling Calendar is on Reverse Side

SORT IT OUT, SET IT OUT.

Here's all you need to know about the easy way to recycle glass, cans and newspapers. Just sort it out and set it out! It's that simple.

ORIGINAL 4 PAGE BROCHURE TO START CURBSIDE RECYCLING PROGRAM

We must all begin to recycle now.
Since 1971, Los Altans have cared by saving and bringing recyclable materials to the People Who Care Recycling Center. Other organizations and service groups have also recycled materials from Los Altos residences.

The benefits of such programs are important to us all. Landfill sites that, for years, were used for burying garbage are quickly filling up, becoming scarce, and farther away from communities they serve. Yet, Los Altans still dispose of 47 tons of garbage every day.

Precious resources are being used once and thrown away, and nature isn't replacing them as quickly as we use them, if at all.

By recycling, we can all help lessen the costly landfill problem, preserve valuable natural resources, decrease pollution, and conserve energy.

Start saving your glass, cans and newspapers. Curbside recycling starts October 1.
During the week of September 13–17, Los Altos Garbage Company personnel will deliver two burlap bags to each single family residence in Los Altos. Included with your bags will be a calendar with circled dates indicating pickup days for your neighborhood. Save this calendar and post it in a convenient spot to remind you of the correct day to set out your recyclables. Volunteers will be distributing literature door-to-door, and answering questions you may have.

On Friday, October 1, a new, specially designed collection vehicle will begin visiting every neighborhood on regularly scheduled days (see calendar). All you have to do is set the recyclable materials you've been saving at curbside for pickup.

Save these materials:

- **All newspapers**—but no magazines, telephone directories or cardboard. Just stack in a dry place.
- **All metal cans**—tin, aluminum or bi-metal. Please remove the paper labels and quick-rinse the cans.
- **Glass**—bottles and jars. Remove the lids or metal tops and give them a quick rinse at the kitchen sink. It's OK to leave paper labels on glass. (Please—no ceramics, china, Pyrex, mirrors, light bulbs, windows or safety glass.)

Sort into bags.
• Use grocery bag fo them securely with str into a burlap bag. • P burlap bag.

Set out your recyclabl
The night before th dar, set your bags your bags aren't fu and the truck driver a full. The driver will

But Suppose...?
• My bags tear or we driver will supply sary. **• I already re** already save materia groups, keep up th **cycling day?** Save dry recycling day, but glass as usual. **• I hav information?** Just cling Hotline (415) 94 business hours. From 29, volunteers will calls and answer 29, call Los Altos Gar 961-8040.

Los Altos Curbside Rec begins Friday, Octobe Here's how you can, and why you should, be part of this city-wid

ewspapers, or bundle or twine. • Put all cans ll g iss into the other

eo ate on your calen- sid. Don't worry if e it easy on yourself et em out ½ to ¾ em y bags.

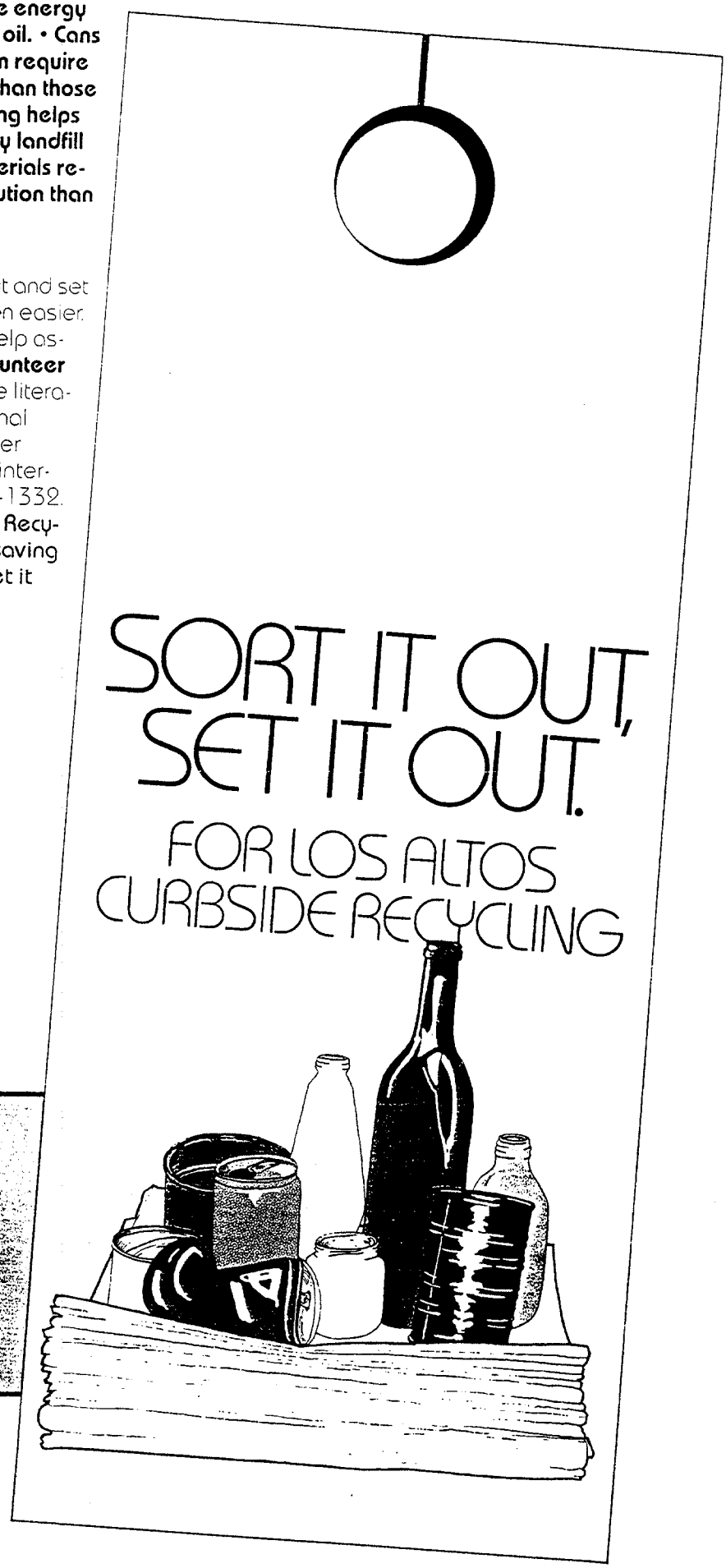
out Don't worry Your n u bags as neces- That's terrific! If you r your church or other u rk. **• It rains on re-** wspapers for the next out your cans and **ues ons or need more** Al s Curbside Recy- 332, during regular te ber 7–October ld le to take your estions. After October e Company at (415)

How recycling helps us all.

• Recycling one ton of newspapers saves seventeen trees and the energy equivalent to three barrels of oil. • Cans made from recycled aluminum require 95% less energy to produce than those made from raw ore. • Recycling helps extend the life of existing costly landfill sites. • Recycling of scrap materials results in less air and water pollution than processing raw materials.

How can you help.

It's easy. **Participate!** Sort it out and set it out. Recycling has never been easier. Your active participation will help assure a successful program. **Volunteer** to help staff hotlines, distribute literature, or participate in educational programs for schools and other interested groups. If you are interested, call the Hotline at 949-1332. **Remember, Los Altos Curbside Recycling begins October 1. Start saving and sorting now, so you can set it out on your recycling day.**


SORT IT OUT, SET IT OUT.
FOR LOS ALTOS CURBSIDE RECYCLING

cling
1, 1982.

LOS ALTOS CURBSIDE RECYCLING HOTLINE:
(415) 949-1332
After October 29th, call the
LOS ALTOS GARBAGE COMPANY:
(415) 961-8040

e program.

SORT IT OUT, SET IT OUT. FOR LOS ALTOS CURBSIDE RECYCLING.

LOS ALTOS Curbside Recycling

It's easy. See how inside.

© 1982 City of Los Altos 8/18M

os Altos Curbside Recycling
:ity Hall
One N. San Antonio Road
' os Altos, CA 94022

Bulk Rate
Postage
P A I D
Los Altos, CA
Permit No. 258

LOS ALTOS Curbside Recycling

Now you can recycle glass, cans and newspapers easily!

CITY OF LOS ALTOS

ONE NORTH SAN ANTONIO ROAD LOS ALTOS, CALIFORNIA 94022

TELEPHONE (415) 948-1491

June 21, 1983

Dear Apartment Manager,

The Curbside Recycling service which was initiated last October, was originally offered only to single family residences in Los Altos. As a result of interest expressed by residents of several apartments and condominiums, a pilot program to serve apartments and condominiums was initiated in April. The Curbside Recycling Committee has reviewed the results of the pilot program and is recommending to the Los Altos City Council that the Curbside Recycling service be expanded to include all apartments and condominiums in the City.

In order for us to provide service beginning in July, should the City Council wish to proceed, we are contacting you in advance of the public hearing scheduled for June 28th. If the program is expanded as proposed, the residents of your complex will have the opportunity to recycle metal cans, glass and newspaper with the City program by collecting the material and setting it at curbside for twice a month pick up.

City crews will be distributing burlap bags and detailed information regarding recycling to all of your residents June 29th and 30th in preparation for your first pick up. If it is more convenient, crews will drop off the bags and information and you may distribute them. This may be necessary if your complex is an enclosed facility and is not accessible to the public.

In the pilot program some apartment managers/associations chose to organize a collective recycling effort in which a certain person is responsible for setting recyclables at curbside on the appropriate day, while others chose to have residents put their recyclables out individually.

If special arrangements must be made for your facility, you would like to become involved in recycling at your complex, or you would like additional information, please call me at 948-1491 extension 46.

Enclosed is a recycling calendar indicating your specific days of pick up and a sample of the material we will be distributing to your residents.

Sincerely,

Lyn Cruzen

Lyn Cruzen
Public Awareness Assistant

CITY OF LOS ALTOS

ONE NORTH SAN ANTONIO ROAD LOS ALTOS, CALIFORNIA 94022

TELEPHONE (415) 948-1491

June 21, 1983

Dear Home Owners Association,

The Curbside Recycling service which was initiated last October, was originally offered only to single family residences in Los Altos. As a result of interest expressed by residents of several apartments and condominiums, a pilot program to serve apartments and condominiums was initiated in April. The Curbside Recycling Committee has reviewed the results of the pilot program and is recommending to the Los Altos City Council that the Curbside Recycling service be expanded to include all apartments and condominiums in the City.

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Enclosed is a recycling calendar indicating your specific days of pick up and a sample of the material we will be distributing to your residents.

Sincerely,

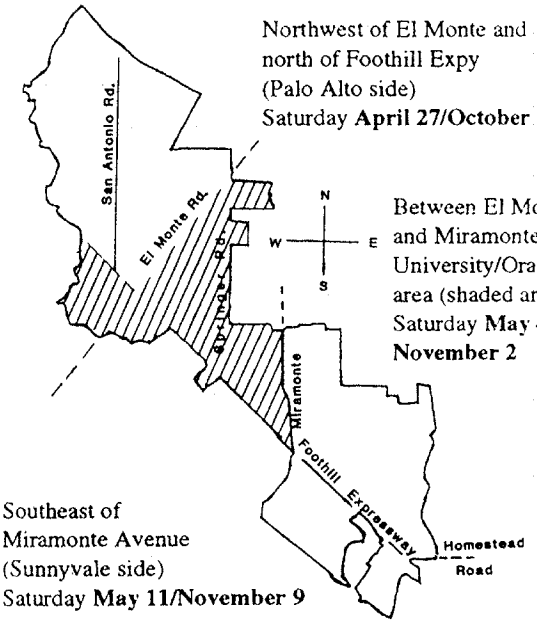
Lyn Cruzen

Lyn Cruzen
Public Awareness Assistant

QUARTERLY GARBAGE BILL INSERTS

Los Altos 1991 Cleanup Dates

Cleanup service is limited to
City of Los Altos **residential can service customers only!**
No Loose Trash Accepted!



Northwest of El Monte and north of Foothill Expy (Palo Alto side)
Saturday **April 27/October 26**

Between El Monte and Miramonte plus University/Orange area (shaded area)
Saturday **May 4/ November 2**

Southeast of Miramonte Avenue (Sunnyvale side)
Saturday **May 11/November 9**

Watch for more information and revised rules to be mailed to you in early April.

For more information, please call the Los Altos Garbage Company at **961-8040**.

Remember— no loose trash!

The City of Los Altos 2/91

Information for 1991 Mark Your Calendar

- **Household Toxic Dropoff Days**
- **Spring and Fall Cleanup Days**

Watch for inserts in your quarterly garbage bill. They contain important information.

Curbside recycling is a service of Los Altos Garbage Company. For information, route calendars and burlap bags call 961-8040.

This information is provided by the City of Los Altos as a service for its residents

Reduce Reuse Recycle

4 PAGES - FINISHED SIZE 3"X6"

Public Landfill/Dump Information

The City of Los Altos does not operate its own landfill. Basic information on nearby public landfills is provided below.

Mountain View Sanitary Landfill—
1780 Amphitheatre Parkway (North Rengstroff turns into Amphitheatre or from north Shoreline Blvd turn left onto Amphitheatre)
For more information call 940-9682

BFI San Carlos Transfer Station —
225 Shoreway Rd. in San Carlos. Take the Holly Street exit east (which becomes Redwood Shores) off Hwy 101, then north on Shoreway
For more information call 592-2411

BFI Newby Island Landfill — west end of Dixon Landing Road off Hwy 880 in San Jose (2 miles north of Hwy 237)
For more information call (408) 262-5558
The Recyclery also accepts items not included in curbside program — (408) 262-1401

For curbside recycling information, route calendars and collection containers call 961-8040.

The City of Los Altos 7/91

Los Altos Solid Waste Reduction and Disposal Opportunities

- **Fall CleanupDays**
- **Hazardous Waste**
- **Landfill Information**

Watch for inserts in your quarterly garbage bill. They contain important information.

This information is provided by the City of Los Altos as a service for its residents

4 pages finished size 3½"

Household Hazardous Waste

Changes are underway in the city's residential household hazardous waste program (HHW). The thrice yearly drop-off days are discontinued. Santa Clara County is working with cities to establish a countywide program that will provide drop-off opportunities every two to three weeks. This new program with increased drop-off opportunities is expected to begin this October.

Watch for information on the new countywide program this fall.

❖ Set out used motor oil for curbside recycling — for more information call LAGCo at 961-8040
❖ Latex (water based) paint may be dried out and placed in regular trash
❖ Pour dribs and dabs of oil based paint into one paint can — dry and through empties away

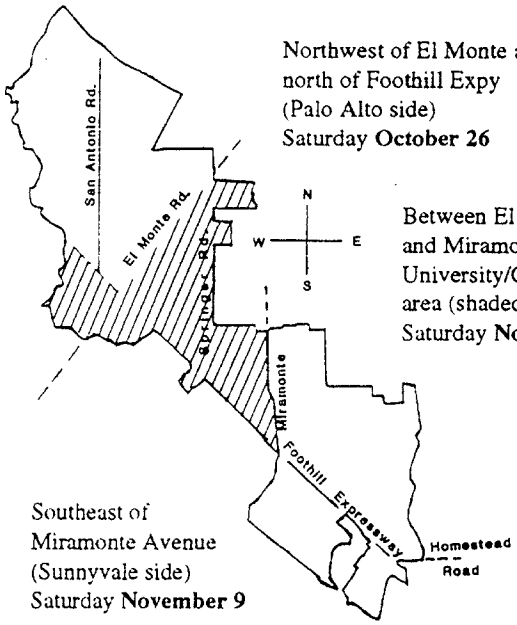
***All* empty containers may go in the trash**

It is illegal to place hazardous materials on public or private property or into sewers or storm drains. According to federal CERCLA law property owners are responsible for the proper disposal of hazardous materials. Licensed hazardous waste specialists are listed in the yellow pages under "waste haulers".

If you see anyone improperly disposing or dumping waste of any type, call the police department. With a vehicle license number and a description, they will be prosecuted.

Los Altos Fall Cleanup Dates

Cleanup service is limited to
City of Los Altos **residential can service customers only!**
No Loose Trash Accepted!



Northwest of El Monte and north of Foothill Expy (Palo Alto side) Saturday **October 26**

Between El Monte and Miramonte plus University/Orange area (shaded area) Saturday **November 2**

Southeast of Miramonte Avenue (Sunnyvale side) Saturday **November 9**

These items will **not** be accepted: **rock, dirt, concrete, asphalt, construction materials, lumber, hazardous materials, explosives or automotive parts.**

For more information, please call the Los Altos Garbage Company at **961-8040**.

Please remember— no loose trash!

Household Toxic Drop-off Days

Saturday April 6, 1991
St. Simons Church
1860 Grant Road, Los Altos

Saturday July 13, 1991
DeAnza College/McClellan Road
Cupertino

10 a.m. to 3 p.m.

- ❖ Expect a wait of 15-45 minutes
- ❖ You must be in an automobile, truck or van
- ❖ Do not arrive before 10 a.m. or after 3 p.m.

- ❖ State law prohibits transportation of more that 5 gallons or 50 pounds by a householder. You could be turned away or charged for the excess quantity.
- ❖ This is for household materials only — no businesses will be allowed.
- ❖ Latex (water based) paint does not need to be dropped off — dry out and place in regular trash
- ❖ Pour dribs and dabs of oil based paint into one paint can — dry out and throw empties away
- ❖ Materials must be labeled

❖ Set out used motor oil for curbside recycling

All empty containers may go in the trash

Not Hazardous
Laundry Products, Medicines,
Furniture Polish, Empty Aerosol Cans,
Bathroom Cleaners
Read Labels for Disposal Instructions

Home Darkroom Users

❖ Spent fixer and bleach fix contain silver and it is illegal to pour into the sewer system. For more information call 379-2598

GARBAGE BILL INSERTS
3"X6" CARDS/DOUBLE SIDED

Public Landfill/Dump Information

The City of Los Altos does not operate its own landfill. Basic information on nearby public landfills is provided below.

BFI Newby Island Landfill - west end of Dixon Landing Road off Hwy 880 in San Jose (2 miles north of Hwy 237)

Hours:

Monday-Friday	6 a.m. to 6 p.m.
Saturday	8 a.m. to 4 p.m.

Rates:

Loose yardage	$4.30/can (estimated by 32 gal. can)
Minimum charge	$8.60
Furniture/applicances	$11.50 each

For more information call 408/262-5558

BFI San Carlos Transfer Station - 225 Shoreway Rd. in San Carlos. Take the Holly Street exit east (which becomes Redwood Shores) off Hwy 101, then north on Shoreway.

Hours:

Open daily	8 a.m. to 5 p.m.

Rates:

Cubic yardage	$6.50/yard
Appliances/furniture	$8 each

For more information call 592-2411.

October 1988

MONEY SAVING INFORMATION

PUBLIC LANDFILL/DUMP INFORMATION

BFI Newby Island Landfill - west end of Dixon Landing Rd off Hwy 17 (880) in San Jose (2 miles north of Hwy 237).

Hours:	Monday-Friday	6 a.m. to 5 p.m.
	Saturday	8 a.m. to 4 p.m.
Rates:	Loose yardage (estimated by 32 gal. can)	$3 can
	Minimum charge	$6
	Furniture/appliances	$8 each

For more information call 408/262-5558

San Carlos Transfer Station - 299 Shoreway Rd in San Carlos. Take the Holly Street exit east (which becomes Redwood Shores) off Hwy 101, then north on Shoreway.

Hours:	Open daily	8 a.m. to 5 p.m.
Rates:	Cubic yardage	$6.50/yard
	Appliances/furniture	$5 each

For more information call 592-2411

City of Mountain View Landfill - Charleston Rd just west of Stierlin Road.

Hours:	Open daily	8 a.m. to 5 p.m.
Current non-resident rates:		
	Cubic yardage	$12/yard
	Mattress, stuffed furniture	$15 each
	Appliances	$12 each

For more information call 966-6311 during business hours

Note: The Palo Alto Landfill is closed to non-Palo Alto residents. The recycling center and compost program are still open to the general public. Call 329-2655 for more infomation on materials accepted.

The above rates and hours were in effect October 1986.

Los Altos Fall Cleanup Days

Collection begins at 7 a.m. All prepared rubbish must be placed *at the curb* before 7 a.m. Material should not be put out prior to seven days before the scheduled pick-up day!

Household debris and garden trimmings must be in boxes, cartons or heavy duty plastic garbage bags. Tree trimmings must be bound in bundles no larger than 3' X 2'. Household appliances and furniture will be picked up *only* if they can be easily managed by two men. See map and dates on other side.

Clean up your yard for rat control

Watch for 1991 Curbside Recycling Calendar in late December
Call LAGCo 961-8040 if not received by January

Household Toxics Drop-off Days

Saturday April 20
St. Simons Church • 1860 Grant Road
Los Altos
10 a.m. to 3 p.m.

Saturday July 13
De Anza College • Mc Clellan Road
Cupertino
10 a.m. to 3 p.m.

This information is for homes in the City of Los Altos · 10/90

Oct 88

Curbside Recycling

* * *

Los Altos Has It Easy!

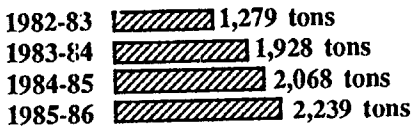
Residents of the City of Los Altos continue to take advantage of our easy way to recycle at curbside. Twice a month pick-ups include newspaper, used motor oil, metal cans (aluminum and tin) and glass.

- **Watch for the 1989 Recycling Calendar to be *mailed* near the end of this year.**
- Continue to recycle glass and metal beverage containers curbside. Beverage containers are "redeemed" at our processing center and the "bottle bill penny" is added to the City's recycling program fund.
- Place recyclables *out the night before* your scheduled pick-up day or before 6 a.m. on pick-up day.
- If you need **burlap bags** or **oil containers**, call Los Altos Garbage Company at **961-8040**.
- Please remember this program has pick-ups scheduled twice a month - **not** every other week.
- For more information, please call Los Altos City Hall at 948-1491.

Oct 1986

RESIDENTS MAKE RECYCLING PROGRAM SUCCEED

Recycling is a way of life for 68 percent of the homes in Los Altos. The curbside recycling program is available to **all** residents within the city limits. Residents place cans, glass, newspaper and motor oil out for pick-up twice a month. Flattened corrugated cardboard may be taken to bins located at the two fire stations in the City.



Motor Oil: **1984-85 - 2,799 gallons**
1985-86 - 4,687 gallons

1986 averaged one-third ton per participating household

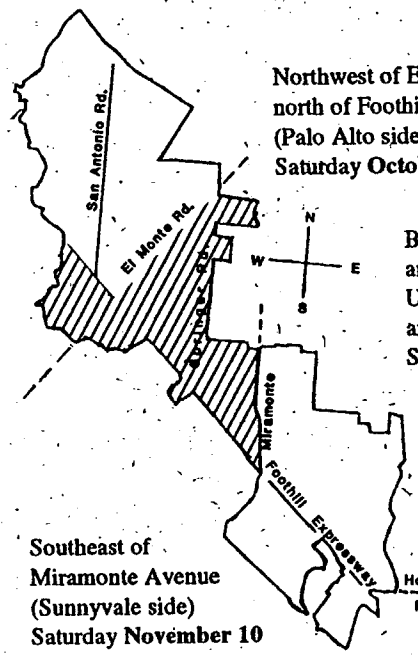
A 1982 grant from the State helped the City purchase the unique recycling van and trailer. The City has contracted with the Los Altos Garbage Company to provide a one-man crew to operate the van and maintain it. On certain "heavy" days and routes, the City also has a truck picking up newspapers.

Every year a special calendar is delivered to each home informing residents of their neighborhood pickup-day schedule. Watch for the 1987 calendar to be delivered door-to-door in December. Burlap bags for glass and cans, as well as containers for motor oil are provided free upon request.

Los Altos provides convenient curbside recycling with a minimum of equipment and personnel. Our tonnages increase because citizens are aware of the benefits of recycling.

Los Altos Fall Cleanup Dates

Cleanup service is limited to *City of Los Altos* residential can service customers only!
No Loose Trash Accepted!



Northwest of El Monte and north of Foothill Expy (Palo Alto side) Saturday **October 27**

Between El Monte and Miramonte plus University/Orange area (shaded area) Saturday **November 3**

Southeast of Miramonte Avenue (Sunnyvale side) Saturday **November 10**

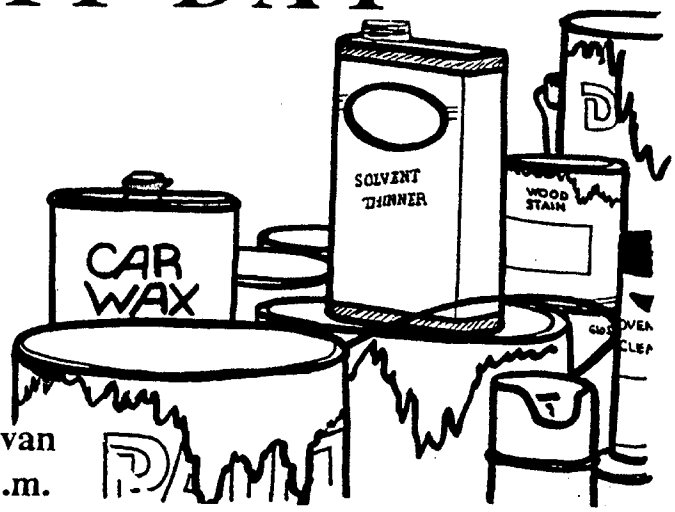
These items will **not** be accepted: **rock, dirt, concrete, asphalt, construction materials, lumber, hazardous materials, explosives or automotive parts.**

For more information, please call the Los Altos Garbage Company at **961-8040**.

Please remember no loose trash!

INSERT TO NEWSLETTER - 2 SIDES

HOUSEHOLD TOXICS DROP-OFF DAY



Saturday April 6, 1991
10:00 a.m. to 3:00 p.m.

(please do not arrive before 10 a.m.)

St. Simons Church
1860 Grant Road • Los Altos

✓ Expect a wait of 15-45 minutes
✓ You must be in an automobile, truck or van
✓ Do not arrive before 10 a.m. or after 3 p.m. Materials brought before or after the event will not be accepted

✦ *All* toxic products must be in *tightly closed,* labeled containers. Open or unlabeled containers will not be accepted.

✦ State law limits transportation of household materials to five gallons or 50 pounds. You could be turned away or charged for bringing excess quantities.

✦ This program is for residential use only. Proof of residence will be required for cities of Los Altos, Mountain View, Cupertino, Los Altos Hills and their unincorporated county areas.

✦ Products that will not be accepted include firearms, compressed gas cylinders, radioactive materials and explosives.

✦ Please do not bring used motor oil or latex paint (see shaded box to right).

✦ Laundry products are not hazardous materials. Generally, products used in drains and medicines should not be brought to the drop-off. Follow manufacturer's instructions for use and disposal.

Household materials are considered hazardous with improper use, storage or when they require disposal.

Important Tips

Use this drop-off day wisely

✓ Set out used motor oil for curbside recycling — for more information call Los Altos Garbage Company at 961-8040
✓ Latex (water based) paint does not need to be dropped off — dry out and place in regular trash
✓ Pour dribs and dabs of oil based paint into one paint can — dry and throw empties away
✓ Buy only what you need and use it up according to directions — better still, use non-toxic substitutes
✓ Be prepared to identify materials being brought for drop-off

Disposal of hazardous materials can cost as much as five to ten times what you paid to bring it into your house.

All empty containers may go in the trash

For more information about the drop-off day, call Los Altos City Hall at 948-1491.

HOUSEHOLD HAZARDOUS WASTE DISPOSAL CHART

The following chart is based on material prepared by the Water Pollution Control Federation to help you establish the most effective means of disposing of typical hazardous wastes used around your house or garden.

Drain indicates products which can be poured down the drain or toilet with **plenty of water.** ***Do not use storm drains or gutters.*** If you have a septic tank, additional caution should be exercised, read labels to determine if a product could damage the septic tank.

Trash indicates materials which **cannot** be poured down the drain, but can be safely disposed of in the trash that goes to the sanitary landfill. Be certain the material is properly contained before it is put out for collection or carried to the landfill.

Hazardous wastes should be saved for a collection day or given to a licensed hazardous waste contractor listed under waste haulers in the Yellow Pages.

Before bringing partially used products to the drop-off, check with friends or non-profit organizations that might be able to make use of these products.

Kitchen

Aerosol cans (empty)	Trash
Aluminum cleaners	Hazardous
Ammonia based cleaners	Hazardous
Bug Sprays	Hazardous
Drain cleaners	Drain
Floor care products	Hazardous
Furniture polish	Trash
Metal polish	Hazardous
Window cleaner	Drain
Oven cleaner (lye based)	Hazardous
Powdered Cleansers	Drain

Bathroom

Alcohol based lotions (aftershaves, perfumes)	Drain
Bathroom cleaners	Drain
Disinfectants	Drain
Permanent Lotions	Drain
Medicine (expired)	Drain
Nail polish	Trash
Nail polish remover	Hazardous
Toilet bowl cleaner	Drain
Tub and tile cleaner	Drain
Prescription drugs	Drain

Garage

Antifreeze	Hazardous
Auto transmission fluid	Hazardous
Auto body repair products	Trash
Battery acid or battery	Hazardous
Brake fluid	Hazardous
Car wax:	
Solid	Trash
Liquid	Hazardous
Diesel fuel	Hazardous
Fuel oil	Hazardous
Gasoline	Hazardous
Kerosene	Hazardous
Motor oil	Hazardous
(Los Altans may use curbside recycling for oil)	
Windshield wash solution	Drain

Gardening

Fertilizer	Hazardous
Fungicide	Hazardous
Insecticide	Hazardous
Rat Poison	Hazardous
Weed killer	Hazardous

Workshop

Paint brush cleaner/solvent	Hazardous
Paint brush cleaner (TSP)	Trash
Aerosol cans (empty)	Trash
Cutting oil	Hazardous
Glue (solvent based)	Hazardous
Paint - latex	Trash -let dry out
Paint - oil/solvent based (pour "dabs" into one can for drop-off _ put empty cans in the trash)	Hazardous
Paint thinner	Hazardous
Paint stripper	Hazardous
Paint stripper (lye based)	Hazardous
Rust remover	Hazardous
Turpentine	Hazardous
Varnish	Hazardous
Wood preservative	Hazardous

Miscellaneous

Artists' paints, mediums	Hazardous
Dry cleaning solvents	Hazardous
Dry cell batteries	Hazardous
Fiberglass epoxy	Hazardous
Gun cleaning solvents	Hazardous
Lighter fluid	Hazardous
Mercury batteries	Hazardous
Moth balls	Hazardous
Photographic chemicals	Hazardous
Shoe polish	Trash
Swimming pool acid	Hazardous

All empty containers may go in the trash

The best way to dispose of toxic products is to use them up according to the packaged directions, or give them to friends and organizations that could utilize them. Better still, buy and use non-toxic substitutes whenever possible.

HANDOUT AT EVENT

Only for residents of Cupertino, Los Altos, Mountain View, Los Altos Hills and the unincorporated County areas surrounding these communities and Stanford

• Proof of residency will be required •

Please reamin in your vehicle until you are past the unloading area

Next Household Toxics Drop-off Day

July 14

10 a.m. to 3 p.m.

De Anza College • Cupertino

Mc Clellan Road Entrance

Helpful Hints

Use harmless alternatives whenever possible. For example: use cedar chips or scented flowers instead of mothballs. Use water based paint (latex) instead of oil based paints. Instead of furniture polish use lemon juice and vegetable oil.

Buy only the amount you think will do the job. Then use it all, according to directions.

All EMPTY and dry containers may go into your regular trash.

The county agricultural department will take any yard and garden pesticides if they are in original labeled containers. For more information call (408) 299-6930.

If you can not wait until the next drop-off day for your city, look in the phone book yellow pages under "waste disposal". For a fee, these companies will pick up your materials.

Dried out properly, latex (water based) paint can be thrown into your regular trash. For small amounts, let the paint dry **solid** and with the lid off put into the trash. With fuller cans, use kitty litter as an absorbant to help **dry and solidify** the paint before putting into the trash.

Use up small amounts of oil based paint by painting old boards, cardboard or plastic. The **dried** boards and **dry** can with the lid off can go in the trash.

Donate unused products to friends or organizations who could use them. For instance, community theatres might need paint.

Residents of Mountain View, Cupertino and Los Altos can put used motor oil out for curbside recycling. Call your garbage company for more information.

Thank you

4/21/90

HANDOUT AT EVENT

Recycle Pickup Table

Materials that are often brought to Drop-off Days such as this could be used by someone else. Selected products (chemicals) that would otherwise require costly special handling and disposal will be recycled. These commodities will be made available to the public for reuse at no charge. The recycle tables are located after the unloading area before exiting the site. If you wish to pickup recycled chemicals, please complete the Release and Indemnity agreement below. To keep the flow of traffic safe and moving, please take only a few minutes at the recycle tables.

Release and Indemnity Agreement

The County of Santa Clara, the City of Los Altos, Mountain View, Cupertino and the Town of Los Altos Hills (the Agencies) are jointly conducting a Household Hazardous Waste Collection Project. Residents of these cities and unincorporated county residens may dispose of cerain hazardous materials through this project. Selected chemicals which would otherwise require special handling and disposal will be recycled. These commodities will be made available to the puclic for reuse at no charge.

The Agencies have not characterized the Hazardous Materials offered for reuse, and make no express or implied representations concerning:

1) the physical or chemical characteristics of the materials including the purity, color texture, or age of the material;
2) the manner in which the materials may be safely transported, stored, treated, disposed of, used, or otherwise managed;
3) any adverse effects on human health and the environment.

The undersigned also agrees to indemnify and hold harmless the Agencies from any and all liability, damages, costs, claims, demands, and expenses of whatever type or nature, that may arise out of, or in any manner be connected with the Hazardous Materials.

The undersigned has read and understands this Release and Indemnity Agreement and agrees to comply with all of its terms.

_____
Name (Please Print)

_____
Signature

_____
Address

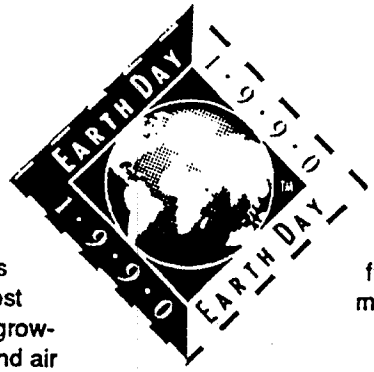
_____
Date

Please list the type and quantity of materils taken for use

Quantity	Size	Type of Material

EVENT HANDOUT 1990

EARTH DAY 1990 GREEN PLEDGE



BECAUSE.....our planet today faces severe environmental crises such as global warming, rain forest devastation, top soil destruction, growing world population, and water and air pollution.....

BECAUSE.....the planet's future depends on the commitment of every nation, as well as every individual.....

I pledge to do my share in saving the planet by letting my concern for the environment shape how I :

act: I pledge to do my utmost to recycle, conserve energy, save water, use efficient transportation, and try to adopt a lifestyle as if every day were Earth Day.

purchase: I pledge to do my utmost to buy and use products least harmful to the environment. Moveover, I will give my business first to corporations that promote global environmental responsibility.

vote: I pledge to vote and support those candidates who demonstrate an abiding concern for the environment.

support: I pledge to support the passage of local, state and federal laws and international treaties that protect the environment.

Earth Day 1990 – April 22, 1990

LET EARTH DAY KNOW THAT YOU HAVE JOINED THOUSANDS OF OTHERS IN TAKING THE GREEN PLEDGE!

Signature

Name (please print)

Street

City State Zip

I participated in a Household Toxics Drop-off Day!

Clip at the dotted line and return this form to:
Earth Day 1990
2801 Leavenworth St.,3rd Fl.
San Francisco, CA 94133

You Can Make a Difference!

It's simple when you practice the **3 Rs** for handling waste at home and work. **Reduce** it, **Reuse** it, and **Recycle** it whenever possible. Here's a few easy ways to get started.

Recycling

- Recycle all metal, glass, newspaper, card board, paper and junk mail.
- Ask for recycled paper at stationers and printers.
- Buy products in recyclable containers.
- Avoid plastics.
- Avoid disposable plates, cups and utensils.
- Use cloth diapers or a diaper service.
- Use rags instead of paper towels.
- Bring a coffee mug instead of using disposable cups.
- Use both sides of paper sheets.
- Recycle used motor oil.
- Compost food wastes and yard debris.
- Mend and repair rather than discard and replace.
- Buy products in bulk or those that use the least amount of packaging.
- Buy used goods (junk yards, thrift stores, garage sales).
- Take your grocery bags back to the store for reuse or bring your own burlap bag.

Transportation

- Use public transportation, carpool, bike or walk at least once a week.
- Drive a fuel efficient car.
- Keep your car well tuned.
- Live close to your place of work.
- Call ahead before you shop and consolidate errands.

Trees/Animals

- Plant trees in your community.
- Plant fruit and nut trees in your backyard.
- Don't buy products made from tropical hardwoods.
- Don't buy products made from endangered or overexploited plants or animals (furs, ivory, reptile skin, tortoise shell).
- Buy cosmetics that are free of animal products.
- Buy a living Christmas tree.

Home Energy Use

- Insulate, caulk and weatherstrip your home.
- Install a timer on your thermostat.
- Insulate floors with carpeting.
- Install double-paned windows.
- Wear a sweater rather than turn up the thermostat.
- Install a solar water heater.
- Insulate your water heater and storage tank.
- Keep your water heater at 130 degrees.
- Use energy efficient appliances.
- Use fluorescent instead of incandescent light bulbs.
- Use low watt light bulbs and turn off lights and appliances when not in use.
- Plant trees to shade your house in the summer.
- Hang your clothes in the sun to dry.
- Keep lint screen and outside exhaust on dryer clean.
- Call local PG&E for an energy audit.

Water Conservation

- Install a water-saving showerhead.
- Take showers rather than baths.
- Install a space occupier in your toilet.
- Install sink faucet aerators.
- Turn off the water between rinses when shaving and brushing teeth.
- Use a broom rather than a hose to wash walk ways.
- Don't let the hose run when you wash your car.
- Water plants and lawn in the morning to minimize evaporation.
- Install a drip-irrigation watering system.
- Plant drought-tolerant plants.
- Have your water tested to find out what's in it.

Pesticides/Eating Habits

- Eat lower on the food chain.
- Buy organic foods to discourage pesticide use.
- Grow your own food using alternatives to pesticides, rather than a lawn.
- Buy foods without additives and preservatives (TBHQ, BHT,BHA, EDTA).
- Avoid highly processed foods.
- Support food co-ops and farmers' markets.
- Buy foods grown or produced locally.
- Be creative with leftover food.
- Read labels and compare before purchasing.

Hazardous Products

- Buy phosphate free, bio-degradable soaps and detergents, or ask your market to stock them
- Use alternatives to toxic household products (labels with caution, corrosive, toxic).
- Dispose of household hazardous wastes properly (paint, motor oil, nail polish remover). Call your city's waste management program.
- Use rechargable batteries.
- Purchase appliances with alternatives to ozone-damaging chlorofluorocarbons.
- Think about purchasing a car without air conditioning to avoid using CFCs.
- Ask your service station to use CFC recovery equipment when repairing auto air conditioning.
- Purchase a halon-free fire extinguisher.
- Use wax paper or cellophane bags.

Activism

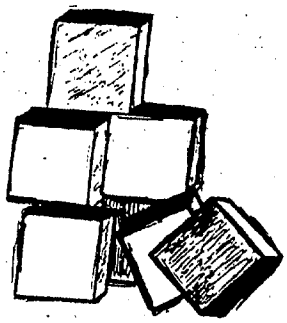
- Educate yourself and others on environmental issues.
- Purchase from environmentally responsible businesses.
- Support small, local businesses.
- Contact elected representatives through letters, telegrams, phone calls and visits to express your environmental concerns.
- Support legislative initiatives that encourage manufacturers to eliminate hazardous wastes as part of the manufacturing process.
- Get involved in local politics to influence local policy decisions.
- Take time to learn about and enjoy nature.
- Volunteer time and/or contribute resources to a local environmental group.
- Pressure fast food chains and other businesses to end wasteful packaging practices.

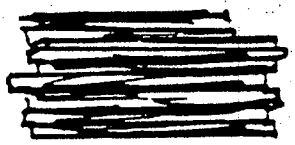
Earth Day 1990
2801 Leavenworth, 3rd Fl.
San Francisco, CA 94133
415/346-5263

RESIDENTIAL CARDBOARD DROP-OFF HANDOUT (2 SIDES)

Cardboard Recycling in Los Altos

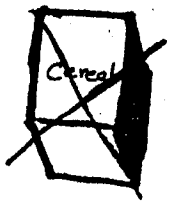
The Yes

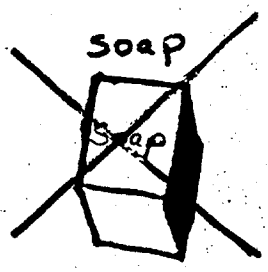




Clean, flattened, corrugated cardboard. Remove packing slip holder and large staples

The "Know"





NO waxed or thin cardboard including cereal boxes, laundry soap boxes.

NO shiny or colored cardboard

NO foam packing attached to boxes.

NO styrofoam "popcorn"

For more information:
Los Altos Garbage Company
415/961-8040

printed on recycled paper

Corrugated Cardboard Recycling Information

Why recycle cardboard?

California Assembly Bill 939, the Integrated Waste Management Act of 1989, took effect January 1, 1990. AB 939 requires each city in California to divert 25 percent of all solid waste from landfills by 1995 through source reduction, recycling, and composting programs. By the year 2000, the required diversion must be 50 percent.

Where are the cardboard recycling sites?

The corrugated cardboard recycling sites for residents of the City of Los Altos are located at [redacted] the Loyola Fire Station on Fremont Avenue. The receptacle is a large metal bin in the parking lot.

Can all cardboard be placed there for recycling?

No. Only corrugated cardboard will be accepted for this program.

What type of cardboard is *not* acceptable?

The type not acceptable is waxed or thin cardboard. Cereal boxes and laundry soap type boxes are not acceptable. Boxes with attached styrofoam are not acceptable.

What happens if non-conforming material is put in the recycling bins?

Inappropriate material such as cereal boxes and styrofoam "popcorn" will result in the whole bin being rejected and then sent to the landfill.

recycle

printed on recycled paper

Los Altos Commercial Cardboard Recycling

THE REWARD

Conserving resources to save a tree is only one of many benefits to recycling. By participating in recycling programs, businesses may also:

- reduce their waste enough to lower regular garbage service costs
- be recognized as leaders for their commitment to a cleaner environment
- postpone substantial garbage rate increases by keeping local landfill sites available longer
- prevent Los Altos from incurring non-compliance fines mandated in AB939
- minimize clutter and reduce safety and fire hazards in storage areas

WINNING THE GAME

Future recycling efforts will include programs such as office paper recycling and yard rubbish composting to further reduce Los Altos' waste and meet goals mandated by AB939.

The better the teamwork, the longer Los Altos can use the playing field.

For more information
Los Altos Garbage Company 961-8040
City of Los Altos 948-1491

Printed on Recycled Paper

GAME PLAN

COMMERCIAL CARD BOARD RECYCLING BROCHURE (6 PANELS - 2 SIDES)

At the current rate of waste disposal, half of all landfills in America will be full in the next five years. Residents and businesses of Los Altos generate 87 tons of waste a day.

Because of the glut of packaging that is disposed of in our landfills today, not only is waste reduction socially responsible, it is required by the state.

An enthusiastic team of residents and businesses in Los Altos are dedicated to winning the waste reduction game.

THE COACHES

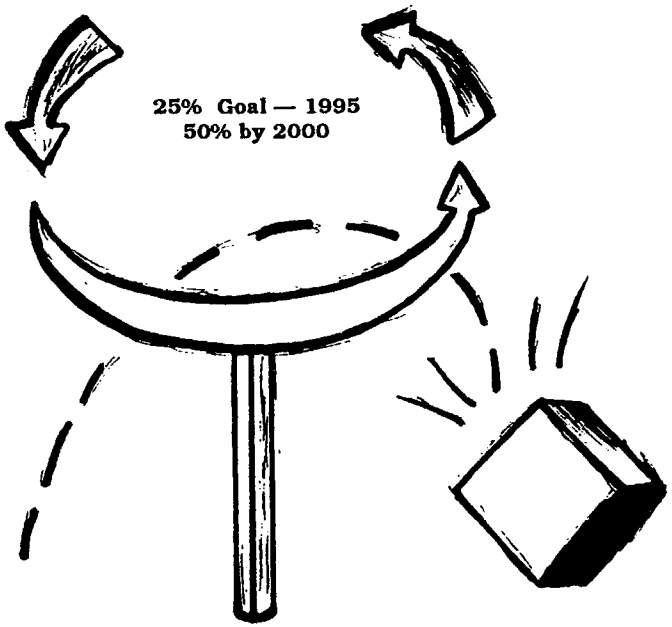
California Assembly Bill 939, the Integrated Waste Management Act of 1989, took effect January 1, 1990. AB939 requires each city in California to divert 25 percent of all solid waste from landfills by 1995 through source reduction, recycling, and composting programs. By the year 2000, the required diversion must be 50 percent.

To meet mandated goals and bring recycling to businesses, the city of Los Altos has contracted with the Los Altos Garbage Company to begin commercial collection of corrugated cardboard.

THE PLAYERS

Since a majority of residents already participate in curbside recycling, more recent efforts to reduce waste have been directed toward Los Altos businesses. The *Citizen's Advisory Committee on Plastics and the Environment* estimated that almost 40 percent of all commercial waste leaving Los Altos is recyclable cardboard.

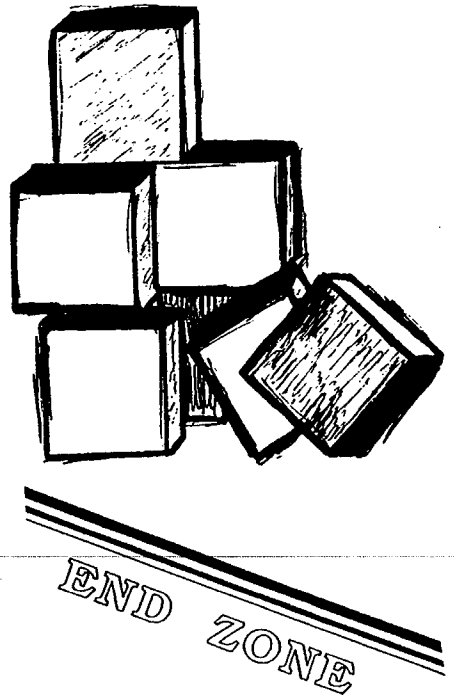
This new citywide recycling program allows merchants to leave flattened corrugated cardboard outside at least twice a week for collection by Los Altos Garbage Company.



THE STRATEGY

Los Altans are division champions in waste reduction programs. Since 1982 they have had a successful curbside recycling program to collect newspapers, bottles, and cans from residents. Currently, about 60 percent of all Los Altos homes participate in curbside recycling, moving Los Altos nine percent closer to its waste reduction goal.

In 1986 the Household Toxics Drop-Off program was introduced. Three times each year the city collects and disposes of unused products which could otherwise harm our soil and water. Collected latex paint, used motor oil, and automobile batteries are recycled.



COMMERCIAL CARDBOARD RECYCLING INSTRUCTIONS

(2 SIDES)

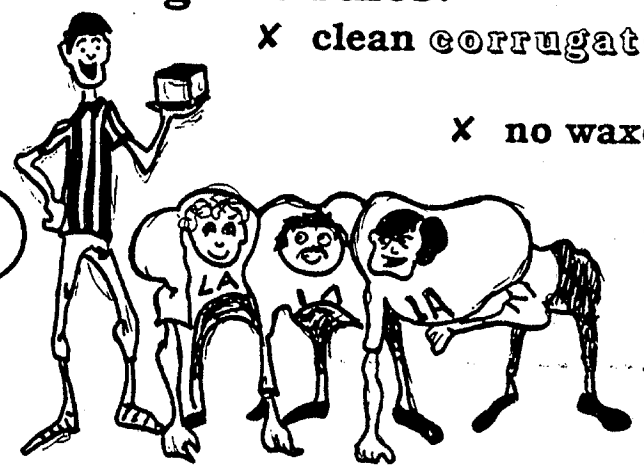
GAME RULES

City of Los Altos Commercial Cardboard Recycling Program

Your team plays on Monday, Wednesday, and Friday
Kick-off is September 17

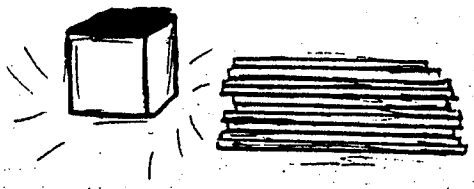
Pre-game rules:

1



- ✗ clean corrugated cardboard only
- ✗ no waxed or thin cardboard
- ✗ no foam packing, wood framing, or garbage
- ✗ remove packing slip holder and large staples

2

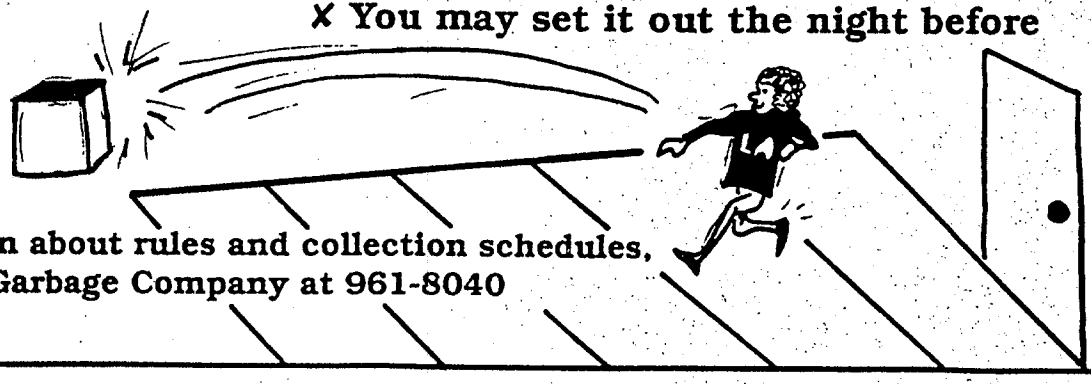


✗ Tackle your cardboard until it is flat

3

Place cardboard just past the three yard line (about 10 feet) from your door, or where it is visible to the collector

- ✗ Collection begins at 6 a.m.
- ✗ You may set it out the night before

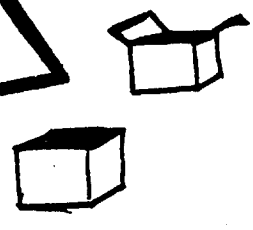


For information about rules and collection schedules, call Los Altos Garbage Company at 961-8040

Scorecard

How Everybody Wins With Corrugated Cardboard Recycling

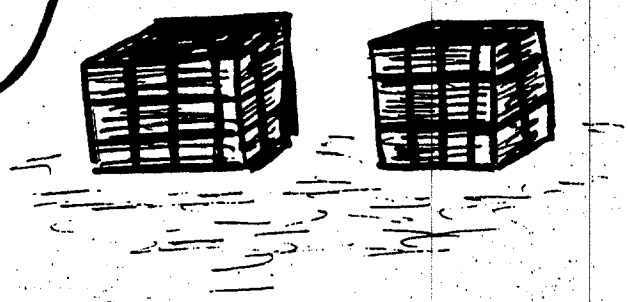
Los Altos businesses receive products packed in corrugated cardboard boxes



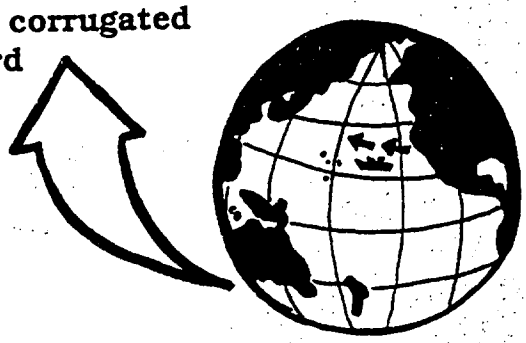
Merchant sorts and flattens boxes that are set out for pickup

Los Altos Garbage Company collects the cardboard and takes it to a processor within the Bay Area

The processor bails the cardboard and trucks it to a port in San Franciso



Bailed used corrugated cardboard is shipped to the far east where it is reprocessed and made into new boxes of grey cardborad



Foreign made products are shipped to the U.S. in boxes made from recycled corrugated cardboard

The City of Los Altos
September 1990

AGREEMENT FOR DISPOSAL OF MUNICIPAL SOLID WASTE

THIS AGREEMENT is made and entered into this _____ day of APR 11 1989, 1989, by and between the CITY OF LOS ALTOS, CALIFORNIA, a California municipal corporation (herein "City"), and INTERNATIONAL DISPOSAL CORP. OF CALIFORNIA, a California corporation (herein "Contractor"), which is a wholly-owned subsidiary of Browning-Ferris Industries, Inc., a Delaware corporation.

R E C I T A L S:

WHEREAS, City desires to contract for recycling and long-term disposal of Municipal Solid Waste (as defined herein); and

WHEREAS, Contractor owns and operates the Newby Island sanitary landfill (the "Disposal Facility") and is in the process of establishing a recycling facility thereat; and

WHEREAS, City and Contractor desire that the Disposal Facility be maintained as a fully permitted disposal site in order to receive Municipal Solid Waste from City for recycling and disposal in accordance with this Agreement.

NOW THEREFORE, in consideration of the mutual promises, covenants and conditions contained in this Agreement, and for other good and valuable consideration, the parties to this Agreement hereby agree as follows.

SECTION 1. Definitions.

The following capitalized names and terms shall have the respective meanings indicated:

1.1 Allocation Quantity

"Allocation Quantity" means the maximum Tons of Municipal Solid Waste (including Municipal Solid Waste collected in Debris Boxes), calculated at the entrance to the Disposal Facility, which City shall be entitled to deliver or have delivered to the Disposal Facility for Recycling and/or disposal in accordance with this Agreement. City's Allocation Quantity, including the portion thereof attributable to Municipal Solid Waste collected in Debris Boxes, is set forth in Exhibit "A", attached hereto and made a part hereof; provided, however, City's Allocation Quantity shall automatically be reduced by the unused portion of the Allocation Quantity attributable to Municipal Solid Waste collected in Debris Boxes at such time as City delivers or causes delivery of Debris Box Municipal Solid Waste to an alternative sanitary landfill pursuant to Section 2.4. (For purposes hereof, the unused portion of the Allocation Quantity attributable to Municipal Solid Waste collected in Debris Boxes shall be the product of (i) the unused portion of the Allocation Quantity multiplied by (ii) a fraction, the numerator of which is the total amount of Municipal Solid Waste which has been collected in Debris Boxes since November 21, 1988, and the denominator of which is the total amount of Municipal Solid Waste (exclusive of Publicly Hauled Waste) which has been delivered to the Disposal Facility since November 21, 1988). City's Allocation Quantity shall not include amounts of Publicly Hauled Waste delivered to the Disposal Facility. City's Allocation Quantity shall include amounts of Municipal Solid Waste delivered to the Disposal Facility by or on behalf of a Transferee Municipality pursuant to Section 6.

1.2 Ash

"Ash" means the material remaining after incineration of Municipal Solid Waste, including bottom ash, fly ash and water.

1.3 Biomedical Waste

"Biomedical Waste" means waste which may be reasonably considered infectious, pathological or biohazardous, originating from hospitals, public or private medical clinics, departments or research laboratories, pharmaceutical industries, blood banks, forensic medical departments, mortuaries, veterinary facilities and other similar facilities and includes equipment, instruments, utensils, fomites, laboratory waste (including pathological specimens and fomites attendant thereto), surgical facilities, equipment, bedding and utensils (including pathological specimens and disposal fomites attendant thereto), sharps (hypodermic needles, syringes, etc.), dialysis unit waste, animal carcasses, offal and body parts, biological materials, (vaccines, medicines, etc.) and other similar materials, but does not include any such waste which is determined by evidence reasonably satisfactory to Contractor to have been rendered non-infectious, non-pathological and non-biohazardous.

1.4 City

"City" means the City of Los Altos, California, a municipal corporation organized under the laws of the State of California, all of the geographic area lying within the municipal boundaries of the City and all of the geographic area lying within such unincorporated areas of Santa Clara County, California as are set forth and described in Exhibit "B", attached hereto and made a part hereof.

1.5 Clean Up Campaign

"Clean Up Campaign" means the annual, semi-annual or other similar periodic program conducted by City, its agents and/or a Designated Hauler the purpose of which is to provide residents of City a means of disposing of bulky wastes and/or similar materials which are not collected

through the regular Municipal Solid Waste collection service.

1.6 Contractor

"Contractor" means International Disposal Corp. of California, its successors and assigns.

1.7 Curbside Recycling Credit

"Curbside Recycling Credit" has the meaning set forth in subsection 3.4.1.

1.8 Curbside Recycling Program

"Curbside Recycling Program" means the collection of recyclable materials from Residential Waste in the same or similar manner as described in subsection 3.4.2.

1.9 Debris Box

"Debris Box" means a roll-off waste container used to collect, without compaction, construction debris and similar materials.

1.10 Designated Hauler

"Designated Hauler" means the waste haulers named by City pursuant to subsection 3.3.2 to deliver Municipal Solid Waste to the Disposal Facility.

1.11 Disposal Facility

"Disposal Facility" means the Newby Island sanitary landfill, located at 1601 Dixon Landing Road, San Jose, CA 95131.

1.12 Hazardous Waste

"Hazardous Waste" means any of the following:

(i) all waste defined or characterized as hazardous waste by the federal Solid Waste Disposal Act (42 U.S.C. Section 3251 et seq.), as amended, including the Resource Conservation and Recovery Act of 1976 (42 U.S.C. Section 6901 et seq.) and all future amendments thereto, or regulations promulgated thereunder;

(ii) all waste defined or characterized as hazardous waste by the principal agencies of the State of California (including without limitation the Department of Health Services and the California Waste Management Board) having jurisdiction over hazardous waste generated by facilities within such State, and pursuant to any applicable State or local law or ordinance, and all future amendments thereto, or regulations promulgated thereunder;

(iii) radioactive wastes;

(iv) any sewage sludge or other residue from wastewater treatment facilities;

(v) waste commonly known as cannery waste;

(vi) those substances or items which require special or extraordinary handling or disposal due to their hazardous, harmful, toxic or dangerous character or quality; and

(vii) those substances and items which are not normally expected to be disposed of by generally accepted sanitary landfill disposal methods.

"Hazardous Waste" shall be construed to have the broader, more encompassing definition where a conflict exists in the definitions employed by two or more governmental agencies having concurrent or overlapping jurisdiction over hazardous waste. If any governmental agency or unit having appropriate jurisdiction shall hereafter determine that substances which are not, as of the date hereof, considered harmful, toxic, dangerous or hazardous, are harmful, toxic, dangerous or hazardous, then such substances shall be Hazardous Waste for the purposes of this Agreement as of the effective date of such determination. If any governmental agency or unit having appropriate jurisdiction shall hereafter determine that substances which are, as of the date hereof, considered harmful, toxic, dangerous or hazardous, are not harmful, toxic, dangerous or hazardous, then such substances shall not be Hazardous Waste for purposes of this Agreement as of the effective date of such determination.

1.13 Maintenance Waste

"Maintenance Waste" means the following materials collected by City maintenance employees or private contractors hired to collect such materials instead of such employees: (i) debris from street and sewer repairs, (ii) debris from street sweepings, (iii) grass clippings, leaves and tree trimmings from maintenance of city parks, streets, median strips and City property, (iv) rock and concrete, (v) asphalt pavement from streets and (vi) tree stumps.

1.14 Municipal Solid Waste

"Municipal Solid Waste" means all substances or materials that are generally discarded or rejected as being spent, useless, worthless or in excess to the owners at the time of rejection, including, without limitation, trash, garbage, refuse and rubbish, and which are generated by all

residential, commercial, industrial, institutional, municipal, agricultural and other activities within the City; provided, however, Municipal Solid Waste does not include Hazardous Waste, Biomedical Waste and Ash.

1.15 Publicly Hauled Waste

"Publicly Hauled Waste" means Municipal Solid Waste generated at residences or commercial establishments in the City and hauled directly to an ultimate disposal site, including the Disposal Facility, by the respective generators (or, in the case of residences, their family members) of such Waste.

1.16 Rate Adjustment Date

"Rate Adjustment Date" has the meaning set forth in Section 5.2.

1.17 Recyclery

"The Recyclery" means a facility for Recycling to be located adjacent to the Disposal Facility, which, when fully operational, is expected to reduce disposable items in selected loads of Municipal Solid Waste delivered to the Disposal Facility.

1.18 Recycling

"Recycling" means the process of controlled manual and/or mechanical separation and removal of selected materials and items from any portion of a waste stream, such as, but not limited to, newspapers, cans, corrugated cardboard, metals, plastics and glass or the separate collecting of any such materials and items, for the purpose of reuse with or without reprocessing or remanufacturing into new products or for the purpose of composting.

1.19 Recycling Incentive Taxes

"Recycling Incentive Taxes" means those Taxes which are reducible, through a credit to Contractor or otherwise, based upon a reduction, due to Recycling, in the volume or weight of waste or material actually landfilled.

1.20 Regulatory Changes

"Regulatory Changes" means changes in laws or regulations (including enactment of new laws or regulations and permit changes) affecting the Disposal Facility or The Recyclery which occur on or after the date of this Agreement, and changes in the enforcement or interpretation of present or future laws or regulations (including permits) affecting the Disposal Facility or The Recyclery which occur on or after the date of this Agreement.

1.21 Residential Waste

"Residential Waste" means Municipal Solid Waste generated at residences which would be expected to contain cans, glass, metals and other materials suitable for Recycling.

1.22 Santa Clara County Municipalities

"Santa Clara County Municipalities" means any city or town within Santa Clara County, California and Santa Clara County itself, acting on behalf of the unincorporated portions of said County.

1.23 Taxes

"Taxes" means all taxes or governmental fees now or hereafter imposed with respect to operation of The Recyclery and/or the Disposal Facility; provided, however, "Taxes" shall include the per unit stated amount of each tax or fee

for all waste or material delivered to the Disposal Facility even though Contractor is able, through processing at The Recyclery or its manner of operation at or the characteristics of the Disposal Facility, to reduce, through receipt of a credit or otherwise, the related aggregate tax or fee actually payable by Contractor. As of the date of this Agreement, "Taxes" are $4.04 per Ton, composed of the following: The current City of San Jose Business Tax of $3.00 per ton, the City of San Jose Enforcement Fee of $0.13 per ton, the County Solid Waste Planning Fee of $0.15 per ton, the County Health Enforcement Fee of $0.16 per ton, and the fee resulting from State AB 2448, California Government Code Section 66749, et. seq., known as the "Eastin Tax" (currently estimated to be $0.60 per ton but subject to retroactive adjustment based upon the actual tax).

1.24 Tipping Fee

"Tipping Fee" means the amount, as set forth in Section 5, payable by City to Contractor for each Ton of Municipal Solid Waste delivered to the Disposal Facility pursuant to this Agreement.

1.25 Ton

"Ton" means a short Ton of 2,000 pounds avoirdupois.

1.26 Transferee Municipality

"Transferee Municipality" means a Santa Clara County Municipality to which City has assigned part of City's Allocation Quantity in accordance with Section 6.

1.27 Waste-to-Energy Facility

"Waste-to-Energy Facility" means a facility at which waste is burned to produce steam for heat or electricity.

SECTION 2. CITY'S RESPONSIBILITIES

2.1 Delivery of Municipal Solid Waste

Subject to the other provisions of this Agreement, during the term of this Agreement, City shall deliver or cause delivery of all Municipal Solid Waste to the Disposal Facility, for Recycling and/or disposal in accordance with this Agreement; provided, however, City shall not be required to deliver or cause delivery of Municipal Solid Waste collected in Debris Boxes under Section 2.4, Municipal Solid Waste collected pursuant to City's Clean Up Campaign, Publicly Hauled Waste, Maintenance Waste, Municipal Solid Waste collected pursuant to a Recycling program or Municipal Solid Waste delivered to a Waste-to-Energy Facility under Section 2.2.

2.2 Waste-to-Energy Facility

City may divert Municipal Solid Waste from the Disposal Facility to a Waste-to-Energy Facility; provided, however, that all Municipal Solid Waste which is delivered to, but is for any reason not incinerated at the said Waste-to-Energy Facility, shall be delivered to the Disposal Facility in accordance with Section 2.1. Any diversion of Municipal Solid Waste to a Waste-to-Energy Facility will not change the Tipping Fee at the Disposal Facility for Municipal Solid Waste. City may deliver or cause delivery of all resulting Ash to the Disposal Facility if regulations and permits allow for disposal of such Ash and subject to a mutually agreeable disposal rate. The price for Ash disposal will be negotiated at the time such a Waste-to-Energy Facility is in the planning phase.

2.3 Unauthorized Waste

City shall use reasonable business efforts to prevent delivery to the Disposal Facility by Designated Haulers of

waste or material other than Municipal Solid Waste. Subject to Contractor's agreement, as set forth in Section 3.5, to attempt to reject or have a Designated Hauler remove such other waste or material, City shall pay all costs of handling, demurrage, reloading, transportation and/or disposal of such other waste or material.

2.4 Debris Box Municipal Solid Waste

City shall deliver or cause delivery of all Municipal Solid Waste collected in Debris Boxes to the Disposal Facility, for Recycling and/or disposal in accordance with this Agreement; provided, however, City shall not be required to deliver or cause delivery of Municipal Solid Waste collected in Debris Boxes from and after the date on which City commences to deliver or cause delivery of substantially all such Debris Box Municipal Solid Waste to an alternative sanitary landfill for disposal pursuant to a binding disposal agreement to be in effect thereafter for at least until the expiration of thirty (30) years from and after the date of commencement of performance of this Agreement.

SECTION 3. CONTRACTOR'S RESPONSIBILITIES

3.1 Receipt of Municipal Solid Waste

Subject to the other provisions of this Agreement, during the term of this Agreement, Contractor shall receive all Municipal Solid Waste delivered to The Recyclery and the Disposal Facility for Recycling and/or disposal at The Recyclery and Disposal Facility in accordance with this Agreement.

3.2 Operational Requirements.

3.2.1 Hours

Contractor shall operate the Disposal Facility for the receipt of Municipal Solid Waste from the Designated Haulers from at least 6:00 a.m. to 5:00 p.m. Monday through Friday and from 8:00 a.m. to 4:00 p.m. on Saturday, except that the Disposal Facility may be closed on Christmas Day, the fourth Thursday of November and New Year's Day.

3.2.2 Signs

At Contractor's sole expense, Contractor shall prominently post signs at the entrance to the Disposal Facility detailing the regulations which must be followed by vehicles entering the site, indicating the hours of operation, the types of waste or recyclable materials accepted and a local telephone number to call for information or in case of emergency.

3.2.3 Site Access

Contractor shall construct and maintain all roads running in and over the Disposal Facility as shall be reasonable under the circumstances, from the end of the public access road to the point designated for the disposal of materials. A smooth surface within the disposal area will be maintained properly to assist vehicles in their disposal operations. Contractor shall designate an area immediately adjacent to an all-weather road for disposal during periods of inclement weather. Contractor shall operate and maintain such inclement weather site and shall construct and maintain an access road to such site. Contractor shall not be responsible for any expense

or inconvenience incurred by Designated Haulers as a result of construction along the public access road. If delay occurs, Contractor and Designated Haulers shall attempt to arrange alternate scheduling.

3.2.4 Scales; Cubic Yard Conversion

Contractor shall operate and maintain a scale or scales to weigh all Municipal Solid Waste delivered by Designated Haulers to the Disposal Facility. In the event that the scales are temporarily out of service to weigh Municipal Solid Waste delivered to the Disposal Facility, then, for the purposes of this Agreement, the Ton equivalent of cubic yards of waste, measured at the entrance of the Disposal Facility, shall be as set forth in Exhibit "C", attached hereto and made a part hereof.

3.2.5 Records

Contractor shall maintain daily records for each Designated Hauler necessary to compile the monthly report to be provided by Contractor pursuant to subsection 5.5.1. City or City's designated representative shall have the right to inspect such records and the record keeping procedures at any time during normal business hours provided that such representative does not interfere with work being performed by Contractor.

3.3 Designated Haulers

3.3.1 Acceptance of Waste

Contractor shall accept all Municipal Solid Waste, not to exceed the Allocation Quantity, from City's Designated Haulers and shall charge City the Tipping Fee therefor.

3.3.2 City Designation

City shall designate those waste haulers responsible for delivery of Municipal Solid Waste to the Disposal Facility, provided that those so designated shall agree to observe all regulations at the Disposal Facility and to operate according to safe industry practices.

3.3.3 No Preference

Contractor shall give no preference or priority of treatment over Designated Haulers to any other persons bringing wastes to the Disposal Facility. Also, Contractor shall not give any preference or priority among Designated Haulers unless and until such preference or priority is requested by Contractor or City and approved in writing by the other party to this Agreement. Said approval shall not be unreasonably withheld.

3.4 Curbside Recycling Programs

3.4.1 Curbside Recycling Credit

City shall receive a credit against payments due Contractor under Section 5.5 in the amount of eighty cents ($.80) (as adjusted under Section 5.2) per month for each (and only each) single family residence in the City (the "Curbside Recycling Credit"); provided, however:

(i) City shall not receive the Curbside Recycling Credit from and after the later of:

(a) such date as City's Residential Waste can be processed through The Recyclery,

provided that Contractor shall provide City with at least three (3) years prior written notice of such date and the Curbside Recycling Credit shall remain in effect during such three (3) year period, or

(b) the expiration of five (5) years from and after the date of this Agreement; and

(ii) Notwithstanding subparagraph (i) above, City shall not receive the Curbside Recycling Credit during such period as Contractor provides a Curbside Recycling Program in the City (including processing of Residential Waste at The Recyclery in lieu thereof), as set forth in subsection 3.4.2.

3.4.2 Contractor Curbside Recycling Program

At City's option, Contractor shall provide, at no additional cost to City, a Curbside Recycling Program, as described below; provided, however, Contractor shall not be required to provide such Curbside Recycling Program unless City shall have exercised such option in writing to Contractor within thirty (30) days after the date of this Agreement and the Cities of Santa Clara and/or Cupertino shall have also properly exercised their respective options for Contractor to provide such Curbside Recycling Program for the same period; provided, further, the minimum term of such Curbside Recycling Program shall be the greater of seven (7) years or the remaining term of the hauling contract for Residential Waste between the City and its contractor hauler in effect on the date that such Curbside Recycling Program is to commence, except that Contractor may, at its option,

terminate such Curbside Recycling Program at any time and process Residential Waste at The Recyclery.

The Curbside Recycling Program shall consist of the following and other mutually agreeable services and terms of performance: Contractor shall collect (at a minimum) glass, cans, PET bottles and newspapers once each week at curbside from all single family residences in the City and such multi-family residences which do not have dumpster or bin refuse collection service. All such recyclable material shall be placed in containers provided free of charge by Contractor. Contractor shall retain all the revenues derived from the sale of recyclable materials collected pursuant to the Curbside Recycling Program. Contractor shall have a period of one hundred eighty (180) days after City's exercise of its aforesaid option to commence provision of the Curbside Recycling Program.

3.5 Unauthorized Waste

In the event that waste or material other than Municipal Solid Waste is delivered or attempted to be delivered by Designated Haulers to the Disposal Facility, Contractor shall first attempt to reject such attempted delivery or cause the Designated Hauler, at its expense, to remove such waste or material from the Disposal Facility. However, in the event that such delivery occurs and such waste or material is not so removed, Contractor shall promptly notify City thereof and, subject to City's payment of costs as set forth in subsection 2.3, use reasonable business efforts to comply with City's request for handling and transportation of such waste or material to a disposal facility that can lawfully accept it.

3.6 Compliance with Laws and Regulations

Subject to the other terms and conditions of this Agreement, including issuance of the authorizations set forth in Section 4.1, Contractor agrees that, in the operation of The Recyclery and the Disposal Facility and the performance of services under this Agreement, Contractor will qualify under, and comply with, any and all federal, state and local laws and regulations now in force and which may hereafter, during the term of this Agreement, be enacted and become effective, which are applicable to Contractor, its employees, agents, or subcontractors, if any, concerning the operation of The Recyclery and the Disposal Facility. However, Contractor shall have the right to contest in good faith the application of such law or regulation to The Recyclery and Disposal Facility and Contractor shall not be deemed in breach of this Agreement during such good faith contest for failure to comply.

3.7 Permits, Licenses, Approvals

3.7.1 Contractor to Obtain

Subject to the other terms and conditions of this Agreement, including issuance of the authorizations set forth in Section 4.1, Contractor shall be responsible, at its sole expense, for obtaining and maintaining all necessary permits, licenses and approvals from any and all governmental entities having jurisdiction over the Disposal Facility and The Recyclery in order that Contractor may operate the Disposal Facility and The Recyclery in accordance with the terms and conditions of this Agreement and any laws or regulations applicable to the Disposal Facility and The Recyclery. City shall fully cooperate with Contractor in obtaining and maintaining such permits, licenses and approvals as long as any out of pocket expense incurred by City is borne by Contrac-

tor. Contractor shall file with City a true and correct copy, certified by the granting agency, of each permit, license or approval. However, Contractor shall have the right to contest in good faith any requirement of a permit, license or approval necessary for the operation of the Disposal Facility and The Recyclery and Contractor shall not be deemed in breach of this Agreement during such good faith contest for failure to comply.

3.7.2 Closure Plan

Contractor shall demonstrate adequate financial responsibility sufficient to finance Contractor's closure and post closure plan as submitted to state and local permit enforcement agencies.

3.8 Inspection of Operations

The designated representative of City shall have the right to observe and review Contractor's operations and enter Contractor's premises at the Disposal Facility for the purpose of such observation and review during normal operating hours, subject to reasonable notice. This provision shall not be construed as giving to City any right to exercise control over the business or operations of Contractor or to direct any operations of Contractor or to direct in any respect the manner in which the business and operations shall be conducted.

3.9 Labor Force

3.9.1 Employment

Contractor shall employ only such superintendents, mechanics, and other workers who are careful, competent and fully qualified to perform the duties or tasks assigned to them. All workers shall have

sufficient skill, ability and experience to properly perform the work assigned to them and to operate any equipment necessary for them to carry out their assigned duties properly.

3.9.2 Safety Provisions

Contractor shall operate the Disposal Facility in compliance with all applicable federal, state and local laws and regulations pertaining to safety.

3.10 Discrimination Prohibited

In the performance of this Agreement, Contractor will comply with the provisions of the California Fair Employment and Housing Act, California Government Code Section 12900 et seq., as amended, and any regulations promulgated thereunder, and with any federal statutes, and regulations promulgated thereunder, prohibiting employment discrimination.

SECTION 4. TERM OF AGREEMENT

4.1 Effective Date of Performance

Performance hereunder shall be deemed to have commenced on November 21, 1988.

4.2 Termination

Notwithstanding anything to the contrary contained in this Agreement, this Agreement shall continue in full force and effect until the first to occur of the following, unless sooner terminated in accordance with this Agreement:

(i) the Allocation Quantity is depleted in accordance with this Agreement; or

(ii) in any event, the expiration of thirty-five (35) years from and after the date of commencement of performance of this Agreement.

SECTION 5. COMPENSATION

5.1 Tipping Fee

The Tipping Fee for the disposal of Municipal Solid Waste at the Disposal Facility (including processing at The Recyclery and ultimate disposal of all processing residue at the Disposal Facility) initially shall be $14.23 per Ton, which amount shall be adjusted in accordance with Sections 3.4, 5.2, 5.3 and 5.4.

5.2 Annual Adjustment of Tipping Fee

The Tipping Fee (as adjusted under Sections 3.4, 5.3 and 5.4) and the Curbside Recycling Credit shall be adjusted as of July 1 of each year, beginning as of July 1, 1989, (the "Rate Adjustment Date") in accordance with the following formula:

$$P = A\,(.1 \times B + .1 \times C + .8 \times D)$$

A = The adjustable portion of the Tipping Fee (as described below) or, the Curbside Recycling Credit in effect as of the Rate Adjustment Date, as the case may be. The "adjustable portion of the Tipping Fee", as that phrase is used above, is the Tipping Fee in effect as of the Rate Adjustment Date, less the portion thereof attributable to Taxes. As of the date of this Agreement, the adjustable portion of the Tipping Fee is $14.23.

B = The net percentage change in the Employment Cost Index (Compensation), Private Industry

Workers - Nonmanufacturing, published by the U.S. Department of Labor, Bureau of Labor Statistics.

C = The net percentage change in the Gross National Product Implicit Price Deflator for Producer's Durable Equipment (non-residential), published quarterly by the U.S. Department of Commerce, Bureau of Economic Analysis.

D = The net percentage change in the Consumer Price Index (CPI), All Urban Consumer (CPI-U), for San Francisco-Oakland, California, published by the U.S. Department of Labor, Bureau of Labor Statistics.

P = The amount of adjustment to the Tipping Fee or the Curbside Recycling Credit, as the case may be, for the new twelve (12) month period.

All "net percentage changes", as that phrase is used above, are to be computed as the difference between the applicable index values for the month of March immediately prior to the current Rate Adjustment Date and for the month of March immediately prior to the last Rate Adjustment Date (March 1988 in the case of the first adjustment hereunder), divided by the index value for the month of March immediately prior to the last Rate Adjustment Date.

Contractor shall notify City in writing of any adjustment under this Section at the earliest practicable time. On the next billing date after the receipt of Contractor's statement showing adjustment under this Section, City shall pay to Contractor or Contractor shall credit to City, as the case may be, a lump sum equal to any increase or decrease applicable to that period which has elapsed during which the new Tipping Fee and the Curbside Recycling Credit

is effective. Thereafter, the Tipping Fee charged by Contractor and the Curbside Recycling Credit shall not be modified to reflect any change under this Section until a subsequent adjustment statement is received by City. Adjustment to the Tipping Fee and the Curbside Recycling Credit will only be made in units of one cent ($0.01). Fractions less than one cent ($0.01) will not be considered in making adjustment.

Should the indices named in this Section not be published for March of any given year, the calculations shall be performed using the index value as published for the last month immediately preceding the March in question (or, in the case of a quarterly published index, the index value for the quarter including the March in question).

Should the indices named in this Section be discontinued, successor indices shall replace same. Successor indices shall be those indices which are most closely equivalent to the discontinued indices as recommended by the publishing agency.

5.3 <u>City Recycle/Transfer Station</u>

If after The Recyclery commences operation, City (including through its contractors or agents) engages in or causes the Recycling of any portion of Municipal Solid Waste (other than through a Curbside Recycling Program) or commingles any portion of Residential Waste and other Municipal Solid Waste prior to delivery to the Disposal Facility, the Tipping Fee for the resulting residue or commingled portions shall be increased by an amount equal to $.88 plus the amount of Taxes excluded from the Tipping Fee adjustment under subsection 5.4.4. Such increase shall be subject to annual adjustments as specified in Section 5.2 beginning as of the Rate Adjustment Date. The Tipping Fee shall not be increased under this Section due to City's

establishment of a Curbside Recycling Program, as set forth in Section 3.4, transfer stations within the City at which no Recycling (other than through buy back centers) or no commingling of Residential Waste and other Municipal Solid Waste occurs, or buy back centers within the City.

5.4 Other Adjustments

5.4.1 Regulatory Changes

The Tipping Fee may be adjusted by Contractor from time to time to reflect City's pro rata share of all costs incurred or to be incurred by Contractor in operating The Recyclery and the Disposal Facility (including closure and post-closure monitoring) which are attributable to Regulatory Changes; provided, however, Contractor may not increase the Tipping Fee for costs attributable to any of the following:

(i) Regulatory Changes, by their terms, imposed solely with respect to operation of a sanitary landfill located adjacent to San Francisco Bay;

(ii) existing regulatory or remedial work, monitoring or other work which is required due to refuse which was placed in the Disposal Facility prior to the beginning of this Agreement even if part of such wastes were generated in the City;

(iii) Contractor's intentional misconduct or negligent acts or omissions in operation of The Recyclery or the Disposal Facility;

(iv) compliance with the Calderon Legislation (California Health & Safety Code Section 41805.5), subchapter 15, BAAQMD Rule 34, Proposition 65, and California Administrative Code Titles 14 and 22, and the final version of EPA's Subtitle D criteria when it is

enacted; provided, however, this subparagraph (iv) shall not include any future changes to the foregoing statutes, rules and/or regulations; and

(v) odor, noise and/or dust control due to encroaching land uses around the Disposal Facility which uses were not present on the date of this Agreement.

5.4.2 Termination By City

If, upon any increase in the Tipping Fee under subsection 5.4.1 due to Regulatory Changes, the Tipping Fee (exclusive of Taxes and all adjustments under Section 5.2) exceeds, by thirty percent (30%) or more, the disposal rate (exclusive of taxes and adjustments for inflation) then payable pursuant to the long term disposal contract first entered into by any of the "North County Cities" for disposal of municipal solid waste at the Kirby Canyon Landfill in Santa Clara County, City shall have the option to terminate this Agreement without penalty; provided, however, City must exercise such option, if at all, by providing Contractor with written notice thereof (including written evidence of the aforesaid percentage differential in disposal rates) within sixty (60) days after any such increase in the Tipping Fee. In the event that City properly exercises its aforesaid option, this Agreement shall terminate on the date as of which City has received all necessary regulatory approvals and made all necessary arrangements to process and/or dispose of elsewhere Municipal Solid Waste then being delivered hereunder to the Disposal Facility. As used above, "North County Cities" means the cities of Palo Alto, Sunnyvale and Mountain View, California.

5.4.3 City's Proportionate Share

City's pro rata share of costs attributable to Regulatory Changes under subsection 5.4.1 shall be determined on the basis of either of the following:

(i) The percentage of the daily volume of wastes disposed of in the Disposal Facility or material processed at the Recyclery, as the case may be, which is attributable to City, for those costs which are, according to generally accepted accounting principles, attributable to the daily operating costs of the Disposal Facility or the Recyclery , as the case may be. The percentage of daily volume attributable to City, shall be based upon the average amounts during the one-year period immediately preceding the request for an adjustment pursuant to this Section; or

(ii) The percentage of the remaining total site capacity at the Disposal Facility or the percentage of material processed at the Recyclery, as the case may be, which is expected to be utilized by or attributable to City under this Agreement, for those costs which are, by generally accepted accounting principles, not attributable to the daily operating costs of the Disposal Facility or the Recyclery, as the case may be. If costs incurred by Contractor are amortized over several years, the increase in the Tipping Fee shall be repealed at the end of such amortization period. This repeal shall not affect other increases resulting from costs which were not amortized.

Contractor shall notify City of any Tipping Fee adjustment attributable to Regulatory Changes under

this Section 5.4 at the earliest practicable time. At the time Contractor makes a request for a Tipping Fee adjustment attributable to Regulatory Changes pursuant to this Section 5.4, Contractor shall submit to City written documentation showing the actual costs incurred or estimated to be incurred in future years (for costs that are expected to be incurred or amortized over more than one year), demonstrating that the costs were incurred by reason of Contractor's compliance with changes in laws or regulations or changes in the enforcement or interpretation thereof, indicating the method of determining City's pro rata share of such cost, and showing the calculation of City's pro rata share. If Contractor bases the request for adjustment on a change in the enforcement or interpretation of a law or regulation affecting the Disposal Facility or the Recyclery, then Contractor shall also provide to City supporting documentation demonstrating the existence of and the nature of the change in enforcement or interpretation. City shall have the right, at reasonable times and upon reasonable notice to Contractor, to inspect all records or other information contained therein pertaining to Contractor's request for adjustment under this Section 5.4. No increase in the Tipping Fee attributable to Regulatory Changes shall be made pursuant to this Section 5.4 unless and until Contractor has submitted the above described written documentation to City.

5.4.4 <u>Taxes</u>

The Tipping Fee shall be adjusted by Contractor from time to time to include all Taxes; provided, however, except as set forth in Section 5.3, the Tipping Fee shall not include (i) 25% of Recycling Incentive Taxes imposed with respect to the <u>volume</u> of waste or material received or disposed of at the Disposal

Facility and (ii) a mutually agreeable percentage of Recycling Incentive Taxes imposed with respect to the weight of waste received or disposed of at the Disposal Facility, such mutually agreeable percentage to be based upon the assumption that 25% of the volume of all Municipal Solid Waste delivered hereunder will be recycled at the Recyclery and upon the respective volume/weight relationships of the various components of Municipal Solid Waste being recycled at the Recyclery.

5.5 Payment

5.5.1 Monthly Invoice and Report

On or before the tenth (10th) day of each month, Contractor shall submit to City an invoice for the preceding month. Said invoice shall state the Tipping Fee then in effect and the amount due for the invoice month calculated in accordance with the provisions of this Section 5.

At the time Contractor submits the monthly invoice, Contractor shall also submit to City a report stating, for each Designated Hauler, the information in substantially the form of the sample report form attached hereto as Exhibit "D" and made a part hereof.

In the event City institutes a voucher system whereby City issues vouchers or coupons to Designated Haulers for delivery of Municipal Solid Waste, Contractor shall attach to the monthly report either copies of such list or the voucher numbers printed on such vouchers and the name of the Designated Hauler submitting the voucher.

5.5.2 Time of City's Payment

City shall review the monthly invoice and the monthly report received from Contractor. City shall have ten (10) working days from receipt of the report to request reasonable additional information regarding the report. Such request shall be in writing and shall specify the information requested. Contractor shall have ten (10) working days from the date of the request to supply to City the requested additional information. City shall remit payment to Contractor with thirty (30) days of receipt of the requested information, or, if no additional information is requested, within thirty (30) days of receipt of the invoice and report. Where City disputes a portion of any invoice, City shall nevertheless timely pay in full the undisputed portion. City shall pay a charge for all past due amounts for each month or part thereof during which such amounts remain unpaid at the prime annual interest rate then established by Chase Manhattan Bank, N.A., but in no event higher than the maximum rate allowed by applicable law.

5.5.3 Payment for Publicly Hauled Waste

Contractor shall accept Publicly Hauled Waste for disposal and shall require those delivering such waste to pay directly for disposal at a rate not more than that posted from time to time for deliveries of waste by the general public.

5.6 Full Payment

Contractor hereby agrees to accept payments from City and those delivering Publicly Hauled Waste as described above as full compensation for services rendered under this Agreement.

SECTION 6. ASSIGNMENT AND USE OF ALLOCATION QUANTITY

City may, at its sole option, upon prior written notice to Contractor, and subject to the following conditions, assign to one or more other Santa Clara County Municipalities ("Transferee Municipality") a portion of City's remaining Allocation Quantity; provided, however:

(i) Prior to any delivery of Municipal Solid Waste to the Disposal Facility, the Transferee Municipality shall enter into and be bound by the terms of this Agreement (with modifications set forth herein) with respect to such assigned portion of City's Allocation Quantity and, at Contractor's option, all state and local agencies having jurisdiction shall have approved the disposal at the Disposal Facility of the Transferee Municipality's Municipal Solid Waste contemplated by the Allocation Quantity assignment;

(ii) City shall in any event remain responsible to perform all of its obligations under this Agreement, including, without limitation, under Section 2.1;

(iii) City's written notice to Contractor shall specify the exact amount of the Allocation Quantity assigned and the period over which deliveries of Municipal Solid Waste may occur;

(iv) The Transferee Municipality may not, during any calendar year, deliver or cause delivery of an amount of Municipal Solid Waste which, together with City's actual deliveries during such year, exceeds (a) the remaining portion of City's total Allocation Quantity at the beginning of such calendar year divided by (b) thirty (30) less the number of years (or partial years) elapsed since the date of commencement of performance of this Agreement; and

(v) The right of the Transferee Municipality to use the assigned portion of the Allocation Quantity shall end upon the expiration of thirty (30) years from and after the date of commencement of performance of this Agreement, even if all of said assigned portion has not, as of such time, been used by the Transferee Municipality.

SECTION 7. ASSURANCE OF PERFORMANCE

7.1 Force Majeure

7.1.1 Events Resulting in Force Majeure

The obligations of City and Contractor are subject to riots, wars, civil disturbances, insurrections, acts of terrorism at the Disposal Facility, epidemics, landslides, hurricanes, earthquakes, lightning, floods, washouts, explosions, fires, acts of God, government orders and regulations and other similar catastrophic events which are beyond the reasonable control of City or Contractor, as the case may be. It is specifically understood that "other similar catastrophic events" does not include, among other things, strikes, lockouts, other labor disturbances or breakage or accidents to machinery, equipment or plants.

7.1.2 Suspension of Obligations

In the event either party is rendered unable, wholly or in part, by the occurrence of any event described in subsection 7.1.1 to carry out any of its obligations, then the obligations of such party, to the extent affected by such occurrence and to the extent that due diligence is being used to resume performance at the earliest practicable time, shall be suspended during the continuance of any inability so

caused but for no longer period. Any time that such a party intends to rely upon the occurrence of an event described in subsection 7.1.1 to suspend obligations as provided in this Section 7, such party shall notify the other party as soon as reasonably possible, setting forth the particulars of the situation. Notice shall again be given when the effect of the occurrence of such event has ceased.

7.1.3 Alternative Disposal Arrangements

In the event that Contractor fails or is unable to accept or dispose of any waste which it is obligated to accept or dispose of under the terms of this Agreement because of any event other than described in subsection 7.1.1 whose occurrence materially and adversely affects Contractor's ability to accept or dispose of such waste at the Disposal Facility, Contractor shall transport and dispose of such waste at an alternate landfill site or disposal facility selected by Contractor at no additional cost to City or in the alternative, at Contractor's option, shall reimburse City for any and all extra costs incurred by City, over and above the Tipping Fee, to haul and dispose of Solid Waste at such other location. Where City hauls or arranges for hauling of said waste, it is understood that these costs may include costs incurred by the City which are payable by it to Designated Haulers for using an alternate landfill site. The provisions of this subsection 7.1.3 shall govern over any conflict with Section 7.5.

7.2 Performance Bond

Contractor shall also make, execute and deliver to City a good and sufficient surety bond in a form reasonably satisfactory to City to secure the faithful performance by

Contractor of the terms and conditions herein. Such bond shall be in the penal amount of Six Hundred Thousand Dollars ($600,000) and shall be for a term of at least two (2) years. Such bond shall be signed by the President or General Officer of Contractor, together with signature of its corporate secretary and corporate seal. The surety shall be a surety company duly authorized to do business in the State of California and acceptable to City. The surety company which issues the bond shall not be obligated to renew the bond after the expiration of the year term; provided, however, Contractor shall maintain similar replacement bonds issued by a mutually acceptable surety company meeting the requirements set forth above during the term of this Agreement. City agrees that Contractor's failure to replace the bond shall not result in City having any right to make a claim on the expiring bond. Notwithstanding the foregoing, Contractor may at any time, in lieu of the aforesaid surety bond, provide City with a letter of credit in the aforesaid sum, in a form reasonably satisfactory to City, securing the faithful performance by Contractor of the terms and conditions herein.

7.3 Insurance Requirements

Contractor shall obtain and shall maintain throughout the term of this Agreement at least the minimum insurance policies, with at least the required coverage limits and endorsements, as is set forth in Exhibit "E", entitled "INSURANCE REQUIREMENTS", attached hereto and made a part hereof. The insurance requirements set forth in Exhibit "E" shall be reviewed for sufficiency by City at five year intervals and such requirements may be reasonably amended or modified by City as deemed necessary or prudent by City, provided that any required new or increased coverage is available on a commercially reasonable basis.

Within (30) days of the effective date of this Agreement, Contractor shall submit proof of the aforesaid coverage in the form of Certificates of Insurance, with copies of all required endorsements attached thereto, to City.

7.4 Hold Harmless and Indemnification

7.4.1 By Contractor

Contractor agrees to protect, defend, hold harmless and indemnify City, its Council, officers, employees, and agents from and against any and all liability, including but not limited to, contractual liability, losses, penalties, claims, demands, damages to property (real and/or personal), environmental contamination, including attorneys fees, and personal injury to or death of any person or persons, and all expenses resulting from any claim or cause of action of any nature, including clean up or remedial action sought by private or governmental parties, occurring by reason of:

(i) Contractor's sole negligence;

(ii) Contractor's comparative share of the joint negligence of the parties;

(iii) Contractor's breach of this Agreement; or

(iv) Contractor's operation of The Recyclery and the Disposal Facility; provided, however, Contractor shall have no obligation of indemnity under this subsection 7.4.1(iv) (a) with respect to adjustments to the Tipping Fee authorized under Section 5.4 and (b) to the extent that the liability and expenses result from any of the events set forth in subsection 7.4.2.

7.4.2 By City

City agrees to protect, defend, hold harmless and indemnify Contractor and its affiliated corporations, and their officers, employees, directors and agents from and against any and all liability, including but not limited to, contractual liability, losses, penalties, claims, demands, damages to property (real and/or personal), environmental contamination, including attorneys fees, and personal injury to or death of any person or persons, and all expenses resulting from any claim or cause of action of any nature, including clean up or remedial action sought by private or governmental parties, occurring by reason of:

(i) City's sole negligence;

(ii) City's comparative share of the joint negligence of the parties;

(iii) City's breach of this Agreement; or

(iv) Delivery by City or its agents (including Designated Haulers) of materials or substances to the Disposal Facility which are not Municipal Solid Waste.

7.4.3 Negligence Defined

For purposes of Sections 7.4.1 and 7.4.2, "negligence" shall be deemed to include both negligent acts and omissions and willful misconduct, and the negligence of a party shall include the negligence of its respective officers, employees or agents (including subcontractors).

7.4.4 Notice and Access

The party claiming a right to indemnity shall:

(i) give written notice thereof within a reasonable period following the earlier of actual or constructive notice of the event or occurrence as to which the right to indemnification is or may be asserted, provided, that any delay in or failure to give such notice shall not alter any obligation of indemnity herein, except to the extent the indemnifying party is materially prejudiced thereby; and

(ii) allow the other party (including their employees, agents and counsel) reasonable access to any of its employees, property and records reasonably related to the matter giving rise to the claim for indemnification (excluding records protected by the privilege applicable to communications between attorney and client and the work product of attorneys) for the purpose of conducting an investigation of such claim and taking such other steps as may be necessary to preserve evidence of the occurrence on which the claim is based.

7.4.5 Insurance Coverage

Provision of the insurance coverage set forth in Section 7.3 does not relieve Contractor or its subcontractors from liability under the above hold harmless/indemnification clause.

7.4.6 Survival

The indemnities contained in this Section 7 shall survive expiration or termination of this Agreement.

7.5 Suspension or Termination For Default

City shall not suspend or terminate this Agreement unless and until Contractor has failed to substantially perform under this Agreement and has been given notice of such failure and has not cured such failure, or commenced to cure such failure, within thirty (30) days after receipt of said notice (and, in the case of commencement to cure, does not thereafter diligently proceed to cure such failure); provided that no opportunity to cure prior to suspension shall be required if the health, welfare, or safety of the public is endangered by the continued delivery of Municipal Solid Waste to the Disposal Facility.

A copy of the suspension order or action of the City shall be served on Contractor and on Contractor's surety (if there is a surety). When work is suspended for any cause or causes during the term of this Agreement, Contractor shall discontinue the work or such part thereof as City shall designate, whereupon the surety may, at its option, assume this Agreement or that portion thereof which City has ordered Contractor to discontinue, and may perform the same or may sublet the work or that portion of the work taken over to a contractor approved in writing by City's Director of Public Works; provided, however, that the surety shall exercise its option and begin performance of the work, if at all, within thirty (30) days after the written notice to discontinue the work has been served upon Contractor and upon the surety or its authorized agent. The surety, in such event, shall assume Contractor's place in all respects and shall be bound by all the terms and conditions of this Agreement. The surety shall be paid by

City for all work performed by it in accordance with the terms of this Agreement.

In case the Surety does not, within the above specified time, assume Contractor's responsibilities under this Agreement, or that portion thereof which City has ordered Contractor to discontinue, then City shall have the power and right to perform and complete, by contract or otherwise, as it may determine, the work herein described or such part thereof as it may deem necessary, and Contractor agrees that City shall have the right to procure equipment, labor and materials necessary for the completion of the work. City shall be required to mitigate expenses, in accordance with applicable law, for the work of completing the services provided in this Agreement, and the expense to City for same shall be the actual cost to City of such work, plus any additional costs which City may incur in payment to its Designated Haulers should the alternate disposal site be located at greater distance from the point of collection of Municipal Solid Waste than the Disposal Facility.

In case such expenses shall exceed the amount which would have been payable under this Agreement if the same had been fully performed by Contractor, then Contractor and its surety shall pay the amount of such excess to City on notice from City of the excess due. When any particular part of the work is carried out by the surety or by City, by contract or otherwise, under the provisions of this Section, Contractor shall continue the remainder of the work in conformity with the terms of this Agreement.

In all instances, Contractor and its surety shall be liable for all damages incurred by City during the period after notice to discontinue the work has been served upon Contractor and the surety; provided, however, notwithstanding anything to the contrary contained in this Agreement, Contractor shall not be liable to City for any special,

punitive or consequential damages, whether in contract, tort, strict liability or otherwise.

In computing damages which City incurs under this Section, additional costs of haulage of waste to a more distant site for waste disposal shall be included, as well as actual fees charged for disposal. Such additional haulage costs shall be negotiated in good faith between City and its Designated Haulers, and shall be passed on to surety and Contractor without markup.

SECTION 8. GENERAL PROVISIONS

8.1 Independent Contractor

It is expressly understood and agreed that Contractor shall perform all work and services described herein as an independent contractor and not as an officer, agent, servant or employee of City; that Contractor shall have exclusive control of and the exclusive right to control the details of the services and work performed hereunder and all persons performing the same; that Contractor shall be solely responsible for the acts and omissions of its officers, agents, employees, contractors and subcontractors, if any; and that nothing herein shall be construed as creating a partnership or joint venture between City and Contractor. No person performing any of the work or services described hereunder shall be considered an officer, agent, servant or employee of City, nor shall any such person be entitled to any benefits available or granted to employees of City.

8.2 City Warranty

City warrants to Contractor that

(i) City has full power in accordance with applicable law to enter into this Agreement;

(ii) the entering into this Agreement will not constitute a violation or breach by City

(a) of any contract or other instrument to which the City is a party,

(b) of any judgment, order, writ, injunction or decree issued against or imposed upon City, or

(c) that will result, to the knowledge of the City, in a violation of any applicable law, order, rule or regulation of any governmental authority; and

(iii) this Agreement constitutes a valid and binding obligation of City in accordance with its terms, including, without limitation, for the full period of the term of this Agreement notwithstanding the future change of elected or appointed City officials or the City's failure to budget and appropriate sufficient funds for this Agreement. Prior to the parties' entering into this Agreement, legal counsel for the City shall render a written legal opinion to Contractor that the matters set forth in this Section 8.2 are true and correct.

8.3 Venue

The parties agree that should any action, whether real or asserted, at law or in equity, arise out of the terms and conditions of this Agreement, venue for said action shall be in Santa Clara County, California.

8.4 Savings Clause

If any nonmaterial provision of this Agreement shall for any reason be held to be invalid or unenforceable, the

invalidity or unenforceability of such provision shall not affect any of the remaining provisions of this Agreement and this Agreement shall be enforced as if such invalid and unenforceable provision had not been contained herein.

8.5 Section Headings

The Section and paragraph headings contained herein and the table of contents attached hereto are for convenience in reference and are not intended to define or limit the scope of any provision of this Agreement.

8.6 Amendment

This Agreement may be amended only by written agreement duly authorized and executed by the parties hereto.

8.7 Assignability

This Agreement is assignable with the written consent of both parties and shall be binding upon and insure to the benefit of the parties hereto and their respective heirs, successors in interest, and assigns. Such consent shall not be withheld unreasonably, nor shall such consent be required in the event of any of the following: (i) an assignment by operation of law, (ii) an assignment to an affiliate or subsidiary of Contractor, (iii) an assignment of the right to use a portion of City's Allocation Quantity pursuant to Section 6 of this Agreement, or (iv) an assignment by City to the State of California or to any agency or subdivision of the State or of City if such entity undertakes responsibility of the disposal of Municipal Solid Wastes; provided, however, assignor shall remain responsible for performance of its obligations under this Agreement.

8.8 Notices

Notices by either party to this Agreement to the other party shall be deemed given if personally served or if sent by express mail or deposited in the United States Mail as certified mail, return receipt requested, postage prepaid, addressed to the other party as designated below, or to such other place designated in writing. Such notice shall be deemed effective on the date personally served or when actually received. Notice that a party intends to rely upon the occurrence of an event described in subsection 7.1.1 hereof to suspend obligations under this Agreement may be given verbally; provided that written notice is provided immediately following such verbal notification.

To City:

City Manager
One North San Antonio Rd.
Los Altos, California 94022

To Contractor:

District Manager
Browning-Ferris Industries
of California, Inc.
P.O. Box 1987
San Jose, CA 95109

Regional Landfill Manager
Browning-Ferris Industries
of California, Inc.
55 Almaden Boulevard
San Jose, CA 95113

Secretary
Browning-Ferris Industries
of California, Inc.
P.O. Box 3151
Houston, TX 77253

8.9 Waiver

A waiver of any breach of any provision of this Agreement shall not constitute or operate as a waiver of any other breach of such provision or of any other provision, nor shall any failure to enforce any provision hereof operate as a waiver of such provision or of any other provision.

8.10 Law to Govern

It is understood and agreed by the parties that the law of the State of California shall govern the rights, obligations, duties and liabilities of the parties to this Agreement and shall govern the interpretation of this Agreement.

8.11 Attorney's Fees

In the event legal action is instituted to enforce this Agreement the prevailing party shall be entitled to reasonable attorneys' fees and actual costs incurred in connection with such action.

8.12 Entirety

The parties agree that this Agreement represents the full and entire agreement between the parties to this Agreement with respect to matters covered herein.

THE PARTIES TO THIS AGREEMENT hereby indicate their acknowledgment and acceptance of the terms and conditions stated herein by the following signatures of their duly authorized representatives.

APPROVED AS TO FORM AND LEGALITY:

By: _____
Name: Robert Booth
Title: City Attorney

ATTEST:

By: _____
Name: Carol Scharz
Title: City Clerk

CITY OF LOS ALTOS, CALIFORNIA,
a municipal corporation

By: _____
Name: Arne Croce
Title: City Manager

One North San Antonio Rd.
Los Altos, California 94022

"City"

ATTEST:

By: _____
Name: Suzanne F. Good
Title: Notary Public

OFFICIAL SEAL
SUZANNE F GOOD
NOTARY PUBLIC - CALIFORNIA
SANTA CLARA COUNTY
My comm. expires SEP 3, 1989

INTERNATIONAL DISPOSAL CORP.
OF CALIFORNIA

By: _____
Name: Gene A. Meredith
Title: President

55 Almaden Boulevard
San Jose, California 95113
Telephone: (408) 432-1234

"Contractor"

APPROVED AS TO FORM AND LEGALITY:

By: _____
Name: Kathy Kretchmer
Title: Deputy County Counsel

APPROVED:

COUNTY OF SANTA CLARA,
CALIFORNIA

By: _____
Name: Susanne Wilson
Title: Chairperson, pro tempore
BOARD OF SUPERVISORS

GUARANTEE

Browning-Ferris Industries of California, Inc., a California corporation, which is a wholly owned subsidiary of Browning-Ferris Industries, Inc., a Delaware corporation, hereby guarantees to City the performance by International Disposal Corp. of California of its obligations under this Agreement.

BROWNING-FERRIS INDUSTRIES OF CALIFORNIA, INC.

By: Gene A. Meredith
Name: Gene A. Meredith
Title: President

EXHIBIT "A"

ALLOCATION QUANTITY

City of Los Altos, California

1,200,000 Tons

APPROVED AS TO FORM AND LEGALITY:

By: [signature]
Name: Robert Booth
Title: City Attorney

ATTEST:

By: [signature]
Name: Carol Scharz
Title: City Clerk

CITY OF LOS ALTOS, CALIFORNIA,
a municipal corporation

By: [signature]
Name: Arne Croce
Title: City Manager

One North San Antonio Rd.
Los Altos, California 94022

"City"

ATTEST:

By: [signature]
Name: Suzanne F. Good
Title: Notary Public

OFFICIAL SEAL
SUZANNE F GOOD
NOTARY PUBLIC - CALIFORNIA
SANTA CLARA COUNTY
My comm. expires SEP 3, 1989

INTERNATIONAL DISPOSAL CORP.
OF CALIFORNIA

By: [signature]
Name: Gene A. Meredith
Title: President

55 Almaden Boulevard
San Jose, California 95113
Telephone: (408) 432-1234

"Contractor"

9469-1

EXHIBIT "B"

UNINCORPORATED GEOGRAPHIC AREA OF
SANTA CLARA COUNTY
INCLUDED WITHIN DEFINITION OF CITY

See Attached Map

APPROVED AS TO FORM AND LEGALITY:

By: _____
Name: Robert Booth
Title: City Attorney

ATTEST:

By: _____
Name: Carol Scharz
Title: City Clerk

CITY OF LOS ALTOS, CALIFORNIA,
a municipal corporation

By: _____
Name: Arne Croce
Title: City Manager

One North San Antonio Rd.
Los Altos, California 94022

"City"

ATTEST:

By: _____
Name: Suzanne F. Good
Title: Notary Public

OFFICIAL SEAL
SUZANNE F GOOD
NOTARY PUBLIC - CALIFORNIA
SANTA CLARA COUNTY
My comm. expires SEP 3, 1989

INTERNATIONAL DISPOSAL CORP.
OF CALIFORNIA

By: _____
Name: Gene A. Meredith
Title: President

55 Almaden Boulevard
San Jose, California 95113
Telephone: (408) 432-1234

"Contractor"

9469-1

FIGURE 4 - 2: CITY AND PLANNING AREA BOUNDARIES

EXHIBIT "C"

EQUIVALENT WEIGHT OF MUNICIPAL SOLID WASTE

Type of Refuse	Ton Equivalent Per Cubic Yard
1. Compacted Refuse	
a. Front Loader or Side Loader Vehicle	.20 Ton/Cubic Yard
b. Rear Loader Vehicle	.30 Ton/Cubic Yard
c. Roll-Off Compactor Container	.40 Ton/Cubic Yard
2. Loose Refuse	.20 Ton/Cubic Yard
3. Demolition Refuse	.50 Ton/Cubic Yard
4. Concrete, Asphalt, Soil	1.00 Ton/Cubic Yard

EXHIBIT "D"

REPORT OF REFUSE RECEIVED AT
THE RECYCLERY/NEWBY ISLAND LANDFILL
ATTRIBUTABLE TO THE CITY OF LOS ALTOS, CALIFORNIA
DESIGNATED HAULER _____
MONTH OF _____

DATE	TOTAL NUMBER OF TRUCKS	TOTAL TONS	RATE ($/TON)	TOTAL COST
MONTHLY TOTAL				

TONS RECEIVED AT RECYCLERY

(b) Employer's Non-ownership Liability

(c) Hired Automobiles

(4) ENDORSEMENTS AND CLAUSES. All of the following clauses and endorsements, or similar provisions, are required to be made a part of each of the above required policies:

(a) A "Cross Liability" or "Severability of Interest" clause; and

(b) City, its employees, officers, agents and contractors are hereby added as additional insured as respects all liabilities arising out of Contractor's negligence or willful misconduct during performance of work under this Agreement; and

(c) This policy shall be considered primary insurance as respects any other valid and collectible insurance City may possess, including any self-insured retention City may have, and any other insurance City possesses shall be considered excess insurance only; and

(d) NO CANCELLATION OR NON-RENEWAL OF THIS POLICY OR MODIFICATION OF THE COVERAGE AFFORDED UNDER THIS ENDORSEMENT SHALL BE EFFECTIVE UNTIL WRITTEN NOTICE HAS BEEN GIVEN AT LEAST THIRTY (30) DAYS PRIOR TO THE EFFECTIVE DATE OF SUCH MODIFICATION OR CANCELLATION TO THE CITY OF LOS ALTOS, CALIFORNIA. ATTENTION: CITY MANAGER.

B. PROOF OF INSURANCE COVERAGE AND COVERAGE VERIFICATION. A copy of the Certificate of Insurance and completed coverage verification shall be provided to City by each of the Contractor's insurance companies as evidence of the stipulated coverages within thirty (30) days of the effective day of this Agreement. The Certificate(s) of Insurance and coverage verification shall be mailed to City.

Exhibit "A" -- Garbage Rates 1991

	Monthly Base Rate	Rate with Surcharges 15.61%
Residential Rate		
1 can	10.73	12.40
2 cans	15.61	18.05
3 cans	23.57	27.25
4 cans	32.96	38.10
Each additional can	10.38	12.00
Commercial Rate		**8.95%**
(a) One collection per week		
1 can, 30 gal (per can)	13.21	14.39
1-1/2 cu yd	80.50	87.71
3 cu yd	134.98	147.06
6 cu yd	243.40	265.19
(b) Two collections per week		
1-1/2 cu yd	147.99	161.24
3 cu yd	262.19	285.66
6 cu yd	378.38	412.25
(c) Three collections per week		
1-1/2 cu yd	215.27	234.54
3 cu yd	384.04	418.41
6 cu yd	513.17	559.10
(d) Four collections per week		
1-1/2 cu yd	282.85	308.17
3 cu yd	505.60	550.85
6 cu yd	648.13	706.13
(e) Five collections per week		
1-1/2 cu yd	350.33	381.69
3 cu yd	627.46	683.61
6 cu yd	782.80	852.86
(f) Six collections per week		
1-1/2 cu yd	417.54	454.91
3 cu yd	749.12	816.16
6 cu yd	917.79	999.93
Extra pickups on containers		
1-1/2 cu yd	26.11	28.45
3 cu yd	38.20	41.62
6 cu yd	62.42	68.01
Miscellaneous Service		**15.61%**
Oversize cans	5.89	6.81

Apartment/Residential Condominium Rate	Monthly Base Rate	Rate with Surcharges 0.44%
(a) One collection per week		
1-1/2 cu yd	85.36	85.74
3 cu yd	143.12	143.75
6 cu yd	258.09	259.23
(b) Two collections per week		
1-1/2 cu yd	156.92	157.61
3 cu yd	278.02	279.24
6 cu yd	401.21	402.98
(c) Three collections per week		
1-1/2 cu yd	228.26	229.27
3 cu yd	407.22	409.01
6 cu yd	544.14	546.53
(d) Four collections per week		
1-1/2 cu yd	299.92	301.24
3 cu yd	536.11	538.47
6 cu yd	687.24	690.26
(e) Five collections per week		
1-1/2 cu yd	371.47	373.11
3 cu yd	665.32	668.25
6 cu yd	830.04	833.69
(f) Six collections per week		
1-1/2 cu yd	442.74	444.69
3 cu yd	794.32	797.82
6 cu yd	973.18	977.46
Extra pickups on containers		
1-1/2 cu yd	27.72	27.85
3 cu yd	40.50	40.68
6 cu yd	66.19	66.48
Apartment/Duplex Rate		**15.61%**
(if paid by property owner)		
1 can per unit	10.73	12.40
2 cans per unit	15.61	18.05
3 cans per unit	23.57	27.25
4 cans per unit	32.96	38.10
Each additional can	10.38	12.00

Effective July 1, 1991

Exhibit "A" -- Garbage Rates 1992

	Monthly Base Rate	Rate with Surcharges 15.61%
Residential Rate		
1 can	11.59	13.40
2 cans	16.86	19.49
3 cans	25.46	29.43
4 cans	35.60	41.15
Each additional can	11.21	12.96
Commercial Rate		**8.95%**
(a) One collection per week		
1 can, 30 gal (per can)	14.80	16.12
1-1/2 cu yd	90.16	98.23
3 cu yd	151.18	164.71
6 cu yd	272.61	297.01
(b) Two collections per week		
1-1/2 cu yd	165.75	180.58
3 cu yd	293.65	319.93
6 cu yd	423.79	461.71
(c) Three collections per week		
1-1/2 cu yd	241.10	262.68
3 cu yd	430.12	468.62
6 cu yd	574.75	626.19
(d) Four collections per week		
1-1/2 cu yd	316.79	345.14
3 cu yd	566.27	616.95
6 cu yd	725.91	790.87
(e) Five collections per week		
1-1/2 cu yd	392.37	427.49
3 cu yd	702.76	765.65
6 cu yd	876.74	955.20
(f) Six collections per week		
1-1/2 cu yd	467.64	509.50
3 cu yd	839.01	914.11
6 cu yd	1,027.92	1,119.92
Extra pickups on containers		
1-1/2 cu yd	29.24	31.86
3 cu yd	42.78	46.61
6 cu yd	69.91	76.17
Miscellaneous Service		**15.61%**
Oversize cans	6.60	7.63

Effective July 1, 1992

	Monthly Base Rate	Rate with Surcharges 0.44%
Apartment/Residential Condominium Rate		
(a) One collection per week		
1-1/2 cu yd	92.19	92.59
3 cu yd	154.57	155.25
6 cu yd	278.74	279.96
(b) Two collections per week		
1-1/2 cu yd	169.47	170.22
3 cu yd	300.26	301.58
6 cu yd	433.31	435.21
(c) Three collections per week		
1-1/2 cu yd	246.52	247.61
3 cu yd	439.80	441.73
6 cu yd	587.67	590.26
(d) Four collections per week		
1-1/2 cu yd	323.91	325.34
3 cu yd	579.00	581.55
6 cu yd	742.22	745.48
(e) Five collections per week		
1-1/2 cu yd	401.19	402.95
3 cu yd	718.55	721.71
6 cu yd	896.44	900.39
(f) Six collections per week		
1-1/2 cu yd	478.16	480.26
3 cu yd	857.87	861.64
6 cu yd	1,051.03	1,055.66
Extra pickups on containers		
1-1/2 cu yd	29.94	30.07
3 cu yd	43.74	43.93
6 cu yd	71.49	71.80
Apartment/Duplex Rate		**15.61%**
(if paid by property owner)		
1 can per unit	11.59	13.40
2 cans per unit	16.86	19.49
3 cans per unit	25.46	29.43
4 cans per unit	35.60	41.15
Each additional can	11.21	12.96

Annual Garbage Revenues

	Residential Apt w/cans	+ Apt & Condo w/bins	Commercia	Subtotal Revenues	Debris Boxes	Total	Cleanup to LAGCo	Recycling to LAGCo	All Revenue Total	Cleanup Surcharge	Recycling Surcharge	Admin Surcharge	Total Surcharge
TOTAL 1990	1,371,672	112,796	755,553	2,240,021	421,540	2,661,561	135,589	17,833	2,814,983	295,595	10,881	24,417	330,893
TOTAL 1991	1,570,999	139,566	692,556	2,403,121	626,910	3,030,031	152,624	59,237	3,241,892	282,718	73,998	11,779	368,495
TOTAL 1992	1,298,487	109,662	510,097	1,918,246	305,166	2,223,412	77,183	30,079	2,330,674	196,621	51,850	9,712	258,183
FY 89-90	1,381,787	111,926	724,545	2,218,258	423,969	2,642,227	197,557	11,633	2,851,417	301,125	9,162	20,338	330,625
FY 90-91	1,375,982	118,113	706,685	2,200,780	478,547	2,679,327	137,240	48,222	2,864,789	296,523	47,834	23,988	368,345
FY 91-92	1,744,922	160,998	745,872	2,651,792	615,650	3,267,442	157,148	58,927	3,483,517	264,345	75,141	9,712	349,198

Calendar Year and City Fiscal Year

State of California

California Environmental
Protection Agency

MEMORANDUM

9/24

To: Michael Chiriatti
State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

Deborah Nelson
City of Los Altos
1 North Santonio Road
Los Altos, CA 94022

Date: September 2, 1992

RECEIVED SEP 2 1992 STATE CLEARINGHOUSE

From: L. Van Kekerix
Lorraine Van Kekerix, Manager
Waste Generation Analysis & Environmental Review Branch
Planning & Assistance Division
CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

Subject: SCH #92083058, PROPOSED NEGATIVE DECLARATION (ND) FOR THE SOURCE REDUCTION AND RECYCLING ELEMENT (SRRE) AND HOUSEHOLD HAZARDOUS WASTE ELEMENT (HHWE) FOR THE CITY OF LOS ALTOS; SANTA CLARA COUNTY.

Staff have completed their review of the subject document, dated August, 1992. Following the project description below, you will find staff's comments on the subject document.

PROJECT DESCRIPTION

The City of Los Altos is required to prepare a SRRE and HHWE to comply with the planning requirements of the Integrated Waste Management Act of 1989, and the planning guidelines of the California Integrated Waste Management Board. To meet these requirements the SRRE proposes a series of waste management programs to divert 25 percent of solid waste from landfills by 1995 and 50 percent by the year 2000. The HHWE proposes a series of programs for the diversion of HHW from landfills.

GENERAL COMMENTS

Subsequent Environmental Review

The subject document includes the following statement:

- environmental review will be included to all projects when appropriate.

Staff concurs with this position, particularly for the following projects discussed in the ND:

- expansion of buy back centers;
- expanding the commercial recycling program;
- diversion of inert solids generated from City and Public works projects and private construction/demolition projects to a materials processor;
- residential curbside yard waste collection program with the material going to a centralized composting facility and/or other solid waste facility (outside the City);
- periodic drop-off events of hazardous waste;
- curbside oil collection;
- exclusion/load checking program.

Staff look forward to reviewing each of the necessary future environmental review documents. Please be sure to circulate these documents through the State Clearinghouse for agency review and comment.

Mitigation Monitoring Implementation Schedule (MMIS)

Subsequent environmental documents prepared to implement SRRE and HHWE projects are expected to identify mitigation measures which are to be implemented as a part of the proposed project. Please be aware that whenever an environmental review document identifies mitigation measures, preparation of a MMIS is required (Public Resources Code, Section 21081.6). When a MMIS is prepared please be certain to forward a copy to staff for their review.

Thank you for the opportunity to comment on the Negative Declaration for the subject project. If you have questions please call Tracy Woods of my staff at (916) 255-2338.

RESOLUTION NO. 92-6
A RESOLUTION OF THE LOS ALTOS CITY COUNCIL
TO DESIGNATE THE SOLID WASTE COMMISSION OF SANTA CLARA COUNTY
AS LOCAL TASK FORCE UNDER AB939

RESOLVED, by the City Council of the City of Los Altos, Santa Clara County, California, that

WHEREAS, Division 30, section 40950, of the California Public Resources Code requires each county in the State to convene a Local Task Force to assist in developing the city and county source reduction and recycling, and household hazardous waste elements of the Countywide Integrated Waste Management Plan prepared pursuant to Public Resources Code Section 41000 et seq, to prepare the countywide siting element required pursuant to Public Resources Code Section 41700 et seq, and to prepare other reports, plans, and elements pursuant to the Public Resources Code;

WHEREAS, section 40950 further requires that membership of said Local Task Force shall be determined by the Board of Supervisors and a majority of the cities within the county which contain a majority of the population in the county;

WHEREAS, in 1990 the Board of Supervisors and the cities of Santa Clara County established a Local Task Force in conformance with State requirements, namely the Intergovernmental Council Solid Waste Committee; and

WHEREAS, on February 11, 1992 the Board of Supervisors established the Solid Waste Commission of Santa Clara County to replace the Intergovernmental Council Solid Waste Committee, which Commission shall assume all duties and responsibilities previously assigned to the Committee; and adopted a resolution to designate the Solid Waste Commission of Santa Clara County as the Santa Clara County Local Task Force;

NOW, THEREFORE, BE IT HEREBY RESOLVED by the City Council of the City of Los Altos, State of California, in accordance with the above determinations, that the resolution to designate the Solid Waste Commission of Santa Clara County as the Santa Clara County Local Task Force is hereby approved and adopted.

* * * * * * * * * *

I hereby certify that the foregoing is a full, true and correct copy of a resolution duly passed and adopted by the City Council of the City of Los Altos, California, at a meeting thereof held on the 7th of April 1992, by the following vote of the members thereof:

AYES: Mayor Laliotis, Councilmembers Bruno, Lave, Reeder, & Spangler
NOES: None
ABSENT: None

T A Laliotis
Mayor

Carol Lahary
City Clerk