Source Reduction and Recycling Element

and

Household Hazardous Waste Element

Prepared for

City of Gilroy

Public Works Department
Gilroy, California

Prepared By

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FORWARD

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SOURCE REDUCTION AND RECYCLING ELEMENT

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ACRONYMS

AB	Assembly Bill
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFC	cholofluorocarbons
CIP	Capital Improvement Project
CIWMB	California Integrated Waste Management Board (formerly the California Waste Management Board)
CoSWMP	County Solid Waste Management Plan
DOC	California Department of Conservation
EIR	environmental impact report
EPA	U.S. Environmental Protection Agency
EPS	expanded polystyrene foam
HDPE	high density polyethylene
HHW	household hazardous waste
HHWE	Household Hazardous Waste Element
HHWF	household hazardous waste facility
IWMP	Integrated Waste Management Plan
LDPE	low density polyethylene
LEA	local enforcement agency
MRF	material recovery facility
MSW	municipal solid waste
NRC	National Recycling Coalition
OCC	old corrugated containers
ONP	old newspaper
PCB	polychlorinated biphenyls
PET	polyethylene terephthalate plastic
SB	Senate Bill
SQG	small quantity generator
SRRE	Source Reduction and Recycling Element

Glossary of Terms

(1) Agricultural wastes.
"Agricultural wastes" means solid wastes of plant and animal origin, which result from the production and processing of farm or agricultural products, including manures, orchard and vineyard prunings, and crop residues, which are removed from the site of generation for solid waste management. Agricultural refers to SIC Codes 011 through 0291.

(2) Aluminum can or aluminum container.
"Aluminum can" or "aluminum container" means any food or beverage container that is composed of at least 94% aluminum.

(3) Asbestos.
"Asbestos" means fibrous forms of various hydrated minerals, including chrysotile (fibrous serpentine), crocidolite (fibrous reibecktite), amosite (fibrous cummingtonite-grunerite), fibrous tremolite, fibrous actinolite, and fibrous anthophyllite.

(4) Ash.
"Ash" or "ashes" means the residue from the combustion of any solid or liquid material.

(5) Bi-metal container.
"Bi-metal container" means any metal container composed of at least two different types of metals, such as a steel container with an aluminum top.

(6) Best readily available and applicable data or representative data.
"Best readily available and applicable data" or "representative data" means information that is available to a jurisdiction from published sources, field sampling, the Board, or other identifiable entities which is the most current data and which addresses the situation being examined.

(7) Buy-back recycling center.
"Buy-back recycling center" means a facility which pays a fee for the delivery and transfer of ownership to the facility of source separated materials, for the purpose of recycling or composting.

(8) Capital costs.
"Capital costs" means those direct costs incurred in order to acquire real property assets such as land, buildings and building additions; site improvements; machinery; and equipment.

(9) Commercial solid wastes.
"Commercial solid waste" means solid waste originating from stores, business offices, commercial warehouses, hospitals, educational, health care, military, and correctional institutions, non-profit research organizations, and government offices. Commercial solid waste refers to SIC Codes 401 through 4939, 4961, and 4971 (transportation, communications and certain utilities), 501 through 5999 (wholesale and retail trade), 601 through 6799 (finance, insurance and real estate), 701 through 8748 (public and private service industries such as hospitals and hotels), and 911 through 9721 (public administration). Commercial solid wastes do not include construction and demolition waste.

(10) Commercial unit.
"Commercial unit" means a site zoned for a commercial business and which generates commercial solid wastes.

(11) Composition.
"Composition" means a set of identified solid waste materials, categorized into waste categories and waste types pursuant to sections 18722(i) and (j) of Article 6.1 of this Chapter.

(12) Composting.
"Composting" means a method of waste treatment which produces a product meeting the definition of "compost" in Public Resources Code section 40116.

(13) Composting facility.
"Composting facility" means a permitted solid waste facility at which composting is conducted and which produces a product meeting the definition of "compost" in Public Resources Code section 40116.

(14) Construction and demolition waste.
"Construction and demolition waste" includes solid wastes, such as building materials; and packaging and rubble resulting from construction, remodeling, repair and demolition operations on pavements, houses, commercial buildings, and other structures. Construction refers to SIC Codes 152 through 1794, 1796, and 1799. Demolition refers to SIC Code 1795.

(15) Corrugated container.
"Corrugated container" means a paperboard container fabricated from two layers of kraft linerboard sandwiched around a corrugating medium. Kraft linerboard means paperboard made from wood pulp produced by a modified sulfate pulping process, with

basis weight ranging from 18 to 200 pounds, manufactured for use as facing material for corrugated or solid fiber containers. Linerboard also may mean that material which is made from reclaimed paper stock. Corrugating medium means paperboard made from chemical or semichemical wood pulps, straw or reclaimed paper stock, and folded to form permanent corrugations. Corrugated container refers to SIC Code 2653.

(16) Cost-effective.
"Cost-effective" means a measurement of cost compared to an unvalued output (e.g., the cost per ton of solid waste collected) such that the lower the cost, the more cost-effective the action.

(17) Disposal.
"Disposal" means the management of solid waste through landfilling or transformation at permitted solid waste facilities.

(18) Disposal capacity.
"Disposal capacity" means the capacity, expressed in either weight in tons or its volumetric equivalent in cubic yards, which is either currently available at a permitted solid waste landfill, or will be needed for the disposal of solid waste generated within the jurisdiction over a specified period of time.

(19) Diversion alternative.
"Diversion alternative" means any activity, existing or occurring in the future, which has been, is, or will be implemented by a jurisdiction which could result in or promote the diversion of solid waste, through source reduction, recycling or composting, from solid waste landfills and transformation facilities.

(20) Drop-off recycling center.
"Drop-off recycling center" means a facility which accepts delivery or transfer of ownership of source separated materials for the purpose of recycling or composting, without paying a fee. Donation of materials to collection organizations, such as charitable groups, is included in this definition.

(21) Durability.
"Durability" means the ability of a product to be used for its intended purpose for a period greater than the mean useful product life span of similar products.

(22) End market or end use.
"End market" or "end use" means the use or uses of a diverted material or product which has been returned to the economic mainstream, whether or not this return is through sale of the material or product. The material or product can have a value which is less than the solid waste disposal cost.

(23) Feasible.
"Feasible" means that a specified program, method, or other activity can, on the basis of cost, technical requirements and time frame for accomplishment, be undertaken to achieve the objectives and tasks identified by a jurisdiction in a Countywide Integrated Waste Management Plan.

(24) Ferrous metals.
"Ferrous metals" means any iron or steel scrap which has an iron content sufficient for magnetic separation.

(25) Food waste.
"Food waste" means all animal and vegetable solid wastes generated by food facilities, as defined in California Health and Safety Code section 27521, or from residences, that result from the storage, preparation, cooking, or handling of food.

(26) Hazard.
"Hazard" means having one or more of the characteristics that cause a substance or combination of substances to qualify as a hazardous material, as defined by section 66084 of Title 22 of the California Code of Regulations.

(27) Household hazardous waste.
"Household hazardous wastes" are those wastes resulting from products purchased by the general public for household use which, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may pose a substantial known or potential hazard to human health or the environment when improperly treated, disposed, or otherwise managed.

(28) Household hazardous waste collection.
"Household hazardous waste collection " means a program activity in which household hazardous wastes are brought to a designated collection point where the household hazardous wastes are separated for temporary storage and ultimate recycling, treatment, or disposal.

(29) Implementation.
"Implementation" means the accomplishment of the program tasks as identified in each component required by section 18733 of this Chapter.

(30) Industrial solid waste.
"Industrial solid waste" means solid waste originating from mechanized manufacturing facilities, factories, refineries, construction and demolition projects, and publicly operated treatment works, and/or solid wastes placed in debris boxes.

(31) Industrial unit.
"Industrial unit" means a site zoned for an industrial business and which generates industrial solid wastes.

(32) Inert solids or inert waste.
"Inert solids" or "inert waste" means a non-liquid solid waste including, but not limited to, soil and concrete, that does not contain hazardous waste or soluble pollutants at concentrations in excess of water-quality objectives established by a regional water board pursuant to Division 7 (commencing with section 13000) of the California Water Code and does not contain significant quantities of decomposable solid waste.

(33) Jurisdiction.
"Jurisdiction" means the city or county responsible for preparing any one or all of the following: the Countywide Integrated Waste Management Plan, or the Countywide Siting Element, or the Source Reduction and Recycling Element.

(34) Marine wastes.
"Marine wastes" means solid wastes generated from marine vessels and ocean work platforms, solid wastes washed onto ocean beaches, and litter discarded on ocean beaches.

(35) Market development.
"Market development" means a method of increasing the demand for recovered materials so that end markets for the materials are established, improved or stabilized and thereby become more reliable.

(36) Materials recovery facility.
"Materials recovery facility" means a permitted solid waste facility where solid wastes or recyclable materials are sorted or separated, by hand or by use of machinery, for the purposes of recycling or composting.

(37) Medium-term planning period.
"Medium-term planning period" means a period beginning in the year 1996 and ending in the year 2000.

(38) Mixed paper.
"Mixed paper" means a waste type which is a mixture, unsegregated by color or quality, of at least two of the following paper wastes: newspaper, corrugated cardboard, office paper, computer paper, white paper, coated paper stock, or other paper wastes.

(39) Model component format.
"Model component format" means that format described in sections 18733.1 through 18733.6 of Article 6.2 of this Chapter which shall be used for preparation of several of the individual components of a SRR Element.

(40) Municipal solid waste or MSW.
"Municipal solid waste" or "MSW" means all solid wastes generated by residential, commercial, and industrial sources, and all solid

waste generated at construction and demolition sites, at food-processing facilities, and at treatment works for water and waste water, which are collected and transported under the authorization of a jurisdiction or are self-hauled. Municipal solid waste does not include agricultural crop residues (SIC Codes 071 through 0724, 0751), animal manures (SIC Code 0751), mining waste and fuel extraction waste (SIC Codes 101 through 1499), forestry wastes (SIC Codes 081 through 0851, 2411 and 2421), and ash from industrial boilers, furnaces and incinerators.

(41) Non-ferrous metals.
"Non-Ferrous metals" means any metal scraps that have value, and that are derived from metals other than iron and its alloys in steel, such as aluminum, copper, brass, bronze, lead, zinc and other metals, and to which a magnet will not adhere.

(42) Non-recyclable paper.
"Non-recyclable paper" means discarded paper which has no market value because of its physical or chemical or biological characteristics or properties.

(43) Non-renewable resource.
"Non-renewable resource" means a resource which cannot be replenished, such as those resources derived from fossil fuels.

(44) Normally disposed of.
"Normally disposed of" refers to those waste categories and /or waste types which: 1) have been demonstrated by the Solid Waste Generation Study, conducted pursuant to section 18722 of this Chapter, to constitute at least 0.001% of the total weight of solid wastes disposed in a solid waste stream attributed to the jurisdiction as of January 1, 1990; 2) which are deposited at permitted solid waste landfills or transformation facilities subsequent to any recycling or composting activities at those solid waste facilities; and 3) which are allowed to be considered in the establishment of the base amount of solid waste from which source reduction, recycling, and composting levels shall be calculated, pursuant to the limitations listed in Public Resources Code section 41781(b).

(45) Old newspaper.
"Old newspaper" means any newsprint which is separated from other types of solid waste or collected separately from other types of solid waste and made available for reuse and which may be used as a raw material in the manufacture of a new paper product.

(46) Operational costs.
"Operational costs" means those direct costs incurred in maintaining the ongoing operation of a program or facility. Operational costs do not include capital costs.

(47) Organic waste.
"Organic waste" means solid wastes originated from living organisms and their metabolic waste products, and from petroleum, which contain naturally produced organic compounds, and which are biologically decomposable by microbial and fungal action into the constituent compounds of water, carbon dioxide, and other simpler organic compounds.

(48) Other plastics.
"Other plastics" means all waste plastics except polyethylene terephthalate (PET) containers, film plastics, and high density polyethylene (HDPE) containers.

(49) Permitted capacity.
"Permitted capacity" means that volume in cubic yards or weight in tons which a solid waste facility is allowed to receive, on a periodic basis, under the terms and conditions of that solid waste facility's current Solid Waste Facilities Permit issued by the local enforcement agency and concurred in by the California Integrated Waste Management Board.

(50) Permitted landfill.
"Permitted landfill" means a solid waste landfill for which there exists a current Solid Waste Facilities Permit issued by the local enforcement agency and concurred in by the California Integrated Waste Management Board, or which is permitted under the regulatory scheme of another state,.

(51) Permitted solid waste facility.
"Permitted solid waste facility" means a solid waste facility for which there exists a Solid Waste Facilities Permit issued by the local enforcement agency and concurred in by the California Integrated Waste Management Board, or which is permitted under the regulatory scheme of another state,.

(52) Plan or Countywide Integrated Waste Management Plan.
"Plan" or "Countywide Integrated Waste Management Plan" means the Countywide Integrated Waste Management Plan as defined in section 41750 of the Public Resources Code.

(53) Program.
"Program" means the full range of source reduction, recycling, composting, special waste, or household hazardous waste activities undertaken by or in the jurisdiction or relating to management of the jurisdiction's waste stream to achieve the objectives identified in the Source Reduction, Recycling, Composting, and Special Waste components, and Household Hazardous Waste Element, respectively.

(54) Purchase preference.
"Purchase preference" means a preference provided to a wholesale or retail commodity dealer which is based upon the percentage

amount that the costs of products made from recycled materials may exceed that of similar non-recycled products and still be deemed the lowest bid.

(55) Rate structure.
"Rate structure" means that set of prices established by a jurisdiction, special district (as defined in Government Code section 56036), or other rate setting authority to compensate the jurisdiction, special district or rate setting authority for the partial or full costs of the collection, processing, recycling, composting, and/or transformation or landfill disposal of solid wastes.

(56) Recovered material.
"Recovered material" means material which has been retrieved or diverted from disposal or transformation for the purpose of recycling, re-use or composting. "Recovered material" does not include those materials generated from and reused on site for manufacturing purposes.

(57) Region.
"Region" means the combined geographic area of two or more incorporated areas; two or more unincorporated areas; or any combination of incorporated and unincorporated areas.

(58) Repairability.
"Repairability" means the ability of a product or package to be restored to a working or usable state at a cost which is less than the replacement cost of the product or package.

(59) Residential solid waste.
"Residential solid waste" means solid waste originating from single-family or multiple family dwellings .

(60) Residential unit.
"Residential unit" means a site occupied by a building which is zoned for residential occupation and whose occupants generate residential solid wastes.

(61) Reusability.
"Reusability" means the ability of a product or package to be used more than once in its same form.

(62) Re-use.
"Re-use" means the use, in the same form as it was produced, of a material which might otherwise be discarded.

(63) Rubber.
"Rubber" means an amorphous polymer of isoprene derived from natural latex of certain tropical plants or from petroleum.

(64) Salvage.
"Salvage" means the controlled removal of solid waste materials at a permitted solid waste facility for recycling, re-use, composting, or transformation.

(65) Seasonal.
"Seasonal" means those periods of time during the calendar year which are identifiable by distinct cyclical patterns of local climate, demography, trade or commerce.

(66) Sewage sludge.
"Sewage sludge" means residual solids and semi-solids resulting from the treatment of waste water, but does not include waste water effluent discharged from such treatment processes.

(67) Short-term planning period.
"Short-term planning period" means a period beginning in the year 1991 and ending in the year 1995.

(68) SIC Code.
"SIC Code" means the standards published in the U.S. Standard Industrial Classification Manual (1987), which is herein incorporated by reference.

(69) Sludge.
"Sludge" means residual solids and semi-solids resulting from the treatment of water, waste water, and/or other liquids. Sludge includes sewage sludge and sludge derived from industrial processes, but does not include effluent discharged from such treatment processes.

(70) Solid Waste Generation Study.
"Solid Waste Generation Study" means the study undertaken by a jurisdiction to characterize its solid waste stream and comply with all the requirements of sections 18722, 18724, and 18726 of this Chapter.

(71) Source Reduction and Recycling Element or SRR Element.
"Source Reduction and Recycling Element" or "SRR Element" means the source reduction and recycling element required pursuant to Public Resources Code sections 41000 and 41300.

(72) Source separated.
"Source separated" describes the segregation, by the generator, of materials designated for separate collection for some form of materials recovery or special handling.

(73) Special waste.
"Special waste" means any hazardous waste listed in section 66740 of Title 22 of the California Code of Regulations, or any waste which has been classified as a special waste pursuant to section 66744 of Title 22 of the California Code of Regulations, or which

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 California Code of Regulations. 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.

(74) Statistically representative.
"Statistically representative" means those representative and random samples of units that are taken from a population sample , pursuant to the procedures given in Appendix 1 of Article 6.1 of this Chapter. For the purposes of this definition, population sample includes, but is not limited to, a sample from a population of solid waste generation sites, solid waste facilities and recycling facilities, or a population of items of materials and solid wastes in a refuse vehicle load of solid waste.

(75) Tin can or tin container.
"Tin can" or "tin container" means any food or beverage container that is composed of steel with a tin coating.

(76) Ton.
"Ton" means a unit of weight in the U.S. Customary System of Measurement, an avoirdupois unit equal to 2,000 pounds. Also called short ton or net ton.

(77) Transformation facility.
"Transformation facility" means a facility whose principal function is to convert, combust, or otherwise process solid waste by incineration, pyrolysis, destructive distillation, or gasification, or to chemically or biologically process solid wastes, for the purpose of volume reduction, synthetic fuel production, or energy recovery. Transformation facility does not include a composting facility.

(78) Volume.
"Volume" means a three dimensional measurement of the capacity of a region of space or a container. Volume is commonly expressed in terms of cubic yards or cubic meters. Volume is not expressed in terms of mass or weight.

(79) Waste categories.
"Waste categories" means the grouping of solid wastes with similar properties into major solid waste classes, such as grouping together office, corrugated and newspaper as a paper waste category, as identified by the solid waste classification system contained in section 18722 of Article 6.1 of this Chapter, except where a component-specific requirement provides alternative means of classification.

(80) Waste diversion.
"Waste diversion" means to divert solid waste, in accordance with all applicable federal, state and local requirements, from disposal at solid waste landfills or transformation facilities through source reduction, recycling or composting.

(81) Waste generator.
"Waste generator" means any person, as defined by section 40170 of the Public Resources Code, whose act or process produces solid waste as defined in Public Resources Code section 40191, or whose act first causes solid waste to become subject to regulation.

(82) Waste type.
"Waste type" means identified wastes having the features of a group or class of wastes which are distinguishable from any other waste type, as identified by the waste classification system contained in section 18722 of Article 6.1 of this Chapter, except where a component-specific requirement provides alternative means of classification.

(83) White goods.
"White goods" means discarded, enamel-coated major appliances, such as washing machines, clothes dryers, hot water heaters, stoves and refrigerators.

(84) Wood waste.
"Wood waste" means solid waste consisting of wood pieces or particles which are generated from the manufacturing or production of wood products, harvesting, processing or storage of raw wood materials, or construction and demolition activities.

(85) Yard waste.
"Yard waste" means any wastes generated from the maintenance or alteration of public, commercial or residential landscapes including, but not limited to, yard clippings, leaves, tree trimmings, prunings, brush, and weeds.

NOTE: Authority cited: Sections 40502 and 41824, Public Resources Code. Reference: Sections 41000, 41300 and 41823, Public Resources Code.

Chapter I

EXECUTIVE SUMMARY

In 1989 the California legislature passed the Integrated Waste Management Act, Assembly Bill 939 and subsequent revision bills which require local governments to reduce, reuse, recycle, or compost a portion of the waste materials that are typically disposed. Specifically, by January 1, 1995, each jurisdiction must divert at least 25 percent of its solid waste from landfills through source reduction, recycling and composting. A 50 percent diversion level is mandated by January 1, 2000.

To help reach these goals, Gilroy is required to produce this *Source Reduction and Recycling Element (SRRE),* essentially its new integrated waste management blueprint. This document is a comprehensive ten-year plan outlining detailed actions which the City plans to take in response to meeting the mandated goals.

AB 939 requires that each city in California prepare, adopt and submit to its county a SRRE that includes the following:

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

In this report, the discussion and analysis for each of the above components is included in a separate chapter, numbered II through X. The remainder of the report includes the separate Household Hazardous Waste

element (HHWE) with chapters discussing each component, as well as Appendices for each Element.

The integrated waste management hierarchy established by AB 939 ranks the importance of four general ways to manage and dispose of trash:

- Source Reduction to reduce generation of wastes.
- Recycling and Composting of waste materials.
- Environmentally safe Transformation of wastes, such as incineration, distillation, and pyrolysis.
- Environmentally safe Landfilling.

The City of Gilroy's SRRE applies this hierarchy as a planning tool in the selection of programs designed to meet the 25 and 50 percent diversion goals mandated by the state.

Existing source reduction and recycling efforts in Gilroy have resulted in diverting approximately 12.6 percent of the solid waste generated in the city. As further described in Chapter II, this does not include the amount of waste diverted through transformation. AB 939 specifies that transformation tonnage diversion (approximately 1572 tons per year in Gilroy) can only be applied to the medium-term 50 percent diversion goal for the year 2000.

Goals for Source Reduction and Recycling Element (SRRE)

The primary goal of the City of Gilroy's SRRE is to meet the state-mandated waste diversion goals of 25 and 50 percent by 1995 and 2000, respectively. As noted above, the City is currently diverting 12.6 percent of its solid waste stream by a variety of programs.

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

1. Meet or exceed state-mandated waste diversion rates through source reduction, recycling, and composting.
2. Support and encourage regional solutions to solid waste management problems.
3. Maximize recycling and composting opportunities within the City.
4. Intensify community awareness activities to maximize participation in source reduction, recycling, and composting programs.

5. Plan sufficient landfill capacity to dispose of wastes that cannot be reduced, reused, recycled, or composted.

6. Develop and expand local and regional markets for recovered materials.

7. Minimize adverse environmental impacts and ensure public health and safety.

Mandated Format of the SRRE

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

- Objectives.
- Existing Conditions Description.
- Evaluation of Alternatives.
- Program Implementation.
- Monitoring and Evaluation.

The regulations dictate that the alternative programs 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 four components of the City's SRRE -- education/public information, disposal facility capacity, funding, and integration--deviate somewhat in format from the first four, as will be noted from a review of the SRRE. The apparent lack of consistency in the format is thus 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).

Component Overview

With remaining disposal capacity at the Pacheco Pass Sanitary Landfill of approximately 11 years as of January 1, 1991, new and expanded programs will reduce the City's dependence on available landfill space and expand the capacity for Gilroy's wastes well beyond the 15 year planning period ending in 2005.

Expanded source reduction activities are planned to prevent materials from entering the solid waste stream as described in Chapter III. These activities will require a vigorous public education campaign which would include advice on how to select longer lasting or recyclable products and how to participate in programs through purchasing and donating items for reuse.

Other related issues would also be addressed in the public awareness component, Chapter VII, include procurement policies, home and on-site composting, volume-based user fees for refuse collection, and ordinances restricting certain materials from disposal at local solid waste facilities.

An expanded recycling program is also planned, as described in Chapter IV, *Recycling*. The existing residential recycling program would be expanded to include: multi-family dwellings; more types of recyclable materials in collection programs for all residences; volume-based user fees for refuse collection; and extensive public information and education. The program would include a combination of curbside collection, drop-off centers, buy-back centers, and the expansion of the materials processing system at the Transfer Station. To achieve the quantity of recyclable materials, and to improve their quality for better markets, a material recovery facility (MRF) should be considered at the San Martin Transfer Station in the medium-term. However, if this is not feasible, further expansion of the existing processing system is planned.

Particular emphasis will be placed on commercial recycling and composting of green yard and food wastes. Waste from Gilroy's commercial sector contributes to over 60 percent of the solid waste generated in the City (Chapters II and IV). The commercial recycling program is based primarily on establishing a cardboard and glass recycling program that will be expanded to a regular collection service for these and other recyclable materials; structuring refuse collection rates to encourage source reduction and recycling; outreach and technical support to businesses and institutions about how to recycle; encouraging businesses and institutions to participate in waste audits, and to pro-actively plan to achieve goals set by the City on a site-specific or business category basis.

To support this program that is expected to divert about 16 percent of Gilroy's wastes, the program will include workshops for specific industries where peers describe ways that they have established recycling and waste reduction programs and the advantages, such as money savings, of doing so.

A comprehensive composting program for all sectors is needed to meet the State's mandated diversion goals (Chapter V). The compost program calls for curbside collection of source-separated green yard waste from single-family households, and encouraging the use of a drop-off site or sites by commercial haulers and generators; by expanding the program using a centralized processing facility to include food and agricultural wastes; providing public education and

promotion; providing program incentives through volume-based fee structures; and using or marketing the end products as soil amendments to local farmers.

Special wastes, including tires, construction and demolition debris, white goods, appliances and other materials, do not constitute a large percentage of the Gilroy waste stream. However, special wastes will be targeted for diversion by establishing a tire recovery program, banning used tire disposal and expanding existing salvaging programs at the transfer station and landfill for white goods and other targeted special wastes (Chapter VI.)

A comprehensive education and public information campaign will help create a successfully-integrated waste management program in Gilroy (Chapter VII). Besides building on increasingly widespread awareness of environmental and solid waste issues, the public education program will create broad visibility for the source reduction and recycling program. Lively visual aids will help motivate increased participation by residential and business sectors. And, just as critical, are techniques to increase awareness of excess or non-recyclable packaging as well as buying recycled and composted materials.

As described in the Funding Chapter IX, the City will research and probably apply for State market development block grants as well as other available funds to be applied to market development of recycled products and services. The City intends to seek additional funds by considering revisions of the existing refuse rate system. Opportunities put in place by AB-939 for supplemental funding to help offset these costs will be evaluated.

The source reduction, recycling, composting and special wastes components will be integrated as described in Chapter X, so that the programs selected for implementation from each component achieve the maximum potential for diverting solid wastes from Gilroy's landfill.

Chapter II

WASTE GENERATION STUDY

II.1. CHARACTERIZATION OF DISPOSED WASTE

II.1.1 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 law also mandates that 25 percent and 50 percent solid waste diversion rates be met in 1995 and 2000, respectively.

The information presented in this study characterizes the waste quantities disposed from the Gilroy waste stream. The results of the study establish the baseline data for future integrated waste management practices in the City as well as Gilroy's possible coordination with Santa Clara County. The quantity and data will be used to calculate diversion data and finally 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 percent and 50 percent diversion goals.

Santa Clara County retained a firm to plan and conduct a characterization study of waste disposed in the southern portion of Santa Clara County (South County). The South County area is composed of the following jurisdictions: 1) unincorporated south Santa Clara County; 2) City of Gilroy; and 3) City of Morgan Hill.

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 respective jurisdictions.

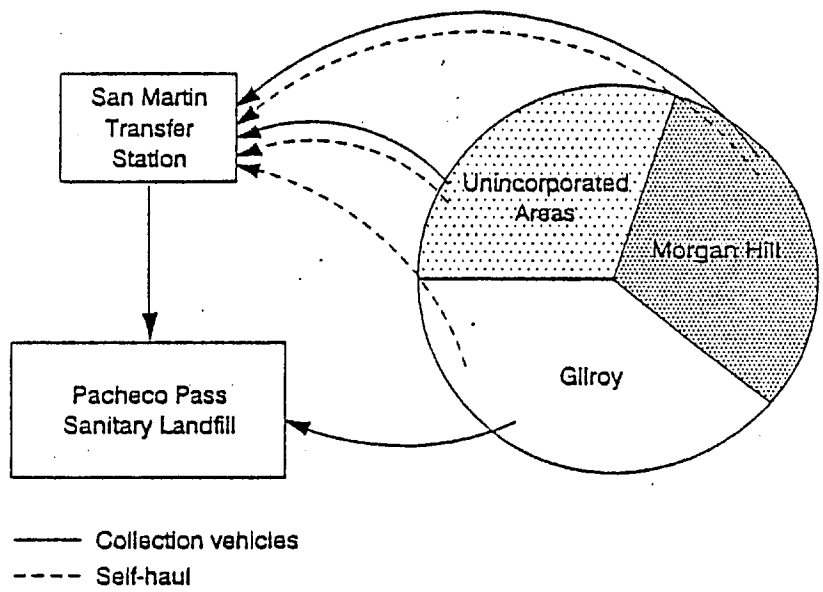
II.1.2. Current Waste Disposal Practice

With a few minor exceptions, the two permitted solid waste facilities that receive solid waste from Gilroy are: 1) the San Martin Transfer Station and Recycling Center (14080 Llagas Avenue, in unincorporated San Martin); and 2) the Pacheco Pass Sanitary Landfill (east of Gilroy, off Pacheco Pass Highway and Bloomfield Road). The San Martin Transfer Station receives compacted wastes

from the unincorporated South County and from the City of Morgan Hill. The transfer station also accepts self-haul wastes from all three jurisdictions. Solid wastes received at the Transfer Station are then compacted and transferred to trailers. Thereafter, the wastes are hauled approximately 10 miles to the Pacheco Pass Sanitary Landfill for disposal. The Pacheco Pass Sanitary Landfill receives some compacted wastes directly from the City of Gilroy, but does not accept public self-haul waste. See Figure II-1 regarding typical South County disposal patterns.

Figure II-1

Typical Disposal Pattern for South Santa Clara County



II.1.3 Sampling Methodology of Solid Waste Collection Vehicles

A Test Plan which outlines the field and sorting activities for Gilroy and lists the disposed waste components for sorting is included in Appendix A. The California Integrated Waste Management Board (CIWMB) has found that the waste categories and types presented herein 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. Because of the lists' statewide uniform application, it will allow the Board to compare the appropriateness of a jurisdiction's chosen diversion methods with the quantities and types of waste currently disposed. For further clarification, the following CIWMB definitions are used when referring to residential, commercial, and industrial wastes.

- **Residential Waste**: Solid waste originating from single- 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.

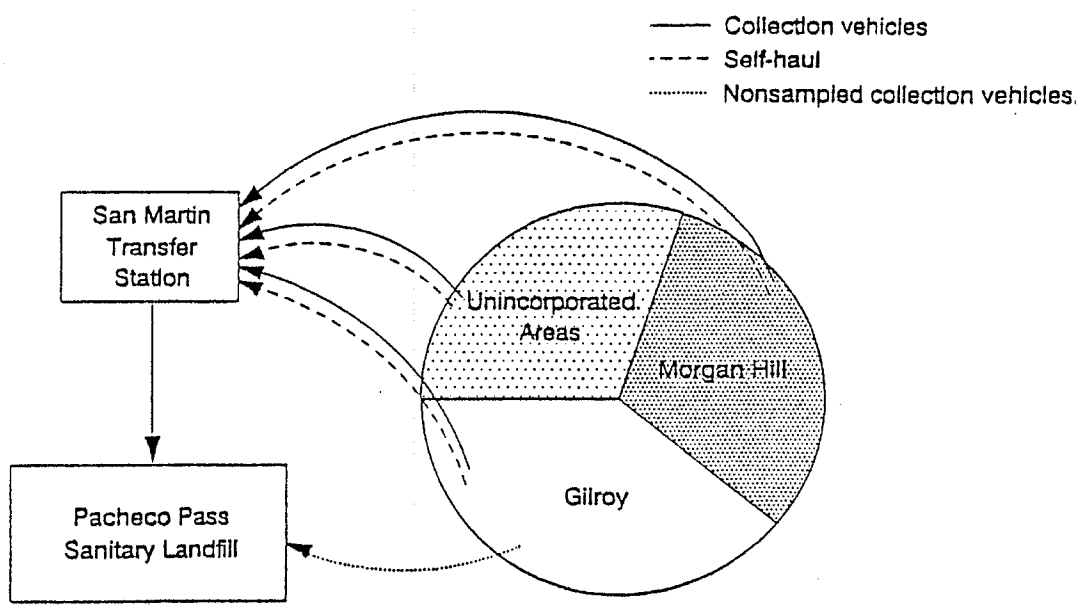
- **Commercial Waste**: Solid waste originating from stores; business offices; commercial warehouses; hospitals; educational, health care, military, and correctional institutions; non-profit research organizations; and government offices. The majority of commercial waste was received for sampling in 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. Industrial waste was sampled from debris boxes only.

The characterization of disposed waste from refuse collection trucks was conducted from April 1 to 5, 1991 at the San Martin Transfer Station and Recycling Center. Assistance in the study was provided by South Valley Refuse Disposal, Inc. (SVRD). Initial discussions with SVRD prior to sampling, provided background information regarding jurisdictional boundaries, hauler routes, and frequency of collection of solid waste. In order to consolidate the sampling and sorting procedure in one location, SVRD routed solid waste collection vehicles which serve the City of Gilroy directly to the transfer station is shown in Figure II-2.

Figure II-2

Study Period Disposal Pattern for South Santa Clara County



The Draft ASTM *Method for the Determination of the Composition of Unprocessed Municipal Solid Waste,* which describes the testing, analytical, and statistical method for sampling, is included in Appendix A. Based on the SVRD background data, each jurisdiction's daily residential, commercial, and industrial waste sources could be readily sampled on an as-needed basis during the week of sampling to reflect each jurisdiction's waste stream. The "as-needed procedure" for selection of vehicle loads provides an unbiased and random method of selection of representative vehicle loads of waste because the investigator has no basis (other than the need to sort) upon which to subjectively select one vehicle over another.

SVRD further assisted in confirming waste sources (from route logbooks for each truck), transporting sample loads to the sampling area, and sorting the designated samples. This work and all data recording were supervised and documented throughout the sampling period by CalRecovery field personnel.

Accuracy Statement

The sampling program for disposed waste analysis was designed to achieve composition results that would be within ± 15 percent of the population mean (x) of each jurisdiction's composite disposed waste sources at the 90 percent level of confidence for the majority of waste categories (See Test Plan in Appendix A). The jurisdiction's composite disposed waste stream is defined as the sum of its waste from residential, commercial, and industrial sources. Because jurisdiction-specific composition data were not available at the time of this study, the Test Plan assumes a coefficient of variation of 0.3 (s/x) among the majority of waste categories. 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 as noted below) measured in previous waste characterizations in California after 1984. For example, the residential and commercial total paper average compositions (x) and standard deviation(s), as determined in the October 1990 waste charactization study for the City of Sunnyvale[1] (located in North Santa Clara County), 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 percent of the population mean is computed as follows:

[1] *Source Reduction and Recycling Element*, prepared by Cal Recovery Systems, Inc. for the City of Sunnyvale.

$$n = \left[\frac{t^* \ s / \overline{x}}{e} \right]^2$$

where t^* is the t-statistic and s/x is the coefficient of variation. Through substitution:

$$n = \left[\frac{1.683 \ (0.3)}{0.15} \right]^2$$

using t^*_{90} (n=12) through substitution:

$$n = \left[\frac{1.7959 \ (0.3)}{0.15} \right]^2$$

$$n =` 13$$

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 16 to 24.

Table II-1

NUMBER OF VEHICLES SAMPLED FOR THE SOUTH SANTA CLARA COUNTY WASTE FIELD ANALYSIS (April 1-7, 1991)

Waste Source	Gilroy		Morgan Hill		Un-incorporated		Total	
	P	A	P	A	P	A	P	A
Residential	8	8	8	9	7	7	23	24
Commercial	6	5	6	7	6	6	18	18
Industrial	5	3	5	8	5	6	15	17
TOTALS	**19**	**16**	**19**	**24**	**18**	**19**	**56**	**59**

Note:
P=Proposed number of vehicles
Actual=Actual number of vehicles used in Field Analysis
Source:
Resource Management Associates, 1991

Number of Vehicles Sampled

The proposed as well as the actual total number of refuse collection vehicles sampled for each jurisdiction for the disposed waste analysis are presented in Table II-1. The table also shows the number of vehicles sampled by waste type.

II.1.4 Sampling Methodology for Self-Haul Waste

A visual survey of the self-haul waste was conducted from April 1 to 7, 1991 at the San Martin Transfer Station. The visual inspection included observation at the transfer station on Saturday and Sunday to account for increased public usage and potential variation in composition of the waste compared to that delivered Monday through Friday.

The main sources of this waste type 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 uncompacted self-haul waste. Programs selected for implementation to meet the required 25 percent and 50 percent diversion goals can be better determined if self-haul is addressed as a separate waste source.

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 were able to analyze and record a large number of samples. Over 580 vehicles were visually surveyed for volume, waste type, and composition for Gilroy.

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 do not fit into one of the categories listed above and often contain large percentages of solid waste from residents who do not receive curbside or regular collection service.

- **Miscellaneous**: loads which do not fit into one of the categories listed above and often contain large percentages of solid waste from residents who do not receive curbside or regular collection service.

The yard waste, construction/demolition, and dirt/rubble categories generally contain small percentages of residential and/or commercial type waste. While most self-haul waste can be readily categorized into one of the four above categories, purely homogeneous self-haul waste loads are generally quite rare.

Concurrent with the visual sampling, scale-house personnel recorded the origin (jurisdiction) of self-haul loads during the entire sampling period. This information provided a means for apportionment of quantity data to each jurisdiction. Composition and quantity data for self-haul waste were developed based on discussions with hauler and transfer station personnel, field observations and measurements by CalRecovery and 6 months of data reported from the scalehouse.

II.1.5 Results

The average compositions (percent by weight) and the estimated annual disposed quantities (in tons/year) for residential, commercial, industrial, and self-haul waste are shown in Table II-2. The results are presented in accordance with the categories set forth 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 (i.e., waste usually collected in rear loaders) and can be readily salvaged or identified from the tipping floor. The following items were included in the "Other Misc. Organics" category: diapers, animal refuse, and other organic materials. Diapers comprise greater than 50 percent of the "Other Misc. Organics" waste. The "Inerts Solids" category included the following items: dirt, brick, concrete, and other inert substances.

Residential Wastes

Vehicles containing residential waste were sampled each day during the five-day collection vehicle sample period.

The data in Table II-2 show that approximately one-third (33.2 percent) of residential disposed waste consists of yard debris. Though yard waste is the single largest contributor to the waste stream, the total paper category comprises almost 35 percent. These two categories make up approximately 70 percent of the residential waste stream. The data in the table indicate that residential disposed waste constitutes about 20.7 percent of the total disposed waste by the City of Gilroy.

Table II-2

COMPOSITION AND ANNUAL QUANTITIES OF DISPOSED WASTE FOR CITY OF GILROY

Waste Material	Waste Source: Residential (N=8) %	Residential TPY	Commercial (N=5) %	Commercial TPY	Industrial (N=3) %	Industrial TPY	Self Haul (Visual) %	Self Haul TPY	Total Disposed %	Total Disposed TPY
1) TOTAL PAPER	**34.8**	**3064**	**33.5**	**3979**	**6.8**	**1184**	**15.9**	**720**	**21.0**	**8946**
OCC/Kraft	5.5	483	12.0	1423	2.3	401	6.5	295	6.1	2603
Mixed Paper	10.5	927	7.6	903	1.6	283	1.7	79	5.1	2192
Newsprint	6.0	532	2.5	297	0.6	106	1.2	54	2.3	990
High-Grade	2.5	225	0.5	54	0.6	119	0.3	13	0.9	411
Magazines/Glossy ins.	2.5	219	0.0	5	0.0	14	0.2	9	0.6	247
Other Paper	7.7	679	10.9	1297	1.5	260	5.9	269	5.8	2504
2) TOTAL PLASTICS	**7.8**	**687**	**11.0**	**1298**	**3.4**	**597**	**5.4**	**246**	**6.6**	**2832**
HDPE	0.7	60	1.0	118	0.4	85	0.2	10	0.6	273
PET	0.1	12	0.1	10	0.2	40	0.0	0	0.1	62
Film	4.7	418	6.4	756	0.9	157	3.8	173	3.5	1506
Polystyrene foam	0.2	16	0.5	56	0.0	2	0.1	6	0.1	80
Other Plastics	2.1	182	3.0	359	1.8	314	1.2	57	2.1	912
3) TOTAL GLASS	**1.7**	**147**	**1.9**	**221**	**0.1**	**20**	**1.3**	**59**	**1.0**	**448**
Refillable Glass Bev.	0.0	2	0.0	0	0.0	0	0.1	3	0.0	5
CA Redemption Value	0.5	46	1.1	128	0.1	18	0.1	5	0.4	197
Other Recyclable	1.1	99	0.8	90	0.0	2	0.1	5	0.4	196
Other Non-Recyclable	0.0	0	0.0	3	0.0	0	1.0	46	0.1	50
4) TOTAL METALS	**3.8**	**338**	**8.8**	**1045**	**1.8**	**323**	**11.2**	**510**	**5.2**	**2218**
Aluminum Cans	0.2	19	0.1	11	0.3	63	0.0	2	0.2	95
Bimetal Cans	0.0	0	0.0	0	0.0	0	0.4	20	0.0	20
Tin F&B Cans	1.7	146	1.6	191	0.2	41	1.5	67	1.0	445
Other Aluminum	0.2	19	1.1	133	0.0	0	0.2	10	0.3	162
Other Ferrous	1.8	155	6.0	709	1.2	220	7.2	326	3.3	1411
Non-Ferrous	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
White Goods	0.0	0	0.0	0	0.0	0	1.9	85	0.1	85
5) YARD WASTES	**33.2**	**2927**	**9.0**	**1062**	**6.3**	**1107**	**26.5**	**1201**	**14.0**	**6299**
6) OTHER ORGANICS	**14.7**	**1297**	**32.3**	**3821**	**73.0**	**12730**	**28.8**	**1306**	**45.0**	**19162**
Food, Processed waste	4.0	351	19.6	2327	54.8	9503	2.0	89	28.0	12275
Tires/Rubber	0.1	12	0.3	30	0.0	4	0.3	14	0.1	61
Wood waste	3.2	285	7.5	890	9.2	1597	20.3	920	8.0	3693
Ag. Crop Residue	0.0	0	0.0	0	0.0	0	3.7	169	0.3	169
Manure	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Textiles/Leather	3.0	264	1.7	197	0.9	164	0.0	0	1.4	626
Other Misc. Organics	4.4	385	3.2	378	8.4	1461	2.5	114	5.4	2339
7) OTHER WASTES	**4.0**	**352**	**1.9**	**220**	**7.9**	**1371**	**10.9**	**493**	**5.7**	**2437**
Inert Solids	3.9	348	0.0	1	7.3	1269	10.9	492	4.9	2111
HHW	0.0	4	1.8	219	0.5	102	0.0	1	0.7	326
8) SPECIAL WASTES [1]	**0.0**	**3**	**1.8**	**210**	**0.0**	**0**	**0.0**	**2**	**0.5**	**216**
TOTAL:	**100.0**	**8,816**	**100.0**	**11,874**	**100.0**	**17,332**	**100.0**	**4,537**	**100.0**	**42,559**

Notes:

Average may not sum to 100% due to rounding. % = percent of total by weight. TPY = Tons Per Year. N = Number of Vehicles Samples
F&B = Food & Beverage. OCC = Old Corrugated Cardboard. HHW = Household Hazardous Wastes.

1. Includes small household appliances

Source: CalRecovery Inc., 1990

Commercial Wastes

Generators of commercial waste were sampled randomly from front- and rear-loaders. SVRD personnel were available throughout the sampling program to provide assistance in determining load origin and route information regarding wastes from different sources in mixed loads.

The data in the table show that one-third (33.5 percent) of the commercial disposed waste consists of paper products. During the sampling period, approximately 5 percent of the total amount of OCC/Kraft weighed was identified as being contaminated (i.e., waxed, oil soaked, etc.). Though this 5 percent is of the total amount of OCC disposed, large amounts of OCC generally occur in commercial wastes. The highest contributor of OCC for Gilroy is the commercial waste stream.

Industrial Wastes

Table II-2 shows that 73 percent of the disposed industrial waste stream is comprised of Other Organics, with Food Wastes (mainly garlic and onion pomace) being the single largest waste type comprising 54.8 percent of the waste stream. The next single largest waste type is Wood, comprising 9.2 percent of the waste stream. A large amount of food waste from the processing of tomatoes (pulp and pomace), estimated to be about 8,000 to 10,000 TPY, is currently being landspread for composting. This volume is not counted as diversion since no amount is being landfilled.

The 6.3 percent composition for yard waste debris can be attributed, but not limited to, debris disposed of in roll-off containers which service large estates (e.g. maintenance and/or renovation) or working farms and ranches.

Self-Haul Wastes

Self-haul waste constitutes approximately 10 percent of the City's disposed solid waste. Of this total, approximately 26 percent can be attributed to loads categorized as yard debris, 20 percent as wood waste, approximately 16 percent as paper, 11 percent as construction/demolition debris, and approximately 11 percent as total metals. Self-haul wastes originating in Gilroy comprised approximately 25 percent of all the self-haul wastes delivered to the transfer station during the study period. Self-haul vehicles delivered, on average, a 1.4 cubic-yard load to the transfer station during the field study.

The apportionment of respective waste quantities and the estimated yearly disposed self-haul quantities are based on discussions with landfill and hauler representatives, field observations by CalRecovery, and data supplied by the landfill scalehouse.

II.1.6 Seasonality

It has been assumed that four seasons could potentially impact the disposed wastes in the City of Gilroy. The collection vehicle quantities supplied for the sampling period were representative of six months of disposed waste data and were doubled to provide estimated quantities on a 12-month basis. The self-haul quantities supplied for the sampling period were based on the weekly quantity reported to the scalehouse during the sampling period. The self-haul quantity for the period was then multiplied by 52 weeks to estimate annual quantities.

The amount of waste disposed by the food processing industry in the City of Gilroy varies greatly by season. Based on more than three years of reported monthly data, approximately three-quarters (76 percent) of this aggregate food processed waste is attributed exclusively to the seasonal increase in the generation of food processing wastes. The data suggest that food processing wastes disposed during peak production periods comprise approximately 54.8 percent of the annual total disposed waste.

The potential seasonal impacts on the remainder of the City of Gilroy's waste stream were considered based on the following factors: demographics of the area, degree of commercial development, local meteorology, the results of the disposed waste characterization, and the results of seasonal waste characterization studies conducted for the City and County of San Francisco (1985/86),[2] the City of Berkeley (1988/89), North Santa Clara County (NSCC) (1982/83),[3] and San Diego County (1988/89).[4] This information was reviewed with emphasis placed upon the prior four-season waste characterization study for North Santa Clara County. Based on review and on the fact that yard waste is a large percentage of the waste stream, yard waste is judged to be the only component that may undergo a substantial seasonal variation in generation. The concentration of yard waste is expected to fluctuate within ±20 percent of the estimated annual average over the course of a year. The results of the four-season NSCC study showed that the concentrations of yard waste in the spring and fall were 21 percent and 31 percent, respectively. These amounts are approximately ±20 percent of the average of the four seasons' (26 percent) projected disposed waste quantities.

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[2] *Solid Waste Characterization Study*, study prepared by Cal Recovery Systems, Inc. for the City of San Francisco, 1987.

[3] *North Santa Clara County Comprehensive Waste Characterization Study (1982-1983) Final Summary Report*, prepared by Cal Recovery Systems, Inc. for the NSCC Solid Waste Management Authority, 1984.

[4] *Waste Characterization and Market Study*, prepared for the County of San Diego by Recovery Sciences, Inc., 1989.

II.1.7 Projected Disposed Waste Quantities

Fifteen-year projections of disposed wastes by waste type are shown in Table II-3. The projected quantities are based on population projections which were supplied to CalRecovery, by Gilroy. The population projections were based on projections currently in the City's General Plan. If necessary, population data were interpolated to provide yearly estimates. The population projections are used only to calculate the escalation rate of the disposed waste quantities.

Table II-3

PROJECTED ANNUAL QUANTITIES OF DISPOSED WASTE FOR GILROY (Tons per Year)[1]

Year:	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Population:	29,997	30,498	30,998	31,499	31,999	32,500	33,900	35,300	36,700	38,100	39,500	40,300	41,100	41,900	42,700	43,500
Esc. factor[2]:		1.017	1.016	1.016	1.016	1.016	1.043	1.041	1.040	1.038	1.037	1.020	1.019	1.019	1.019	1.019
TOTAL PAPER	**8946**	**9096**	**9245**	**9394**	**9544**	**9693**	**10110**	**10528**	**10946**	**11363**	**11781**	**12019**	**12258**	**12496**	**12735**	**12974**
OCC/Kraft	2603	2646	2689	2733	2776	2820	2941	3063	3184	3306	3427	3496	3566	3635	3705	3774
mixed paper	2192	2229	2265	2302	2339	2375	2478	2580	2682	2784	2887	2945	3004	3062	3121	3179
Newsprint	990	1006	1023	1039	1056	1072	1118	1165	1211	1257	1303	1330	1356	1372	1409	1435
high grade ledger	411	418	425	431	438	445	464	484	503	522	541	552	563	574	585	596
magazines/glossy ins.	247	251	255	249	263	267	279	290	302	313	325	331	338	345	351	358
other paper	2504	2546	2588	2630	2672	2713	2830	2947	3064	3181	3298	3365	3431	3498	3565	3632
TOTAL PLASTICS	**2832**	**2879**	**2926**	**2974**	**3021**	**3068**	**3200**	**3333**	**3465**	**3597**	**3729**	**3805**	**3880**	**3956**	**4031**	**4107**
HDPE containers	273	277	282	286	291	295	308	321	334	346	359	366	373	381	388	395
PET containers	62	63	64	65	67	68	70	73	76	79	82	84	85	87	89	90
film plastics	1506	1531	1556	1581	1606	1632	1702	1772	1842	1913	1983	2023	2063	2103	2144	2184
polystyrene foam	80	81	82	84	85	86	90	94	97	101	105	107	109	111	113	115
other plastics	912	927	942	957	972	988	1030	1073	1115	1158	1200	1225	1249	1273	1298	1322
TOTAL GLASS	**448**	**456**	**463**	**471**	**478**	**486**	**507**	**528**	**548**	**569**	**590**	**602**	**614**	**626**	**638**	**650**
refillable bev. cont.	5	5	5	5	5	5	6	6	6	6	7	7	7	7	7	7
CA Redemption	197	201	204	207	210	214	223	232	241	251	260	265	270	275	281	286
other recyclable	196	199	203	206	209	213	222	231	240	249	258	264	269	274	279	284
other non-recyclab.	50	51	52	52	53	54	56	59	61	63	66	67	68	70	71	72
TOTAL METALS	**2218**	**2255**	**2292**	**2329**	**2366**	**2404**	**2507**	**2611**	**2714**	**2818**	**2921**	**2980**	**3040**	**3099**	**3158**	**3217**
aluminum cans	95	96	98	100	101	103	107	112	116	120	125	127	130	132	135	137
bimetal cans	20	20	20	21	21	21	22	23	24	25	26	26	27	27	28	28
tin cans	445	452	47-	478	475	482	503	524	544	565	586	598	610	622	633	645
other aluminum	172	175	179	18-	183	176	183	191	198	206	214	218	222	227	231	235
other ferrous	1141	1435	1459	1482	1506	1529	1595	1661	1727	1793	1859	1896	1934	1971	2009	2047
other non-ferrous	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
white goods	85	87	88	90	91	93	97	101	104	108	112	115	117	119	122	124
YARD WASTE	**6299**	**6404**	**6509**	**6615**	**6720**	**6825**	**7119**	**7413**	**7707**	**8001**	**8295**	**8463**	**8631**	**8799**	**8967**	**9135**
OTHER ORGANICS	**9782**	**9946**	**10109**	**10272**	**10435**	**10599**	**11055**	**11512**	**11968**	**12425**	**12881**	**13142**	**13403**	**13664**	**13925**	**14186**
food waste	2895	2943	2991	3040	3088	3136	3271	3407	3542	3677	3812	3889	3966	4043	4121	4198
tires/rubber	61	62	63	64	65	66	69	72	75	77	80	82	84	85	87	88
wood wastes	3693	3755	3816	3878	3940	4001	4174	4346	4518	4691	4863	4962	5060	5159	5257	5356
agric.crop residues	169	172	174	177	180	183	191	199	207	214	222	227	231	236	240	245
manure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
textiles/leather	626	636	647	657	667	678	707	736	766	795	824	841	857	874	891	907
diapers	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
other misc. organs.	2339	2378	2417	2456	2495	2534	2643	2752	2861	2971	3080	3142	3204	3267	3329	3392
OTHER WASTES	**2437**	**2477**	**2518**	**2559**	**2599**	**2640**	**2754**	**2867**	**2981**	**3095**	**3209**	**3274**	**3339**	**3404**	**3469**	**3534**
inert solids	2111	2146	2181	2217	2252	2287	2386	2484	2583	2681	2780	2836	2892	2949	3005	3061
batteries	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
oil	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
other HHW's	326	331	337	342	348	353	368	383	399	414	429	438	446	455	464	472
SPEC. WASTES	**ns**	**ns**	**ns**	**ns**	**ns**	**ns**	**ns**	**ns**	**ns**	**ns**	**ns**	**ns**	**ns**	**ns**	**ns**	**ns**
ash	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
sewage sludge	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
mattresses	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
other special waste[3]	**216**	**219**	**223**	**226**	**230**	**234**	**244**	**254**	**264**	**274**	**284**	**290**	**295**	**301**	**307**	**313**
TOTAL	**33179**	**33722**	**34286**	**34840**	**35393**	**35948**	**37496**	**39045**	**40593**	**42142**	**43690**	**44575**	**45460**	**46345**	**47229**	**48114**
Food Proc. Wastes[4]	**9380**	**9537**	**9693**	**9850**	**10006**	**10163**	**10600**	**11038**	**11476**	**11914**	**12352**	**12602**	**12852**	**13102**	**13352**	**13602**
ADJUSTED TOTAL	**42559**	**43270**	**43979**	**44690**	**45399**	**46110**	**48096**	**50083**	**52069**	**54055**	**56042**	**57177**	**58312**	**59447**	**60582**	**61717**

Notes: ns = not specified: Specific numbers in these categories are included in Diversion Tables. Totals may not sum exactly due to rounding

1. Projected quantities based on current diversion rates for Gilroy;. 2. Escalation factor is based on percent change in the population data reported by Gilroy.

3. Includes small household appliances; 4. Food processing wastes due to seasonal production as provided by CalRecovery Systems, Inc.

II.2. WASTE DIVERSION STUDY

II.2.1 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 Gilroy and diverted from the landfill via source reduction, recycling, and composting.

By State regulations only those materials normally disposed 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 diversion 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 the year 2000.

II.2.2 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 remanufactures these materials into recycled products.

Much of the recycling in the City of Gilroy 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.

II.2.3 Methodology

The solid waste diversion characterization used a multi-prong approach to document the quantity and types of materials that are diverted from disposal within the City for 1990. Waste diversion data were obtained by the following methods: (1) a mail survey of collectors and processors of recyclable materials, utilizing a material flow methodology; (2) a survey of City residential and nonresidential diversion programs; (3) and (4) telephone and facsimile communications to clarify and supplement, whenever possible, incomplete data collected through the mail survey, as well as to obtain data from additional sources.

To obtain more Gilroy-specific data, Resource Management Associates conducted a phone survey targeting primarily Gilroy businesses.[5] Businesses contacted for Gilroy-specific data are listed in Appendix B, called Contact List. This information was combined with solid waste diversion information for the county to obtain a more accurate number for Gilroy.

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 by Emcon Associates 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.

[5] Resource Management Associates, 1991.

Review of City Programs

Records from collection programs in the City of Gilroy were reviewed to obtain data on the quantities of wastes diverted from the residential and commercial waste streams.

Residential diversion programs in the City of Gilroy include the following:

- Curbside collection program.
- Drop-off at the transfer station and existing buy-back centers.
- AB 2020 Redemption centers.

Commercial-industrial diversion programs in the City of Gilroy consist of the following:

- Collection of recyclables from commercial businesses by private recyclers.
- Drop-off of commercial-industrial wastes at the transfer station.
- High-grade office paper collection.

Survey of Transfer Station Recycling Programs

A phone survey of the San Martin Transfer Station and Recycling Center obtained information on quantities of wastes generated within the City that are diverted from landfilling.

The following waste types generated within the City are salvaged and recycled at the transfer station:

- California Redemption Value Containers.
- Aluminum cans.
- Recyclables normally collected in the curbside recycling program.
- Scrap metal, primarily White Goods and small appliances.
- Wet and Dry-cell batteries.
- Mattresses.
- Flea market re-usable items.
- Household hazardous wastes including paints, pesticides and other small quantity materials.

Survey of Landfill Recycling Programs

The City contacted SVRD, the landfill operator of the Pacheco Pass Landfill, by telephone to obtain estimates of waste quantities diverted from landfilling. Recycling at the landfill includes wood, metal and cardboard especially.

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, i.e., residential or commercial/industrial.
- 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 Gilroy.

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*[6]. Based on this study, it is estimated that there are 4,500 single-use diapers per ton in the garbage.

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

Wet-cell battery:	44 lbs
Average mattresses	40 lbs
Laser toner cartridge	4 lbs. (empty)

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

II.2.4 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 County'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, end users, and operators 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 underreported in the results because of the non-cooperation of brokers and collectors in providing information on diversion of these waste materials.

Twelve businesses and organizations were surveyed to obtain Gilroy-specific data. All responded and reported tonnage and materials that were being diverted from trash disposal. However, since specific data was unavailable from the county-wide survey, it is not clear if some diverted materials were being double-counted.

The waste materials identified in the Gilroy-specific survey were added to those found in the county-wide survey except for the materials recovered in the City's curbside recycling program.

II.2.5 Survey Results

Contributing Programs

Within the City of Gilroy, data from the following recycling and source reduction programs contributed to the waste diversion study:

- Four California redemption centers.
- A curbside collection program for recyclables.
- One drop-off center.
- In-house recycling programs by stores and industry.
- City-operated yard waste mulching program.

Summary of Diversion Data

Based on the results of the surveys, an estimated 12.6 percent of the total solid waste stream is diverted in Gilroy. Given the sample size and the lack of cooperation of some brokers and collectors, the City of Gilroy 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.

The results of the diversion characterization are presented in Table II-4 for the residential waste stream, and Table II-5 for the commercial/industrial waste stream. The quantities listed in the tables are estimates in annual tons for 1990.

Caveats Concerning Data

The following should be noted in reviewing the data presented in Tables II-4 and II-5:

- Where necessary, the data were apportioned based upon the population ratio of those areas for which the data were reported.[7]
- 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.
- Multi-family unit recycling is 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 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.

[7] Source of the population data was ABAG (Projections '90) and the city of Gilroy

Table II-4

RESIDENTIAL DIVERSION
for the CITY OF GILROY (in Tons Per Year)

	SOURCE REDUCTION	CURBSIDE RECYCLING	MULTI-FAMILY RECYCLING	DROP-OFF CENTER	BUY-BACK CENTER	20/20 CENTERS	COMPOSTING	TOTAL
PAPER	**0.0**	**636.0**	**0.0**	**0.0**	**216.0**	**0.0**	**0.0**	**852.0**
OCC	0.0	0.0	0.0	0.0	216.0	0.0	0.0	216.0
newspaper	0.0	636.0	0.0	0.0	0.0	0.0	0.0	636.0
high grade ledger	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
other paper	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PLASTICS	**0.0**	**7.6**	**0.0**	**0.0**	**14.0**	**3.5**	**0.0**	**25.1**
HDPE containers	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0
PET containers	0.0	5.6	0.0	0.0	14.0	3.5	0.0	23.1
film plastics	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
GLASS	**0.0**	**232.0**	**0.0**	**0.0**	**975.0**	**20.1**	**0.0**	**1227.1**
refillable bev. containers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CA Redemption	0.0	116.0	0.0	0.0	750.0	20.1	0.0	886.1
other recyclable	0.0	116.0	0.0	0.0	225.0	0.0	0.0	341.0
other non-recyclab.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
METALS	**0.0**	**35.9**	**0.0**	**0.0**	**120.0**	**5.8**	**0.0**	**161.7**
aluminum cans	0.0	7.9	0.0	0.0	120.0	5.8	0.0	133.7
bi-metal cont.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
tin cans	0.0	28.0	0.0	0.0	0.0	0.0	0.0	28.0
other ferrous	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
other non-ferrous	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
white goods	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
YARD WASTE	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
OTHER ORGANICS	**93.9**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**93.9**
food waste	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
wood wastes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
agric.crop residues	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
diapers	93.9	0.0	0.0	0.0	0.0	0.0	0.0	93.9
other misc. organics	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER WASTES	**0.0**	**27.3**	**0.0**	**0.0**	**21.1**	**0.0**	**0.0**	**48.4**
inert solids	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
batteries [1]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
oil	0.0	27.3	0.0	0.0	21.1	0.0	0.0	48.4
other HHW's[1]	0.0	0.0	0.0	0.0	(40.0)	0.0	0.0	(40.0)
SPEC. WASTES	**0.0**	**1.2**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1.2**
ash	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
mattresses	0.0	1.2	0.0	0.0	0.0	0.0	0.0	1.2
other special waste	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	**93.9**	**940.0**	**0.0**	**0.0**	**1346.1**	**29.4**	**0.0**	**2409.4**

Notes:

1. Tonnages for Diverted Materials not included in Total because these materials are not supposed to be landfilled.

Source: Emcon Associates

Table II-5

COMMERCIAL DIVERSION for the CITY OF GILROY (in Tons Per Year)

	SOURCE REDUCTION	CITY COMMERCIAL	PRIVATE COMMERCIAL	PRIVATE INDUSTRIAL	DISPOSAL SITE SALVAGING	COMPOSTING	TOTAL W/O TRANS-FORMATION	TRANS-FORMATION	TOTAL W/ TRANS-FORMATION
PAPER	**0.0**	**0.0**	**884.8**	**0.0**	**0.0**	**0.0**	**884.8**	**0.0**	**884.8**
OCC	0.0	0.0	864.0	0.0	0.0	0.0	864.0	0.0	864.0
newspaper	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
high grade ledger	0.0	0.0	20.8	0.0	0.0	0.0	20.8	0.0	20.8
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**	**4.2**	**0.0**	**0.0**	**0.0**	**4.2**	**0.0**	**4.2**
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	4.2	0.0	0.0	0.0	4.2	0.0	4.2
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**	**35.4**	**0.0**	**0.0**	**0.0**	**35.4**	**0.0**	**35.4**
refillable bev. cont.	0.0	0.0	3.5	0.0	0.0	0.0	3.5	0.0	3.5
CA Redemption	0.0	0.0	30.9	0.0	0.0	0.0	30.9	0.0	30.9
other recyclable	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0
other non-recyclab.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
METALS	**0.0**	**0.0**	**1,796.3**	**0.0**	**563.0**	**0.0**	**2,359.3**	**0.0**	**2,359.3**
aluminum cans	0.0	0.0	5.0	0.0	0.0	0.0	5.0	0.0	5.0
bi-metal cont.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
tin cans	0.0	0.0	12.0	0.0	0.0	0.0	12.0	0.0	12.0
other ferrous	0.0	0.0	1,776.0	0.0	0.0	0.0	1,776.0	0.0	1,776
other aluminum	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	0.7	0.0	0.0	0.0	0.7	0.0	0.7
white goods	0.0	0.0	2.6	0.0	563.0	0.0	565.6	0.0	565.6
YARD WASTE	**169.0**	**0.0**	**96.0** 96.0	**0.0**	**0.0**	**0.0**	**265.0**	**0.0**	**265.0** 265.0
OTHER ORGANICS	**52.8**	**0.0**	**137.7**	**0.0**	**0.0**	**0.0**	**190.5**	**1,572.8**	**1,763.3**
food waste	0.3	0.0	7.8	0.0	0.0	0.0	8.2	0.0	8.2
tires/rubber	0.0	0.0	12.3	0.0	0.0	0.0	12.3	15.8	28.1
wood wastes	52.5	0.0	117.6	0.0	0.0	0.0	170.1	1,557.0	1,727.1
agric.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. organs.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER WASTES	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
inert solids	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
batteries[1]	0.0	0.0	0.0	0.0	(8.7)	0.0	(8.7)	0.0	(8.7)
oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
other HHW's[1]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SPEC. WASTES	**3.6**	**0.0**	**0.0**	**0.0**	**7.7**	**0.0**	**11.3**	**0.0**	**11.3**
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
mattresses	0.0	0.0	0.0	0.0	7.7	0.0	7.7	0.0	7.7
other special waste	3.6	0.0	0.0	0.0	0.0	0.0	3.6	0.0	3.6
TOTAL	**223.5**	**0.0**	**2,954.4**	**0.0**	**570.7**	**0.0**	**3,750.5**	**1,572.8**	**5,323.3**

Notes:

1. Tonnages for Diverted Materials not included in Total because these materials are not supposed to be landfilled.

Source: Emcon Associates

II.2.6 Breakdown of Data by Program

Source Reduction

The diaper service operating in Gilroy reported serving households with approximately 164 children in diapers. The diaper company estimated an average weekly diaper use of 50 per baby, for a total of 8,200 diapers per week. The annual number of diapers used was calculated according to the conversion factor explained above. Also, pallet repair companies reported a certain volume of pallets prepared for reuse.Thus, using assumptions described in Section II.2.3, a total of 93.9 tons of municipal refuse were diverted in the City in 1990 through the use of reusable cotton diapers. Total waste diverted through source reduction is shown in Table II-4.

A total of 169 tons of yard waste is also considered source reduction as shown in Table II-5. The reason for considering some types of composting as source reduction is explained in Chapter 5, Composting. More detailed numbers quantifying source reduction activities in the City of Gilroy are shown in the Source Reduction Component, Chapter III.

Residential Recycling

Based on the survey of recyclers and on the City's recycling programs, an estimated 2315.5 tons of wastes are diverted in Gilroy through residential recycling programs. These programs include residential curbside recycling which diverts 940 tons; buy-back center recycling which diverts 1386.1 tons; and AB 2020 (California redemption) programs which divert 29.4 tons, for a total of 2355.5 tons. The estimated amounts by material type are listed separately in Table II-5 for the residential curbside and transfer station drop-off programs. Batteries and other household hazardous wastes tonnages are shown in the disposed Table II-2, but they are not counted as Total diverted in Table II-4 or II-5 because it is illegal to dispose of them in the landfill. Mattresses are recycled through the drop-off facility at the Transfer Station.

Transformation

Wood waste, including unrepairable pallets collected at the landfill are chipped for use as fuel. Additionally, tires are sold to a waste-to-energy facility. These two materials account for 1572.8 tons of diverted transformation waste.

Commercial/Industrial Recycling

The estimated quantity of solid wastes diverted by commercial/industrial recycling in 1990 was 5099.8 tons. The private collectors accounted for 2,954.4 tons (as was reported by them), and another 570.7 tons were recycled at the disposal site.

Composting

The City reported collecting 169 tons of tree-trimmings and yard wastes which are then chipped and mulched and later spread on parks and road sides. The City's commercial recycling program diverts 169 tons of yard waste and tree trimmings which are then converted into mulch. However, this tonnage figure as reported in Table II-5, is shown in the source-reduction category since no permitted facility being used to process and store the chipped material. This program is considered to be in the same category as backyard composting.

II.2.7 Calculation of Diversion Rate

Diversion by waste type and waste source for Gilroy are presented as percent diversion. These rates were calculated by:

- Tabulating the tons/year disposed by waste type and waste generator (residential, commercial, etc.)
- 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].

II.2.8 Materials Targeted for Diversion

The following eight 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 office paper

Yard waste:
leaves & grass clippings
brush & tree trimmings

Materials Targeted for Diversion Continued:

Plastics:
- polystyrene (EPS)
- PET containers
- HDPE containers

Glass:
- CA Redemption Value
- other recyclable glass
- refillable beverage containers

Metals:
- aluminum cans
- other ferrous
- non-ferrous, incl. aluminum scrap
- bi-metal containers
- white goods
- steel ("tin") food & beverage cans

Other organics:
- processed food wastes
- tires/rubber
- wood wastes
- textiles/leather
- diapers

Other wastes:
- inert solids (e.g. asphalt, concrete, and demolition debris

Special wastes:
- Other special wastes, (e.g. small appliances, etc.)

Table II-6

QUANTITIES AND PERCENTAGES OF WASTES CURRENTLY DIVERTED FROM THE CITY'S WASTE SYSTEM

Waste Source	Generated (TPY, 1990)	Diverted (TPY, 1990)	Percent Diversion
Residential	11,225	2,409	21.5 %
Self Haul	4,537	-0-	0.0
Commercial/ Industrial[1]	32,956	3,750	10.9 %
Total	48,718	6,159	12.6%

Notes:
1. Includes wood waste being diverted from landfill and used as fuel, shown in Table II-5.

Table II-7

WASTE GENERATION BY WASTE TYPE FOR THE CITY OF GILROY

WASTE TYPE	DISPOSED		DIVERTED				TOTAL GENERATED (TPY)
	TPY	%	Source Reduction	Trans-formation	Recy. & Comp: Resid.	Recycling: Commercial.	
PAPER	**8,946**	**21**	**0.0**	**0.0**	**852.0**	**884.8**	**10,682.8**
OCC	2,603	6.1	0.0	0.0	216.0	864.0	3683.0
newspaper	990	2.3	0.0	0.0	636.0	0.0	1626.0
high grade ledger	411	0.9	0.0	0.0	0.0	20.8	431.8
magazine/glossy	247	0.6	ns	ns	ns	ns	247.0
mixed paper	2,192	5.1	0.0	0.0	0.0	0.0	2192.0
other paper	2,504	5.8	0.0	0.0	0.0	0.0	2504.0
PLASTICS	**2,832**	**6.6**	**0.0**	**0.0**	**25.1**	**4.2**	**2861.3**
HDPE containers	273	0.6	0.0	0.0	2.0	0.0	275.0
PET containers	62	0.1	0.0	0.0	23.1	4.2	89.3
polystyrene foam	80	0.1	ns	ns	ns	ns	80.0
film plastics	1,506	3.5	0.0	0.0	0.0	0.0	1506.0
other plastics	912	2.1	0.0	0.0	0.0	0.0	912.0
GLASS	**448**	**1.0**	**0.0**	**0.0**	**1227.1**	**35.4**	**1710.5**
refillable bev. cont.	5	0.0	0.0	0.0	0.0	3.5	8.5
CA Redemption	197	0.4	0.0	0.0	886.1	30.9	1114.5
other recyclable	196	0.4	0.0	0.0	341.0	1.0	538.0
other non-recyclab.	50	0.1	0.0	0.0	0.0	0.0	50.0
METALS	**2,218**	**5.2**	**0.0**	**0.0**	**161.7**	**2359.3**	**4739.0**
aluminum cans	95	0.2	0.0	0.0	133.7	5.0	233.7
bi-metal cont.	20	0.0	0.0	0.0	0.0	0.0	20.0
tin cans	445	1.0	0.0	0.0	28.0	12.0	485.0
other ferrous	1,411	3.3	0.0	0.0	0.0	1776	3187.0
other aluminum	162	0.3	0.0	0.0	0.0	0.0	162.0
other non-ferrous	0	0.0	0.0	0.0	0.0	0.7	0.7
white goods	85	0.1	0.0	0.0	0.0	565.6	650.6
YARD WASTE	**6,299**	**14.0**	**0.0**	**0.0**	**0.0**	**265.0** 265.0	**6564.0**
OTHER ORGAN.	**19,162**	**45.0**	**146.7**	**1572.8**	**0.0**	**137.7**	**21,019.2**
food waste	12,275	28.0	0.3	0.0	0.0	7.8	12,282.8
tires/rubber	61	0.1	0.0	15.8	0.0	12.3	89.1
wood wastes	3,693	8.0	52.5	1557.0	0.0	117.6	5367.6
agric.crop residues	169	0.3	0.0	0.0	0.0	0.0	169.0
manure	0	0.0	0.0	0.0	0.0	0.0	0.0
textiles/leather	626	1.4	0.0	0.0	0.0	0.0	626.0
diapers	ns	ns	93.9	0.0	0.0	0.0	93.9
other misc. organ.	2,339	5.4	0.0	0.0	0.0	0.0	2339.0
OTHER WASTES	**2,437**	**5.7**	**0.0**	**0.0**	**48.4**	**0.0**	**2534.1**
inert solids	2,111	4.9	0.0	0.0	0.0	0.0	2111.0
batteries[1]	ns	0.0	0.0	0.0	0	(8.7)	0.0
oil [1]	ns	0.0	0.0	0.0	48.4	0.0	48.4
other HHW's[1]	326	0.7	0.0	0.0	(40.0)	0.0	326.0
SPEC. WASTES	**216**	**0.5**	**3.6**	**0.0**	**1.2**	**7.7**	**228.5**
ash	ns	ns	0.0	0.0	0.0	0.0	0.0
sewage sludge	ns	ns	0.0	0.0	0.0	0.0	0.0
mattresses	ns	ns	0.0	0.0	1.2	7.7	8.9
other special wastes	216	0.5	3.6	0.0	0.0	0.0	219.6
TOTAL	**42,559**		**150.3**	**1572.8**	**2,315.5**	**3694.1**	**50,291.0**

Notes:

ns = not surveyed or included in "other" totals.

1. Materials not counted in diversion totals because they are not supposed to be landfilled.

II.2.9 Materials Targeted for Disposal

The following list identifies the materials that are currently being disposed of in Gilroy 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:
agricultural crop residues
other miscellaneous organics

II.3. SOLID WASTE GENERATION STUDY

II.3.1. INTRODUCTION

This third section of Chapter II summarizes total waste generation by waste type for the City of Gilroy through the year 2005. AB 939 Regulations define waste generation as the sum of waste disposed (discussed in Part One of this Chapter) plus waste diverted (covered in Part Two of this Chapter). As shown in Table II-7, the estimated total waste generated in the City of Gilroy is presented in tons per year and in percent by weight.

II.3.2. Projections with Current Diversion

Table II-3 shows the projected waste quantities for the City of Gilroy for 1991 through 2005, as presented by waste type and waste categories. This Table shows projected waste quantities with current diversion. Likewise, Table II-8 shows projected waste generated, diverted and disposed with Gilroy's current diversion rate remaining at 12.6 percent.

II.3.3. Projections with Increased Diversion

By applying increased diversion projections estimated from planned programs and described in detail in Chapter X, *Integration,* the disposed waste quantities would reach by the year 2005, approximately 30,000, as shown in Table II-9. This disposed quantity based on an increased diversion rate of up to 56 percent, represents a reduction of over 50 percent compared to the disposed quantity of approximately 61,000 shown in Table II-8 which assumes a steady diversion of 12.6 percent.

Table II-8

PROJECTED WASTE GENERATION WITH CURRENT CONDITIONS

Year	Population	Extrap. Factor	Tons/Year Generated	Tons/Year Diverted	Tons/Year Disposed	Percent Diversion
1990	29,997		48,718	6,159	42,559	12.6
1991	30,498	1.017	49,395	6,125	43,270	12.6
1992	30,998	1.016	50,204	6,225	43,979	12.6
1993	31,499	1.016	51,016	6,325	44,690	12.6
1994	31,999	1.016	51,825	6,426	45,399	12.6
1995	32,500	1.016	52,637	6,527	46,110	12.6
1996	33,900	1.043	54,904	5,998	48,096	12.6
1997	35,300	1.041	57,172	7,089	50,083	12.6
1998	36,700	1.040	59,439	7,370	52,069	12.6
1999	38,100	1.038	61,707	7,651	54,055	12.6
2000	39,500	1.037	63,975	7,933	56,042	12.6
2001	40,300	1.020	65,271	8,094	57,177	12.6
2002	41,100	1.019	66,566	8,254	58,312	12.6
2003	41,900	1.019	67,862	8,415	59,447	12.6
2004	42,700	1.019	69,158	8,576	60,582	12.6
2005	43,500	1.019	70,453	8,736	61,717	12.6

Notes:
Based on continuity of existing diversion rate.
Population and Extrapolation Factors based on data in Table II-3.

Table II-9
PROJECTED WASTE GENERATION WITH INCREASED DIVERSION[1]

Year	Population[2]	Esc. Factor[3]	Tons Per Year[4] Generated	Diverted	Disposed	Percent Diversion
1990	29,997	1.000	48,718	6,159	42,559	12.6
1991	30,498	1.017	50,882	6,125	42,862	12.6
1992	30,998	1.016	51,446	8,760	40,746	16.9
1993	31,499	1.016	52,000	14,550	35,490	27.9
1994	31,999	1.016	52,553	19,850	30,703	39.1
1995	32,500	1.016	53,108	24,290	26,804	45.7
1996	33,900	1.043	54,656	30,430	22,149	55.7
1997	35,300	1.041	56,205	31,300	22,760	55.7
1998	36,700	1.040	57,753	32,165	23,396	55.7
1999	38,100	1.038	59,302	33,020	24,027	55.7
2000	39,500	1.037	63,975	35,826	28,149	56.0
2001	40,300	1.020	65,271	36,552	28,719	56.0
2002	41,100	1.019	66,566	37,277	29,289	56.0
2003	41,900	1.019	67,862	38,003	29,959	56.0
2004	42,700	1.019	69,158	38,728	30,430	56.0
2005	43,500	1.019	70,453	39,454	30,999	56.0

Notes:
1. Increased Diversion as projected assuming all programs outlined in SRRE Components are implemented.
2. Population from Table II-3.
3. Escalation Factor is based on percent change in the population data reported by Gilroy.
4. Quantities are calculated based on formula: Generation = Diverted + Disposed. Transformation quantities not included.

Chapter III

SOURCE REDUCTION

III.1 INTRODUCTION

Source reduction 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. Many source reduction steps must be taken at the federal level, however, there are also many technical options for communities considering source reduction which include product reuse, reducing material volume generation through wise purchase and use, reducing product toxicity, increasing product lifetime and decreasing consumption.

Source reduction as a component of waste reduction is not currently a widely understood 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 by selective buying patterns and reuse of products and materials in business and at home. Source reduction programs and approaches can be implemented through education, financial incentives and disincentives, use of guidelines and regulations, as well as thorough research and technological developments that could be applied to local product use and waste management.

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 preventive measure. Actions are focused 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 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 pollution.

Source reduction encompasses several broad categories, including:

- reduced waste generation through decreased consumption

- reduced material weight and volume
- material and product reuse
- increased product durability.

These source reduction activities are described further in this chapter under the evaluation section.

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 Gilroy 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 can be as high as 27.0 percent for paper, 8.5 percent for plastics, and 19.0 percent for yard waste, depending on the source of waste. The potential for source reduction of solid wastes in the City of Gilroy is therefore high, if all of the planned measures are fully implemented.

This component (1) describes existing conditions and presents source reduction objectives for the City of Gilroy (2) evaluates a broad range of alternatives that may be used to achieve those objectives, (3) describes a process for selecting among the alternatives, and (4) identifies a plan of action to implement and monitor source reduction.

III.2 OBJECTIVES

The source reduction objectives presented in this section have been developed to meet the goal of reducing the amount of solid waste generated in the City of Gilroy. 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 Gilroy can expect to divert an estimated 0.8 percent of the total waste stream by implementing programs to meet the following objectives:

1. Reduce the use of non-recyclable materials.
2. Replace disposable materials and products with reusable materials and products.
3. Reduce packaging.
4. Encourage substitution of less toxic products.
5. Purchase repaired or repairable products.
6. Purchase durable products.
7. Increase the efficiency of materials used in the commercial and industrial sectors.
8. 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 targeted waste types and products 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.
- Green yard waste, including tree and brush trimmings, leaves and grass clippings.
- 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 materials are evaluated below in the section entitled *Evaluation of Alternatives* according to their effectiveness in meeting the source reduction goals and objectives outlined above.

III.3 EXISTING CONDITIONS

This section describes existing source reduction activities and programs in the City of Gilroy. Gilroy has carefully reviewed and documented all potential and ongoing source reduction efforts, including all City programs. The City has also used a survey to identify efforts sponsored by entities such as private businesses and industry. The list of Commercial Business and Industry in the City of Gilroy is shown in Appendix A. The quantities of wastes diverted by source reduction activities, by waste category and waste type, are presented in Table III-1. The method for conducting the survey for source reduction activities is the same as that used for recycling activities and is described in Chapter IV. The existing source reduction diversion rate is estimated to be 0.6 percent of the current total waste stream.

III.3.1 Local Government Activities

The City of Gilroy is currently mulching its yard waste obtained from City-owned properties, streets and parks.

III.3.2 Residential Activities

Residential source reduction activities in the City of Gilroy include:

- 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 amounts of environmental toxins.
- Use of cloth diapers.

While many of these activities have been identified, the quantification of the extent of their use was not estimated for each of the activities. Those from which estimates were made are shown in Table III-1.

III.3.3 Commercial and Industrial Activities

Commercial and industrial activities in the City of Gilroy 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.
- Collecting discarded produce at supermarkets for use as animal feed.
- Use of scratch pads from blank sides of scrap paper.
- Cloth towels and sponges in the cafeteria.
- Routing memos.
- Reuse of file folders.
- 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.
- Storage of information binders for general staff use instead of providing copies for personal files.
- Use of shredded paper for packaging material.
- Reuse of cardboard boxes.
- Electronic mail.
- Reuse of pallets.

While many of these activities have been identified, the quantification of the extent and frequency of their use was not estimated for each of the activities. Those for which estimates were made are shown in Table III-1.

Of the source reduction activities and programs identified above, the City of Gilroy anticipates that no programs will be phased-out or discontinued in the future. (The "Flea Market", noted above has been temporarily discontinued.) This will affect the existing solid waste management system by increasing public participation in all waste management options, including recycling, and will affect the attainment of mandated diversion goals by increasing the diversion rate for identified waste reduction activities in Gilroy to about 0.8 percent.

Table III-1

QUANTITIES DIVERTED BY EXISTING PROGRAMS

Existing Programs	Waste Category and Type	Quantity Diverted (TPY)	% of Waste Stream
"Flea Market" at Transfer Station[1]	Special Wastes: miscellaneous	3.6	<0.01
Pallet Repair	Other Organics: wood waste	52.5	0.07
Use of discarded produce as animal feed	Other Organics: food waste	0.3	<0.01
Mulch, City Property	Yard Waste	169.0	0.36
Cloth Diapers	Other Organics	93.9	0.19
	TOTAL	317.3	0.62

Notes: 1. Not currently in operation as of December 1991.

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 Gilroy are actually being conducted on a national scale. National efforts affecting the products purchased in stores and used by residents and businesses within the City are described below.

III.3.4 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).

[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.

- 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. Glass containers have also been reduced in thickness and 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 designed to be reused as garbage bags.
- A large video rental and sales chain trains its sales people to reuse the distinctive plastic carrying bags for tapes 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.

III.4 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 for implementing it; 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 and depend significantly on the implementation of other alternatives, programs or components presented in other components of the *Source Reduction and Recycling Element (SRRE).* .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, waste exchange services, 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.

The alternatives for each of the source reduction categories is described below and then evaluated according to a set of criteria specified by the regulations governing AB 939.

III.4.1 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 both 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 could serve to divert certain types of reusable materials from the waste stream. It would also create an incentive for consumers 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 such systems require more collection time. Another requirement of these systems is that the collection

vehicle have a scale and some type of record-keeping system to track the weight of the wastes by customer.

Some jurisdictions implementing quantity-based user fees or variable rate structures have 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 over-estimated 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 Gilroy 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.

- **Absence of Hazard.** There are no direct environmental hazards 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 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.** In the City of Gilroy, disposal and collection fees are moderately inflexible because such fees are tied to contracts and landfill operations. Additionally, once volume based rates are established, any subsequent changes to the rates would require City Council approval. However, the City has the ability to alter the rate structure if it so chooses.
- **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. These barriers become more complex when single or multiple private haulers and/or disposal facilities are included in the implementation and rate-setting process. The City of Gilroy has only one hauler, South Valley Refuse Disposal, Inc. and there are two disposal facilities not within the City limits: San Martin Transfer Station and Recycling Center and the Pacheco Pass Sanitary Landfill.
- **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 waste collection and disposal including consideration of the impact of recycling and waste reduction.
  - A Review and approval by the City of Gilroy (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 Gilroy will consist of staff coordination and some changes in procedures and are estimated to range from $10,000 to $30,000 per year.

- **End Uses.** Not applicable.

III.4.2 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 Gilroy 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 Gilroy 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 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 Gilroy 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 City of Gilroy can 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 City of Gilroy can 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 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 Gilroy on businesses that do not develop and implement source reduction programs and practices. Alternatively, a municipality 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 the jurisdiction 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 business 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 California Integrated Waste Management Board and is under consideration[2]. 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 life spans, with the fee applied to products with shorter life spans 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

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[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.

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 Gilroy, 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.
- **Absence of 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 Gilroy, 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 City Council. The amount of time required for the approval process and implementation of the program can range from two to three 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 Gilroy.
- **Consistency with Local Plans and Policies.** Providing economic assistance to businesses within the City of Gilroy or charging an advanced disposal fee may have no historical precedent. In this respect, this alternative may be viewed as inconsistent with local policies currently in place.
- **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 Gilroy 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 Gilroy 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. 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, whether they would cover their costs is unknown. Costs for the City of Gilroy are to be determined.

- **End Uses.** Not applicable.

III.4.3 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 Gilroy. 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 Gilroy could exempt businesses in the service sector, such as professional services, 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:

- assessing proper waste disposal fees
- controlling the disposal of banned wastes (if any) into the waste stream (e.g., corrugated cardboard, organic wastes, and household hazardous or special wastes)
- 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.

Another aspect of technical assistance would be that of collecting and distributing information about waste materials available in local businesses or institutions such as schools for reuse. An example of waste might be used pallets that could be ether reused as pallets or for wood craft projects.

Educational Efforts

Educational efforts by the City of Gilroy would be an invaluable means of developing consumer awareness about the benefits of source reduction and changing buying habits. Implementing public education programs increases awareness of the solid waste problem, the economic and environmental benefits of source reduction, 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 Gilroy 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 workshops 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 Gilroy to 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 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 actions. This could enhance participation in other activities such as waste audits and commercial reporting requirements on 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 Gilroy 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 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 mail.

This alternative provides an opportunity for the City of Gilroy 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 Gilroy, 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.

- **Absence of Hazard.** There are no hazards associated with the programs presented by this alternative. The City of Gilroy 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's 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 the City of Gilroy 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 Gilroy 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 appear to be consistent with current policies in the City of Gilroy.
- **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 Gilroy 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, door hangers, 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 Gilroy 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 Gilroy. 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 Gilroy are to be determined.

- **End Uses.** Not applicable.

III.4.4 Regulatory Programs

Several regulatory program alternatives are available to the City of Gilroy 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 Gilroy specifying that several criteria be considered in the selection of products and packaging, including: durability, recyclability, reusability, and recycled material content. Additionally, the City 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 Gilroy 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 reduced through these methods. 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 Gilroy 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 Gilroy, 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 Gilroy (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 Gilroy 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.

- **Absence of 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 Gilroy.

- **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 any 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 Gilroy.

- **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 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 Gilroy 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 initially higher in cost to purchase. This would inflate the costs of procuring these items. Total costs for the City of Gilroy are to be determined.
- **End Uses.** Not applicable

SOURCE REDUCTION COMPONENT TABLE III-2

Programs	EVALUATIVE CRITERIA						EVALUATIVE DISCUSSIONS		
	Effectiveness	Hazard	Ability to Accomodate Change	Consequences on Waste Stream	Time Frame for Implement.	Facility Need	Consistency w/Local Policy	Institutional Barriers	Imple-mentation Costs
Variable rate structure	High	Illegal Dumping	Yes	Reduce recyclable materials	Medium term	N/A	Local ord's may require amendment	None	Minimum
Disposal fees for bulky waste	High	Illegal Dumping	Yes	Yard waste packaging	Short term	N/A	Potential opposition	None	Minimum
Quantity-based user fees	High	None	Yes	None	Short term	N/A	Potential opposition	None	Minimum
Grants to community groups	High	None	Yes	Reduces targeted waste	Short- to medium-term	N/A	No precedent	May require rate increase	Coordination costs
Economic incentives for businesses	High	None	Yes	Reduce waste from targeted generators	Short-term	N/A	No precedent	May require rate increase	Coordination costs
Economic disincentives (fines) for businesses	High	None	Yes	Reduces targeted waste	Short-term	N/A	No precendent	None identified	Revenue/coor-dination costs
Monitor state & nat'l source reduction efforts	Low	None	Yes	None	Short-term	N/A	Yes	None	Staff costs
Technical Assistance to business & residences (composting)	High	None	Yes	Reduce targeted waste	Short-term	N/A	Yes	Enforcmt of improperly mang'd sites	$15,000 - $20,000. per year
Public education programs	Medium	None	Yes	Reduce targeted waste	Short-term	N/A	Yes	Acceptance by schools	Coordination costs
Awards & recognition programs	Medium	None	Yes	Reduce waste from generator	Short-term	N/A	Yes	None identified	Coordination costs
Non-procurement programs in City offices	Low	None	Yes	Recyclable mat'ls reduced	Short-term	N /A	Yes	None identified	Coordination costs
Procurement programs	High	None	Yes	Reduced paper and non-durables	Short- or Medium-term	N/A	Policy must be developed	Agencies may need to change	$10,000. to $30,000 per year
Establishing waste red'ctn plans for businesses	Medium	None	Yes	Reduce targeted waste	Short-term	N/A	Yes	Businesses may resist	Coordination costs
Product bans	High	None	Yes	Reduce ban selected items	Medium-term	N/A	City ordn'ce required	Agencies coordinat'n	Coordination costs
Land use requirements for local businesses	High	None	Yes	Reduce targeted waste	Short-term	N/A	Yes	None identified	Coordination costs
Multi-jurisdictional approaches	High	None	Yes	N/A	Short-term	N/A	To be strengthn'd	Procurement practices	Cordination costs

III.5 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 qualitatively according to a range of criteria mandated by the regulations governing AB 939. In this section, the City of Gilroy presents the results of the qualitative evaluation of the alternatives and programs presented in the previous section. To accomplish this, the City has applied an assessment of whether or not each alternative is appropriate to its needs and assigned each alternative a ranking in order to select various alternatives and programs.

In selecting among alternatives and programs, the City of Gilroy 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. Alternatives and programs were assigned ratings of high, medium, and low according to the assessment of their evaluation criteria. The results of these ratings are presented in Table III-2.

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.

III.5.1 Short-Term Planning Period

In order to meet the goals and objectives outlined in this component, the City of Gilroy will have to divert approximately 0.8 percent of the total waste stream in the short-term planning period. The City has selected the following programs and alternatives, evaluated in Table III-2.

- Implement a variable rate structure for both commercial and residential collection.
- Increase disposal fees for large, bulky items such as white goods and furniture that are not recycled
- Consider a program of small grants to community public service groups that support community programs by providing technical assistance or public education.
- Develop a program to offer waste evaluations of some of the commercial businesses in the City.

- Develop a program to provide technical assistance to businesses and consumers/homeowners through workshops and seminars on source reduction techniques and activities.
- Develop a program to provide public education efforts through the media, the school system, and City programs to increase awareness of source reduction and waste management issues.
- Design and implement a program to provide public recognition and awards to individuals and businesses that implement source reduction activities.
- Initiate municipal source reduction programs aimed at source reduction throughout City offices and operations.
- Develop a City procurement program and policy to encourage source reduction through purchasing decisions.
- Consider any multi-jurisdictional approaches to source reduction .
- Initiate support for State level actions.

III.5.2 Medium-Term Planning Period

In order to meet the goals and objectives outlined in this component, the City of Gilroy will have to divert approximately 0.8 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 Gilroy has selected the following programs and alternatives:

- Consider a program to provide direct economic benefits to businesses and private organizations to implement source reduction programs.
- Consider 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.
- Consider a program to establish waste reduction plans for large, commercial or institutional waste generators.
- Consider a program to establish land-use requirements that promote source reduction planning.
- Consider a program to institute product bans for certain materials and products sold within the City.

- Monitor national source reduction efforts and trends in manufacturing and packaging to identify any potential areas for source reduction credit.
- Monitor efforts at the state level to encourage source reduction, including advance disposal fees, public education efforts, and other programs.

No facilities are necessary to implement the selected alternatives. Space required for education and training programs to be implemented in this component may exist in school buildings or City offices. Some expense may be accrued for acquiring appropriate computer software or other record-keeping mechanisms.

III. 6 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. This information is presented in Table III-3. Additionally, the costs, revenues, and revenue sources necessary for implementation of the selected programs are presented in Table III-4.

Staffing needs for implementing these source reduction programs are estimated to require an additional three-quarter-time staff position for the City. The cost for this position is included in the program costs shown in Table III-4.

III.7 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.

The City will monitor the programs with authority provided of Sections 41252 thru 41480 of the Public Resources Code.as described in the regulations filed by the California Integrated Waste Management Board as Title 14, Chapter 9, Article 6.2, Section 18733.6.

Table III-4

SOURCE REDUCTION IMPLEMENTATION COSTS FOR SELECTED PROGRAMS

Selected Programs[1]	Net Cost[2]	Revenue Sources[3]
Short Term		
• Rate structure modifications	Low	Rate surcharge
• Develop educational literature	Low	Disposal fee
• Develop waste audit program	Low	Disposal fee
• Develop grants program	Moderate	Disposal fee
• Design awards program	Low	Disposal fee
• Develop procurement guidelines	Low	Disposal fee
• Develop procurement program	Low	Disposal fee
Medium Term		
• Consider business programs		
• Consider program fines	Low	Rate surcharge
• Develop commercial programs	Low	Disposal fee
• Consider land use requirements	Moderate	Disposal fee
• Consider product bans	Low	Disposal fee
• Monitor national trends	Low	Disposal fee
• Monitor state programs	Low	Disposal fee
	Low	Disposal fee

Notes:

1. Costs for existing programs are not included.
2. Net costs are estimated in terms of monthly dollars per 32-gallon "waste units" of MSW in Gilroy (%0,340 TPY = %03,4000cu. yds. or 3,146,250 waste units per year.
   Low = a cost range of $0.0 to $0.2
   Moderate = a cost range of $0.21 to $0.50
   High = a cost range of $0.51 to $1.00
3. There are no known actual costs.

III.7.1 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 8; and Objectives 6 and 7.

Group I.

Objective 1: Reduce the use of non-recyclable materials and products

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.

Group 2.

Objective 3: Reduce Packaging

Objective 4: Encourage substitution of less toxic products

Objective 5: Purchase repaired or repairable products

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.

Group 3.

Objective 6: Purchase durable products

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

Objective 8. Reduce generation of yard waste and promote backyard or on-site composting

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.

III.7.2 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 City Administration Office of the City of Gilroy.

Funding Requirements. Funding for the monitoring and evaluation program described in this section will be provided by the City through the General Fund of the City of Gilroy. Funding for this program includes the costs of (1) administrative activities, (2) record-keeping, (3) program monitoring and surveying, (4) tracking of survey results, and (5) annual report-writing. These costs are shown in Table III-4.

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

Chapter IV

RECYCLING COMPONENT

IV.1 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 beyond merely collecting and separating post-consumer waste; recycling includes using them in the manufacture of new products which are returned to the marketplace. 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 Gilroy recognizes the value of recycling and seeks to support appropriate programs and services dedicated to the recycling of a broad range of materials. This component :

- presents recycling objectives, and describes existing conditions
- evaluates a broad range of alternatives that may be used to achieve those objectives,
- describes a process for selecting among the alternatives, and identifies a plan of action to implement and monitor the selected recycling programs.

Throughout this component, waste streams are described as "residential" and "non-residential," with the latter signifying both commercial and industrial waste streams.

IV.2 OBJECTIVES

The 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 Gilroy. These objectives are to be implemented in the short-term planning period (1991-1995) and continued during the medium-term planning period (1996-2000).

IV.2.1 Short-Term Objectives

The City of Gilroy can expect to divert 21.0 percent of the total waste stream in the short-term by implementing the following objectives:

- Expand materials collected in the residential curbside program.
- Expand service to all multi-family dwellings in the city
- Develop participation in commercial recycling programs through a bars and restaurant glass recycling program and an office paper collection program.
- Establish a diversion program for corrugated boxes currently collected via commercial debris boxes.
- Evaluate feasibility of installing advanced processing equipment at Transfer Station for sorting and densifying recyclables.
- Divert inert solids generated by City agencies (eg. Department of Public Works, municipal utilities, and capital improvement projects).
- Develop local markets for materials made from post-consumer waste.
- Modify refuse collection practices to optimize the economics of recycling operations.

IV.2.2 Medium-Term Objectives

The City of Gilroy can expect to divert 23.0 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;

- Expand the materials processing system at transfer station to sort and process source-separated recyclables.
- Increase local demand for materials and products made from post-consumer waste;
- Expand plastics recycling operations to include a wider variety of polymer types;
- Expand programs implemented in the short-term planning period.
- Determine feasibility of constructing a materials recovery facility for removing recyclables from mixed solid waste delivered to the transfer station.

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 listed below:

- Corrugated cardboard
- Old newspaper
- High-grade office papers
- Mixed waste paper
- Wood wastes
- PET, HDPE, and other plastics
- FIlm plastics
- Glass containers and other glass types
- Tin cans
- Scrap metals

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 noted above. Recycling or diversion of other material waste types is described in Chapters V and VI.

IV.3 EXISTING CONDITIONS DESCRIPTION

This section describes existing recycling activities and programs in the City of Gilroy. The City has carefully reviewed and documented all potential and on-going 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 businesses and organizations such as South Valley Refuse Disposal, Inc. local retailers, manufacturers, canneries, and local church and civic groups.

The quantities or wastes diverted by the City's recycling activities, by waste category and waste type, are presented in Tables II-4 and II-5. A description of the survey method used to identify and quantify the recycling activities is presented in Appendix A. The existing recycling diversion rate is estimated to be 12.6 percent of the current total waste stream.

IV.3.1 Local Government Activities

The City of Gilroy currently engages in the following recycling activities:

- Purchasing programs for products with recycled material content;
- Economic development programs for businesses that collect recyclables or use them in manufacturing processes;
- Consumer incentive programs;
- Programs to provide education and information to employees and the general public on recycling;

IV.3.2 Residential Activities

Residential recycling activities in the City of Gilroy include:

- Curbside collection of recyclables, including aluminum cans, tin cans, PET plastic bottles, styrofoam plastic containers and packing materials, glass containers, newspaper, and used motor oil, (but not cardboard boxes);
- Drop-off recycling centers accepting all of the above materials as well as lawn mowers, bicycles, motors, high-grade office paper, automotive batteries, mattresses and boxsprings, and upholstered furniture;
- Limited apartment and condominium collection ;
- A flea market at drop-off area for donation and reuse of many materials such as small appliances and other household items (temporarily discontinued).

IV.3.3 Commercial and Industrial Activities

Commercial and industrial activities in the City of Gilroy include:

- Buy-back centers accepting materials such as, aluminum cans, tin cans, glass, newspaper, used motor oil, plastic (PET), and high-density polyethylene (HDPE) rigid containers, styrofoam containers and packaging.

- Limited amount of high-grade office paper collection.

- Recycling programs operated by local businesses to collect corrugated cardboard, and newspaper, glass, aluminum, white office paper, plastic (PET) bottles, and scrap metals and appliances.

- Landfill and Transfer Station recycling activities.

Of the recycling activities and programs identified above, the City of Gilroy anticipates that no programs will be phased-out or discontinued in the future as the result of establishing new programs.

IV.4 EVALUATION OF ALTERNATIVES

The City of Gilroy 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. Cost ranges for recycling programs are shown in the Chapter IX, *Funding*.

Many of these alternatives are complementary to each other and depend significantly on the implementation of other alternative programs, such as those described in the Source Reduction, Composting, and Education and Public Information 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 that are independent of one another.

Separation of recyclable materials from the waste stream is the key to diverting materials from transformation (incineration) or land disposal. The effectiveness of any recycling diversion program in meeting the goals of AB 939 is therefore 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 approaches presented below. Each of the recycling alternatives is described below and then evaluated according to a set of criteria specified by the regulations governing AB 939.

IV.4.1 Residential Alternatives

Expand Curbside Collection

This alternative addresses the objective of expanding the collection of recyclables from residents. 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. Since the curbside program is fully established, additional materials, such as corrugated cardboard, magazines and mixed paper, as well as other plastic materials, can be added to increase recovery levels.

Another option is to begin wet/dry collections at the curb, similar to systems in Europe and Canada. Because few, if any, such programs currently exist for the residential sector in the United States, 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 Materials Recovery Facility (MRF) for processing, essentially commingled recyclables. 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.

An array of other plastic materials could be added to Gilroy's curbside program, or to the transfer station drop-off center list of accepted materials. The major determine factor for their inclusion would be the existence of suitable markets. Some plastic materials that have been included in other curbside recycling programs are listed in Table IV-1 below.

Figure IV-1
PLASTIC RESIN MATERIALS AND PRODUCTS

PLASTIC RESIN	SYMBOL	TYPICAL PRODUCTS
Polyethylene, High-density	HDPE	Milk and water jugs
Polyethylene, Low-density	LDPE	Thin bags and sacks
Polyethylene Terephthalate	PET	Soft drink bottles
Polypropylene	PP	Food bottles and lids
Polystyrene	PS	Clear trays; clamshells
Polyvinyl Chloride	PVC	Water/food bottles
Expanded Polystyrene	EPS	Foam cups; peanuts

Source: *Reducing Plastics in the Wastestream.* Resource Management Associates, 1990

However, this alternative will only add corrugated cardboard (OCC) to the existing program due to the uncertainty of available markets for other plastics, and is evaluated below to determine whether it is appropriate for Gilroy, 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 materials disposed of in landfills.

- **Absence of Hazard.** The hazard potential of adding mixed paper to curbside pickup is insignificant. Collected paper should be stored properly to prevent fire 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 be completed in the short-term planning period (1995).

- **Facility Requirements.** No new facility is required.

- **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.** The cost for this alternative is expected to be minimal since only the operational costs are increased slightly. Costs for the program are estimated to be in the low range.

- **End Uses.** See section titled *Market Conditions*.

- **Public vs. Private Operation.** The program outlined in this alternative could be operated by either a public or private entity, but would be added to the existing program.

Mobile Collection System

A mobile collection system, by definition, is one which moves and can service more than one area. Under AB 939, the City of Gilroy 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, such as Gilroy, with fairly high population densities and with many recycling collection programs in place would 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 Gilroy, 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. Because Gilroy has a fairly dense population and has many recycling programs in place, it is served more efficiently by promoting and expanding existing programs.

- **Absence of Hazard.** The hazard potential of establishing a mobile collection system is virtually insignificant.

- **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 could be completed in the short-term planning period (1995).

- **Facility Requirements.** A mobile collection system would require a trailer for customer transactions and a storage area for material collected. Materials would be processed at the existing facility.

- **Consistency with Local Plans and Policies.** This alternative is consistent with City policies, however, it could have negative impacts on recovery levels for the existing curbside recycling program.

- **Institutional Barriers.** See above *Consistency with Local Plans and Policies.*

- **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 Gilroy are estimated to be in the low range including capital costs to establish a mobile collection system. Costs are estimated to range from $100,000 to $150,000.

- **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.

Expand Drop-off Center Recovery

Drop-off recycling centers range in size, from "igloo" style domes, to large centers. They require that the generator source separate recyclable materials and take 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. Gilroy's center is located at the transfer station. 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 for persons who do not have curbside service and also provide 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. This alternative would expand existing materials to include other materials such as corrugated cardboard, and both high-grade and mixed office paper.

This alternative is evaluated below to determine whether it is appropriate for the City of Gilroy, 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. With expansion, materials recovery is expected to increase about 0.1 percent over current levels.

- **Absence of Hazards** Drop-off recycling centers present moderate hazards; however, expanding the types of materials that could be accepted at the current drop-off center at the transfer station would not produce significant hazard.

- **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, could 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.** No new facility would be required.

- **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.** Costs for this alternative drop-off facility are estimated to be negligible.

- **End Uses.** Please see section titled "Market Conditions."

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

Expand Buy-back Center Recovery

Under AB 939, the City of Gilroy 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.

Expansion would include buyback of additional material types and/or increasing the number of center locations.

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

- **Effectiveness.** Buy-back centers in communities with established recycling programs can be less effective because materials are simply transferred from other recycling programs, such as curbside to buy-backs.

- **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.** 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.** There would be no additional costs to the City to expand market programs.

- **End Uses.** See section titled "Market Conditions."

- **Public vs. Private Operation.** A buy-back center would probably be privately operated.

Expand Multi-Family Dwellings Collection

This alternative addresses the objective of establishing programs for the collection of recyclable materials from multi-family dwellings. Multi-family dwellings are typically house apartment, condominium, and townhomes, as well as senior citizen homes and mobile home parks. In Gilroy, most duplexes and townhomes are considered single-family dwellings, and are serviced by the Gilroy curbside recycling program.

Currently in Gilroy, there are a few recycling programs on-site at multi-family dwellings. There are approximately 2,114 multi-family dwelling units in the City. This number is projected to increase approximately 3 percent by 1995, and to represent approximately 22 percent of the total number of housing units in Gilroy. Currently, of the 186 building locations within the city, 32 apartment building complexes are being served with special toter bins for recycling.

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 Gilroy, as well as to compare it to other alternatives.

- **Effectiveness.** A recycling program for multi-family 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 and tin cans, PET, HDPE, and polystyrene plastics, and waste oil. The success of the program will depend on how well the particular needs of each type of multi-unit dwelling are considered.

- **Absence of Hazard.** Recycling programs at multi-unit dwellings present minimal hazards, which will depend on the type of program in place. For example, broken glass or other miscellaneous items may 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 collector, 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 be completed within the short-term planning period (1995).

- **Facility Requirements.** No additional facilities would be required.

- **Consistency with Local Plans and Policies.** Minor changes to existing plans and policies may be required. These could include changes to 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 they are 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. Many of these can be remedied with strong public education efforts.

- **Estimated Cost.** Estimated costs for adding more multi-family dwellings to the existing recycling program are estimated to be in the low range. Cost considerations include type of collection container, type of collection service (e.g., door-to-door versus central locations,) type of collection vehicle (new trucks may be needed,) and type of labor (i.e., one or two-person crew).

- **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.

IV.4.2 Non-Residential Alternatives

Commercial/Industrial Recycling Program

This alternative addresses the objective of establishing a commercial recycling program for Gilroy. To recycle more of the commercial/industrial waste stream, a comprehensive recycling program will have to be established and a broader range of materials collected. Because the commercial/industrial waste stream accounts for over 68 percent of the City's waste stream, a significant portion of the waste stream can be diverted 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.) and/or phase in the program by material types (e.g. OCC collection, then glass, then mixed paper, etc.)

This alternative is evaluated below to determine whether it is appropriate for Gilroy, 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, PE film plastics, ferrous metals, and wood.

- **Absence of 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. More 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 short-term planning period (1995).

- **Facility Requirements.** Facility needs for this alternative include additional trucks, drivers, and collection containers. 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.** Some businesses may be unwilling to participate in recycling programs, as these programs are generally not revenue-producing, and often there are costs to the company. Also, space constraints for waste collection at commercial/industrial facilities are sometimes 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. These costs for the programs are in the low range.

- **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.

Commercial Curbside Program.

This alternative addresses the objective of establishing source separation recycling programs for small volume non-residential waste generators in the downtown commercial areas where many small businesses have little room to store recyclable materials. This alternative resembles the residential curbside program. Other small business parks and shopping areas could also be targeted. 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 that refuse is collected.

This alternative is evaluated below to determine whether it is appropriate for the City of Gilroy, 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.

- **Absence of 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 areas at businesses may need to be expanded or altered in order to provide room for one week's worth of recyclable materials. The existing processing facility may need to be expanded in the medium-term as collection volumes increase.

- **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 are estimated to range from moderate to high for a fully implemented program..

- **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.

Expand Material Recovery at the Transfer Station

Two basic approaches to recovery of recyclable material at a landfill or transfer station facility differ largely by the source and condition of the waste materials being processed at the facility.

The first system--a materials processing facility (MPF)--is designed to sort and process source separated recyclables which have been collected from either residential curbside recycling or various types of commercial collection programs. These facilities may use varying methods of mechanical and manual sorting to separate the various sub-types of recyclables, e.g. color-sorting glass, and to remove contaminants. Most processing facilities in the United States today are of this type which are sometimes referred to as intermediate processing facilities.

The second system--a materials recovery facility (MRF) - is less common in the United States, but its name is commonly mis-used for all types of recycling processing facilities. This system is designed to remove or pick-out recyclable materials from mixed trash and garbage. While there is overlapping use of similar types of equipment for MPFs and MRFs (and hence causes part of the confusion,) the designed purpose of removing recyclables from a larger volume of trash involves different engineering design and results in different efficiencies and end-product quality of the separated recyclables. MRFs also tend to be larger and more costly facilities than MPFs which can be more easily designed to efficiently process lower through-put volumes of materials.

Currently, the San Martin Transfer Station has a small MPF for separating the commingled curbside recyclables collected in Gilroy. The system is efficient, but can not process the much greater volume of materials projected for recovery in the short-term. Further, it has no equipment for compacting bulky items such as cardboard and light plastics. Expansion of the MPF will be required during the short-term to handle the increased volume of old corrugated containers (OCC) collected in the curbside as well as commercial recycling programs.

This alternative is evaluated below for its suitability for Gilroy.

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

- **Absence of Hazard.** This alternative presents no major hazards. In fact, baling of cardboard and plastic reduces the possibility of fire hazard.

- **Ability to Accommodate Change.** Both MPF and MRF 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.** Expansion of the existing MPF 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 that are probably more suited to the medium-term planning period.

- **Facility Requirements.** This alternative could require construction of a separate facility or be included in the present structure with re-arrangement of existing equipment.

- **Consistency with Local Plans and Policies.** A facility in this alternative is consistent with local plans and policies.

- **Institutional Barriers.** Both MPF and MRF recovery facilities would require state and local permits to operate. However, expansion of the existing MPF may only require permit modifications.

- **Estimated Cost.** The costs associated with this alternative depend on the type of facility and processing operation selected. Existing facilities and sites to be used for this alternative will also affect the cost. Total costs are estimated to range from $500,000 to $1,000,000 for minimum MPF expansion.

- **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.

Salvage Recovery at Transfer Station or the Landfill

Salvage at solid waste facilities involves the recovery of materials from loads that are delivered to a designated site, such as a landfill or transfer station. Salvaging is similar to a manual material recovery operation. 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 the transfer station.

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 Gilroy, 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.

- **Absence of 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. Safety training procedures will be employed to mitigate any hazards to employees.

- **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 usually can be integrated into existing facilities, although space constraints are a problem at certain facilities.

- **Consistency with Local Plans and Policies.** This alternative is consistent 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.

- **Estimated Cost.** Costs for this alternative for the City of Gilroy are estimated to range from low to moderate.

- **End Uses.** See section titled *Market Conditions*.

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

Inert Solids Diversion Project

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 will be 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 Gilroy, 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.

- **Absence of 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 instituted in the short-term planning period (1995), and be an on-going activity.

- **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 Gilroy are estimated to range from low to moderate.

- **End Uses.** Primarily road base, aggregate and bedding.

- **Public vs. Private Operation.** Operation of the processing facility would be private.

IV.4.3 Institutional Programs

Changes in Permitting Practices

The City of Gilroy 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 Gilroy is also aware of the Recycling Market Development Zones established under SB 1322 and is considering this option. A community that is a designated Zone offers state and local government incentives to draw to that community industries that use post-consumer waste as the feedstock in their manufacturing processes. Zones will help stimulate economic development in communities by increasing jobs and increasing the tax base.

This alternative is evaluated below to determine whether it is appropriate for the City of Gilroy, 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 Gilroy, the materials targeted, adherence to the regulations by the community, and the level of enforcement.

- **Absence of 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. Each of the regulatory programs outlined in this alternative would have to undergo an approval process as well as anticipated resistance by generators to any further regulation by the City. The complexity of, and opposition to, these programs may preclude their implementation in the short-term time frame.

- **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. However, in the absence of any stated commitment to voluntary approaches to recycling (and barring any conflicts with current plans, policies and ordinances)

regulatory approaches to recycling may not pose any conflict for the City.

- **Institutional Barriers.** Institutional barriers to this alternative involve potential conflicts within the jurisdiction between City agencies responsible for implementing effective waste management programs designed to meet the requirements of AB 939 and City agencies responsible for regulating building construction and site development. New regulatory requirements for residential and commercial areas within the jurisdiction could be an impediment to attracting new growth and investment in the community, especially if similar restrictions are absent in neighboring jurisdictions.

- **Estimated Cost.** Costs for regulatory programs depend primarily on the level of regulatory programs that the City of Gilroy chooses to pursue. Each of the programs outlined in this alternative would require resources from the City for developing, administering, implementing, monitoring, and enforcing the program. Furthermore, each of the programs would involve costs associated with legal fees and staffing incurred during the approval process. The costs to the private sector of the regulatory programs outlined in this alternative are unknown.

- **End Uses.** See section titled *Market Conditions.*

- **Public vs. Private Operation.** Not applicable.

Rate Structure Modifications

Recycling activities can be encouraged through rate structure modifications including disposal fees and volume-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.

Volume-Based User Fees. Volume-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 of these systems is that the collection vehicle have a scale and some type of a record-keeping 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 Gilroy, 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. 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.

- **Absence of Hazard.** There are no direct or indirect environmental hazards 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. While these disadvantages are possible, there is no documentation to support these claims.

- **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 short- and medium-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 may result in more waste being compacted into each can, thereby increasing the density of the waste for the hauler. 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 structure modifications.

- **Consistency with Local Plans and Policies.** This alternative is generally consistent with the plans, policies, and ordinances of the City of Gilroy. 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. These barriers become more complex when single or multiple private haulers and/or disposal facilities are included in the implementation and rate-setting process.

- **Estimated Cost.** Implementing rate structure modifications would require at least five steps:

  1. a rate study to determine appropriate rate structures for achieving the desired level of participation in recycling programs

  2. a determination of how the proposed rate structure would impact the fixed and variable costs of collection and disposal

  3. review and approval by the City of Gilroy (including a public hearing)

  4. generation of informational and educational materials

  5. modification of existing billing operations.

- **End Uses.** See section titled *Market Conditions*.

- **Public vs. Private Operation.** This alternative is compatible with either public or private refuse collection.

MARKET DEVELOPMENT MEASURES

Several options for market development for recycled materials are available to the City of Gilroy 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 extensively in chapter VI, *Education and Public Information Component.*

Local procurement ordinances involve adopting a procurement policy for the City of Gilroy specifying that one or more of the following criteria be considered in purchasing decisions: durability, recyclability, reusability and recycled material content. Additionally, the City of Gilroy 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 products with an established percentage of recycled material content.

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

- **Effectiveness.** The 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.

- **Absence of 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 Gilroy.

- **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 period. However, the City of Gilroy 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 time frame 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-term time frame.

- **Facility Needs.** There are no facility requirements for this alternative.

- **Consistency with Local Plans and Policies.** This alternative may conflict with current policies and ordinances for the City regarding low-bid purchasing. However, it is consistent with City policies to encourage market development for recycled materials.

- **Institutional Barriers.** Purchasing and procurement programs across public agencies will have to be coordinated in order to achieve 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 Gilroy 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 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. until such time when greater supplies make prices more competitive. This process is currently happening with paper products.

- **End Uses.** See section titled *Market Conditions.*

- **Public vs. Private Operation.** Not applicable.

Explore 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 Gilroy could re-route commercial collection runs in order to preserve the integrity of recyclables destined for a materials 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 Gilroy, 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.

- **Absence of 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 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 Gilroy.

- **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.** Costs for this alternative are unknown, however, they would include costs for development, implementation, and monitoring of programs designed to apply the new materials handling methods. Furthermore, this program could involve costs associated with any approval process for new separation and collection methods. The costs to waste haulers must be determined by the City.

- **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.

IV.5 SELECTION OF A RECYCLING 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 Gilroy 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 each alternative is appropriate to the City's needs and assigned each alternative a ranking in order to select various alternatives. In selecting alternatives, the City of Gilroy 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.

Alternatives were assigned ratings of high, medium or low according to the assessment of their evaluation criteria. The results of these ratings are presented in Table IV-1.

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.

IV.5.1 Short-Term Planning Period

In order to meet the goals and objectives outlined in this component, the City of Gilroy will have to divert approximately an additional 9.3 percent of the total waste stream in the short-term planning period. To meet these goals, the City has selected the following programs and alternatives:

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

- Develop local markets for materials made from post-consumer waste materials.

Residential Alternatives

- Expand the residential curbside collection program for recyclables. This selection is based on waste stream impact, effectiveness, as well as ease of implementation in the short-term.

Table IV-1

RECYCLING PROGRAM ALTERNATIVES EVALUATION

RECYCLING COMPONENT PROGRAMS	EVALUATIVE CRITERIA						EVALUATIVE DISCUSSIONS			
	Effectiveness	Hazard	Flexibility	Waste Stream Shift	Ease of Implementation	Facility Need	Consistency with Local Policy	Institu-tional Barriers	Implementa-tion Costs	Markets
Expand Curbside Collections	Low	Low	High	Low	High	Low	High	Low	Low	High
Drop-off Centers	Low	Low	High	Low	Medium	Medium	High	Low	Low	Low-Medium
Buy-back Centers	Low	Low	High	Medium	Low	Medium	High	Low	Low	High
Mobile Collection	Low	Low	Medium	Low	Low	Low	Medium	Medium	Medium	Low-Medium
Multi-Family	Low	Low	Medium	Low	High	Low	High	Low	Low	Medium
Commercial Programs	Medium	Low	High	Low	High	Medium	High	Low	Low	High
Commercial Curbside	High	Low	High	Medium	Medium	Medium	High	Low	Medium	High
Expand Material Processing	Medium	Medium	High	Low	Low	High	High	Medium	High	Low-Medium
Expand Salvage Recovery	Low	Low	High	Low	High	Low	High	Low	Low	Medium
Inert Solids	High	Low	High	Low	Low	High	High	Medium	High	Low
Permitting Changes	Low	Low	High	Low	Medium	N/A	Medium	Medium	N/A	N/A
Rate Structure Modifications	Low	Low	High	Medium	Medium	N/A	High	Medium	N/A	N/A
Market Development	Low	Low	High	Low	High	N/A	High	Low	N/A	N/A
Materials Handling Methods	Low	Low	High	Low	Medium	Low	High	Low	N/A	N/A

- Increase curbside recycling service to all multi-family dwellings. This selection is based on impact, effectiveness, as well as ease of implementation in the short-term.

- Continue a program of buy-back centers for recyclables. This selection is based on impact, effectiveness, market conditions, as well as ease of implementation in the short-term.

Commercial Programs

- Develop a commercial/industrial recycling program to collect corrugated cardboard from selected businesses. This selection is based on impact, effectiveness, market conditions, as well as ease of implementation in the short-term.

- Expand glass collection from the existing bars and restaurants program.

- Develop a commercial collection program for corrugated cardboard and other recyclables.

- Determine feasibility of expanded processing capability for source-separated recyclables.

- Develop a program to divert inert solids generated from public works and construction/demolition projects to a materials processor.

- Develop a program of regulatory approaches such as zoning, building code, and land-use requirements to promote recycling activities. This alternative includes the development of Recycling Market Development Zones established under SB 1322.

IV.5.2 Medium-Term Planning Period

In order to meet the goals and objectives outlined in this recycling component, the City of Gilroy will have to divert approximately 23.0 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, Gilroy has selected the following programs and alternatives:

- Expand programs implemented in the short-term planning period.

- Construct materials processing center for more efficient handling of source-separated recyclables. as part of yard waste collection and processing facility.

- Expand plastics recycling operations to include a wider variety of polymer types.

- Increase public awareness and local demand for materials and products made from post-consumer waste.

- Expand a market development program through local procurement of products with recycled material content.

- Determine feasibility of construction of a Materials Recovery Facility(MRF) to remove recyclables from mixed refuse and trash.

- Monitor efforts at the state level to encourage recycling, including financial and economic incentives, public education efforts and other programs.

IV.6 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 Gilroy, 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. In addition, the City of Gilroy is aware of the Recycling Market Development Zones established under SB 1322 and will consider this option in conjunction with other local jurisdictions. 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 nine to twelve months, and will include information on markets in California.

The City of Gilroy is in the fortunate position of being able to take advantage of the contracts that their recycling hauler, SVRD, has established with various processors nationwide. This amounts to virtually guaranteed markets for many waste types; some of these are included in the following discussion.

IV.6.1 Recoverable Materials

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. The amount of ONP that is available nationwide for recycling exceeds the demand. However, this situation is expected to change, although it is not as serious on the West Coast as it is in other parts of the country. It is estimated that the demand for ONP will almost double by 1995 due to increases in exports of ONP, the start-up of new paper mills, the conversion of others to use de-ink newsprint, increases in the paper board market, and other factors.

Because ONP is contaminated with printing inks, it is necessary to de-ink this 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 material, 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 $25 to $40 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 purchase contracts with an end-user mill, Weyerhaeuser Paper Company, for newspaper (and other paper grades) which allow more consistent pricing and demand.

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 $20 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; the nearest one to Gilroy is in Santa Clara.

Mixed Waste Paper

As the name implies, 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. However, other markets need to be identified in order for recycling of mixed paper to be feasible in the City of Gilroy.

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 $40 to $65 per ton. Potential buyers for OCC collected in the City of Gilroy are Jefferson Smurfit, Weyerhauser, and DAI EI Papers USA Corporation. 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[3] and is worth approximately $3 to $4 per pound. Even this small amount of tin can cause contamination in steel making. 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

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

a raw material.[4] Steel can recycling is expanding, due in part to increased participation by steel mills and detinning mills in collecting and purchasing used steel cans.[5] This is despite aggressive efforts by the aluminum can industry to enter the steel-dominated food can market.[6]

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.[7]

Glass Containers

Waste glass usage in the U.S. is estimated at 25 to 30 percent of the glass containers produced. A primary concern for glass container plants is the quality of the material. In the glass plant, contaminants can cause damage to equipment or result in poor quality products. One of the problems with curbside collection of commingled glass is that it produces multi-colored broken 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 new glass containers 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 from Gilroy are Owens-Brockway (a division of Owens-Illinois Corporation) in Tracy and Circo Recyclers in Newark. 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 glass. 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 of the AB 2020 redemption value for glass beverage containers raises the total market price.

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4 Watson, p. 18.

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

6 Misner, p.70.

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

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 drink 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. More than 1,310 million pounds are made into trash bags. It is also used to make piping and to coat wires and cables[8] and in the manufacture of rigid items, such as food storage containers and flexible lids.[9] LDPE is used in plastic grocery bags, 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.[10]

Some local markets for LDPE are Bay Polymer 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

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8 *Reducing Plastics in the Waste Stream*, by C. Papke, Resource Management Associates; April,1990

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

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

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.[11]

Polystyrene

There are various forms of polystyrene, the most familiar being the foamed or expanded polystyrene (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 they are 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.

Inert Solids

Asphalt and concrete from construction demolition gets landfilled in many areas, although it is often recyclable. Local recyclers are Raisch Products in Sunnyvale, 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 and newspaper. Numerous brokers on the West Coast represent these markets and are listed in various references.

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

Table IV-2

RECYCLING IMPLEMENTATION COST FOR SELECTED PROGRAMS

Selected Programs[1]	Dollar Cost	Cost Range[2,3]	Revenue Sources
Short-term:			
• Expand C/S materials	4.	Low	Rate surcharge
• Expand multi-family service	4.	Low	Rate surcharge
• Commercial cardboard collection	5-10	Low	Rate surcharge
• Commercial curbside collection	200-500	Moderate	Rate surchrage
• Expand MRF capacity	500-1,000	Low	Disposal fee
• Inert solids	1,000-2,000	High	Disposal fee
• Permitting changes	--	Low	Disposal fee
• Rate structure changes	--	Low	Disposal fee
• Market development	5-10	Low	Disposal fee
Medium-term:			
• Expand commercial curbside	100-200	Moderate	Disposal fee
• Establish materials recovery at transfer site	500-3,000	High	Disposal fee
• Expand salvage recovery	10-50	Low	Disposal fee
• Expand inert solids recycling	1,000-2000	High	Disposal fee
• Expand market development	10-50	Low	Disposal fee

Notes:

1. Costs for existing programs are not included. City staff costs included in program costs, and cover a one full-time position for both planning periods.
2. Existing city recycling programs have a net cost to residents of $1.29 per HH per month for a total net cost of $145,000. per year. The monthly waste unit cost is $0.004 for single-can households.
3. Definitions: Costs are volume-based in terms of monthly dollars per 32-gallon "waste units" of MSW in Gilroy (50,340 TPY = 503,400 cu. yds. or 3,146,250 waste units per year.
   Low: a cost range of $ 0.0 to $ 0.20
   Moderate: a cost range of $0.21 to $ O.50
   High: a cost range of $0.51 to $ 1.00
4. Costs included in existing program operation. Added costs are expected to be less that $10,000 per year.

Table IV-3

RECYCLING IMPLEMENTATION SCHEDULE

Projected Start	Short-Term Implementation Tasks	Responsible Agency
1/1/92	• Expand curbside materials	City/Hauler
1/1/92	• Expand multi-family service	City/Hauler
7/92	• Commercial cardboard collection	City/Hauler
1/94	• Commercial curbside collection	City/Hauler
7/92	• Expand processing system	Hauler
7/93	• Inert solids	Hauler
10/92	• Permitting changes	City
7/92	• Rate structure changes	City
1/92	• Market development	City
	Medium-Term Implementation Tasks	
On-going	• Expand commercial curbside	City/Hauler
1996	• Establish materials recovery at transfer site	City/Hauler
On-going	• Expand salvage recovery	Hauler
On-going	• Expand inert solids recycling	Hauler
On-going	• Expand market development	City

IV.7 IMPLEMENTATION 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 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.

IV.7.1 Implementation of Programs

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 IV-2. Additionally, the costs, revenues, and revenue sources necessary for implementation of the selected alternatives are presented in Table IV-3. Gilroy will adopt an anti-scavenging ordinance to deter the unauthorized removal of recyclables from recycling collection programs.

IV.7.2 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:** Expand materials in the residential curbside recycling program.
- **Objective 2:** Expand participation in multi-family dwelling recycling programs.
- **Objective 3:** Develop participation in commercial recycling programs.

Group One 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:** Expand 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.

Group Two 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 record-keeping 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.

Group Three Monitoring Method

An annual survey 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 appropriate City agency or department. The City will monitor the programs with authority provided in Sections 41252 thru 41480 of the Public Resources Code. as described in the regulations filed by the California Integrated Waste Management Board as Title 14, Chapter 9, Article 6.2, Section 18733.6.

Funding Requirements Funding for the monitoring and evaluation program described in this section will be provided by the City through the surcharge on the garbage rate. Funding for this program includes the costs of

- administrative activities,
- record-keeping,
- program monitoring and surveying,
- tracking of survey results, and
- annual report-writing.

IV.7.3 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

Chapter V

COMPOSTING COMPONENT

V.1 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 Gilroy 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 42 percent of the Gilroy's municipal solid waste consists of compostable material including processed food wastes, 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.

In addition, potential environmental benefits would include 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 V.

V.2 OBJECTIVES

This section describes short- and medium-term objectives for Gilroy's 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.)

V.2.1. Short-Term Objectives

Other than the City's mulching program, there are no other yard waste or food waste compost programs currently operating in the City. The short-term objectives for compost programs plan are to divert 87 percent by weight of yard waste material from the MSW, and 26 percent by weight of food processing wastes (onion and garlic pomace.). Composting at these two levels will divert 10.9 percent of the total yard wastes available in the MSW and 6.4 percent of the total food wastes. Short-term objectives include the following:

- Locate a site for regional composting;
- Develop an in-house collection and processing infrastructure to manage the City's source-separated yard and wood wastes;
- Identify potential end-users and their anticipated product quality and quantity demands;
- Establish a yard waste drop-off site at the composting facility and/or at alternative convenient locations;
- Develop a plan for commercial and industrial food and food processing waste collection in anticipation of medium-term food waste composting;
- Encourage municipal departments to use compost products generated by the program, and inform residents of their availability;

- Encourage, via the source reduction component, residential backyard composting.

V.2.2 Medium-Term Objectives

Objectives for the medium-term planning period include:

- Refine the yard and wood waste collection and processing systems;
- Expand food and food processing waste collection and composting;
- Study the feasibility of co-composting yard waste with other organic residues, including sewage sludge.

V.3 EXISTING CONDITIONS

The results of the disposed waste analysis indicate that for the year 1990, disposed yard waste amounted to 6,299 tons; wood waste, 3,693 tons; food waste 12,275 tons, and other compostable materials, 3,194 tons.

The diversion of compostable wastes in 1990 from industrial waste sources is estimated to be 4.0 percent, or 265 tons annually, of the total available in the waste stream. This material consists primarily of tree and brush trimmings that are collected by City crews from park and street maintenance programs. The trimmings are chipped and stored in piles for use as mulching materials. None of the materials are formally composted.

V.4 PROGRAM ALTERNATIVES

V.4.1. 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 Chapter III.

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.

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.

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 multifamily 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 pre-processing 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.

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 population 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 materials recovery facility.
- 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 inches in diameter. Stumps and branches over 6 inches in diameter, and construction and demolition wood should not be accepted at the same location.
- The tipping fee for commercial haulers and residential self-haul should be set at 25 to 50 percent less than tipping fees at disposal sites in the region.
- One employee per site should monitor each 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 cubic yard 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 On-site Composting

On-site composting can be defined as the process of managed decomposition of organic materials on the premises that results in the creation of a usable horticultural product.

On-site 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 by the implementation of a pay-per-bag 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, on-site composting is a form of source reduction. Further information on on-site composting is provided in the *Source Reduction Component.* (Chapter III).

V.4.2 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:

Windrow Method. 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 feet wide, and 5 to 10 feet 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.

Static Pile Method. 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. 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 its unattractive as a primary management option for yard wastes.

Mulching. 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, reference is made to Chapter VIII, *Solid Waste Facility Capacity*. 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;
- 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 development regulations, state requirements, and the specific concerns relevant to the proposed site. Generally, factors may include:

- Proximity to waste generation areas;
- Proximity to potential markets;
- Availability and cost of the site;
- Accessibility of the site;
- Potential for public acceptance;
- Physical condition of site, including topography, geology aesthetics, and other factors;
- Availability of utilities for water, power and drainage ;
- 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.

V.5 EVALUATION OF ALTERNATIVES

V.5.1 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.

In Gilroy residential yard waste comprises 33.0 percent of residential wastes or 14.0 percent of the overall waste stream. Diversion of this waste stream will result in the significant reduction of solid waste going to landfills.

V.5.2 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.

V.5.3 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.

V.5.4 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; 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.

V.5.5 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 on-site composting and promote proper management is through public education and publicity. Backyard composting can be encouraged for other than economic reasons. 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.

V.5.6 Processing Options

Turned Windrows

Turned windrow composting has minimal associated hazards; odors from poor site or process management is the most frequently mentioned concern. Other 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 per ton (amortized capital and operating expenses,) while

sophisticated operations often cost approximately $30 to $40 per 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 per year facility are approximately $25 to $50 per 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 feet 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 five to ten tons per 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 per ton for a 10,000 ton per year operation.

V.6 PROGRAM SELECTION

The selected composting program expands upon the City's existing plan to collect and process source-separated yard waste from single-family dwellings, duplexes, triplexes, and mobile home parks, for use as soil amendments. The City's existing plan calls for these constituents of the residential sector to receive weekly curbside collection of source-separated yard waste, starting in July, 1993.

If processing capacity and end-users are available, the composting program could be expanded to include multi-family dwellings, as well as the commercial and industrial sectors, either through curbside collection, or drop-off, or both. Given the distance to the planned composting facility at the transfer station and the likely reliance on a drop-off program for these sectors and sub-sectors, the City should evaluate the feasibility of developing a yard waste drop-off transfer point closer to the center of town.

Additional materials, including processed food waste, may be composted at the later part of the short-term. Program requirements may be clearly delineated, and the City will assist in market development.

Under the City's existing plan, the hauler would deliver source-separated yard waste from City residents to a private centralized yard and wood waste composting facility. This facility would process yard and wood wastes via size reduction and turned windrow to produce usable soil amendments.

Composting methods used at a centralized facility would be controlled to meet health standards, and would not pose a significant risk to human health. When properly managed, compost does not harbor vectors or disease.

Yard and wood waste shredding and composting are demonstrated, cost-effective, and environmentally beneficial techniques for managing a large portion of the solid waste stream. The costs of the turned windrow and shredding methods for yard and wood waste are substantially lower than for aerated static piling or in-vessel systems. In addition, these methods are faster and easier to implement, less subject to development cost overruns, more flexible, and simpler to manage, among other advantages.

Yard and wood wastes can be easily separated before entering the waste stream, and processed into marketable compost, mulch, and wood chips. In the short-term, approximately 17 percent of the waste stream is expected to be diverted via yard and food waste processing; in the medium-term, approximately 32 percent is expected to be diverted. The facility will have the potential to

incorporate additional compostable materials in the medium- or long-term planning periods.

In the late short-term, a portion of the food waste currently being disposed is planned to be diverted from the waste stream for composting in order to reach the State's 25 percent diversion goal by 1995. An additional quantity is scheduled for composting in the medium term to meet the 50 percent goal for the year 2000. Food waste constitutes approximately 28 percent of the total disposed solid waste. Based on the large amount of food waste generated by the commercial sector, the City will target commercial sector food waste for diversion, if judged feasible.

V.6.1. Selected Program Components

The selected composting program includes the following components:

- **Residential Curbside Collection** - Source-separated yard waste will be collected weekly from residents who receive regular trash collection services. Curbside collection provides convenience to residents and generally yields higher diversion rates.

- **Drop-Off Site** - Residents and commercial businesses will be encouraged to haul yard and wood wastes to a composting facility or a transfer point. A drop-off program will complement the curbside collection program and help to maximize diversion rates and reduce collection costs.

- **Centralized Processing** - Yard and wood wastes will be shredded and/or composted at a centralized processing facility, preferably the one described in the City's franchise agreement with its waste hauler. A central site, especially for shredding, is expected to be the most cost-effective approach, as well as the easiest to administer. Efforts will be taken to ensure that high-quality end products are generated.

- **Program Incentives and Requirements** - The City will provide incentives or requirements for participation in the composting program. The City will encourage composting facilities to assess a lower tipping fee for yard waste than for trash to encourage self-haulers to participate. A volume-based user fee for single-family residential trash collection would provide an incentive to compost materials at home or to source-separate yard waste. Regulatory measures, including requiring the source separation of yard waste and banning the

disposal of yard waste at the solid waste disposal facility, may also be enacted once the yard waste collection and processing system is in place. These and other incentives and requirements could help to ensure program success.

V.7 PROGRAM COST

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

It is estimated that the selected programs will cost from $497,000 to $617,000 per year for the short-term (see Table V-3.) This is based on collection costs between $55 and $75 per ton and processing costs at $20 per ton. Costs of collection and processing of food wastes were not factored in because it is anticipated that processed food wastes would be delivered to the site at no cost to the program, resulting in cost savings for the waste generator. It is also anticipated that nearby communities will be able to share both facilities as well as administrative costs.

V.8 PROGRAM IMPLEMENTATION

This section identifies the division of responsibilities for the City, program tasks and time line, and known program implementation costs. Primary responsibilities for the composting program rest with the City as shown in Table V-1. An implementation time line is shown in Table V-2.

Resources will be needed to cover the costs of capital equipment, labor, processing site improvements, administration and training, and public education and publicity.

The plan will also include development of markets outside the immediate area. Gilroy will explore the possibility of cooperating with other jurisdictions to market end-products. Overseas markets will be explored.

Public Information and Education

For 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.

Table V-1

CITY RESPONSIBILITIES FOR COMPOSTING PROGRAM

- Securing private processor and site
- Designation of acceptable materials
- Setting of incentives and requirements to participate in composting program
- Development and distribution of public education and publicity materials
- Collection of designated materials
- Market evaluation
- Development of procurement specifications and policies for compost products
- Integration of municipal activities with County composting initiatives
- Program monitoring and evaluation
- Expansion of programs and services

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.

V.9 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.

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.

Table V-2

COMPOSTING PROGRAM IMPLEMENTATION SCHEDULE

Task	Date
Organization	
Assign personnel for program administration	9/92
Finalize program details	12/92
Set incentives and requirements for participation	2/93
Begin monitoring and evaluating programs	2/93
Expand programs and services (e.g., food waste, etc.)	1995
Collection	
Establish yard waste drop-off site at transfer station or other site within the City	10/92
Begin separate collection of yard waste for single-family residences, duplexes, triplexes, and mobile home parks	7/93
Encourage drop-off by commercial and industrial sectors, and by multi-family dwellings	7/93
Processing	
Begin Processing	7/93
Marketing	
Evaluate markets	9/92
Develop procurement specifications and policies for compost products	10/92
Education and Public Information	
Develop education and public information materials	2/93
Begin distributing education and public information materials	4/93
Establish Master Composter Program	2/93

The plan will also include development of markets outside the immediate area. Gilroy will explore the possibility of cooperating with other jurisdictions to market end-products. Overseas markets will be explored.

Public Information and Education

For 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

To improve the overall quality of end-products, the City during its annual review of rates, will study the effect of rates on assuring high-quality compost products. It may be more cost-effective to collect source-separated yard waste, or other compostable feedstocks, in order to lower contaminant levels and allow for improved quality of the end-products.

Adjustment of disposal rates (e.g., variable-rate residential collection, or reduced rates for clean self-haul loads) could encourage residents to provide cleaner materials. Thus, while collection costs may be increased through these measures, overall program costs could be less because of lower processing costs and higher revenues for better quality end-products.

V.9.1. 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.

V.10 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;
- 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;
- Recording by the hauler of the estimated volume or weight of materials collected and accepted at the composting site, on a daily basis;
- Other supplementary measures as deemed necessary or desirable.

The City will monitor the programs with authority provided of Sections 41252 thru 41480 of the Public Resources Code.as described in the regulations filed by the California Integrated Waste Management Board as Title 14, Chapter 9, Article 6.2, Section 18733.6.

A waste generation study will be undertaken by Gilroy 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 Gilroy 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 percent and 50 percent diversion of yard and wood waste-needs improvement;
- Between 50 percent and 75 percent diversion of yard and wood waste-satisfactory;
- Greater than 75 percent of yard and wood waste-effective.

Funding requirements for the monitoring program shall be minimal. Depending on the level of detail required by the State for the subsequent waste generation studies, funding requirements may be significant.

In the event that the composting program is deemed unsatisfactory or in need of improvement, based on the evaluation criteria above, the City will reassess its strategy in meeting its solid waste diversion objectives. Possible remedial strategies that would be considered include:

- Targeting additional materials for composting
- Allocating greater resources, such as for administrative staff time and public education and publicity
- Raising the user fee on the collection of trash to encourage participation in either municipal or home composting programs
- Financial credits or rebates to those households that compost their yard waste at home rather than setting it out separately for transfer to the composting facility
- Enforcing with fines and other penalties the source-separation of targeted materials, including yard waste

Table V-3

COMPOSTING PROGRAM ESTIMATED ANNUAL COSTS (Short-term by 1995)

Collection ($55-75 /ton @ 4,500 tons/yr)	$247,500 to 337,500
Processing ($20/ton @ 10,000 tons/yr)	$200,000
Collection (Food Wastes)	—
Administration, Training, and Monitoring (2,000 staff hours)	$50,000 to 80.000
Public Information and Education (included in *Education and Public Education component*	—
Revenues	N/A
TOTAL	**$497,500 to 617,500**

Notes
1. Processed food wastes delivered to site at no cost to program.

Chapter VI

SPECIAL WASTES

VI.1 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 9, 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 State Office of Toxic Substance Control 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."

Typical special waste types include:

- Sewage sludge
- Ash
- Asbestos
- Used tires
- White goods
- Small Appliances
- Mattresses and Household goods
- Abandoned vehicles
- Dead animals

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 in a later section.

VI. 2 GOALS AND 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 Gilroy. 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 waste disposal study described in Chapter II showed that the majority of refuse disposed in the special waste category were "Other Special Wastes" or common household appliances such as stereos, radios and telephones. Markets for these materials are not well developed and the potential for diversion rests mainly in reuse programs in which small broken appliances are repaired or outdated items donated to applicable uses.

Addressing the special waste components shown in the disposed waste quantities, the following objectives are expected to be pursued:

- Reduce the hazard potential of white goods which may contain PCB causing chemicals.
- Continue existing programs that divert recyclable special waste from landfilling.
- 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.

Objectives to achieve these goals are to reduce the number of tires currently being landfilled, to prohibit white goods, mattresses and small appliances from landfill.

VI.3 EXISTING CONDITIONS DESCRIPTION

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 handling requirements for the disposal of special wastes and how they are being disposed of in Gilroy.

Sewage Sludge

Sewage sludge is produced by wastewater treatment plants during secondary treatment of waste water. In areas where wastewater systems service industrial plants, sludges may contain some heavy metals and other constituents that can pose hazards to public health. This is not the case in Gilroy.

Normally, sewage plant sludge can be discharged at a Class III landfill under the following conditions, unless the Office of Toxic Substances Control 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. Sewage sludge is not a large component as it is not counted as generated waste. It amounts to approximately four tons per day according to the Gilroy OMI Sewage Treatment Plant, but this material is not shown in either the disposal or diversion tables in Chapter II because it is currently stockpiled and land-spread each year on City-owned land. This practice is expected to stop, however, as the Gilroy OMI Sewage Treatment Plant is expanded and ground for land-spreading will not be available. The new plant will have dewatering equipment and the material will either be composted or landfilled.

A decision about whether to landfill or compost the sewage sludge will not be made until next year after the U.S. Environmental Protection Agency releases new federal regulations on sewage treatment plants. Nevertheless, this chapter addresses sewage sludge assuming that it will be a component of the waste stream after the new plant is complete by the middle of 1994.

Currently, wastewater treatment sludge in Gilroy does not contain high levels of heavy metals or other contaminants, and therefore, it is land spread and not disposed of in the Pacheco Pass landfill. Water treatment plant officials are currently discussing ways to compost the sludge with or without yard wastes and selected processed food wastes.

While diversion credit is noted in the Chapter II waste generation tables, it is possible that when the sludge is regularly composted, a diversion credit could be allowed in the future if the CIWMB or state amendments to the AB-939 law allow sludge composting to be included towards the current goals. The CIWMB is currently conducting a study in compliance with AB-1820 legislation to determine whether sludge should be counted.

Ash

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 unless the Office of Toxic Substances Control determines that the waste must be managed at a hazardous waste facility. Because concentrations of metals in ash commonly exceed levels set by the Office of Toxic Substances Control, the ash is considered to be a California Hazardous Waste and must be managed by a hazardous waste facility. The primary means of ash management in California is land disposal.

Currently no ash is being landfilled in the Pacheco Pass Landfill. However, ash is included in revised permit application being submitted by the landfill owner, South Valley Refuse Disposal.

Asbestos

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.

However, no asbestos waste was identified as being disposed of in the Pacheco Pass landfill, and any asbestos waste generated in the City of Gilroy is disposed elsewhere in accordance with pertinent local, state, and federal regulations.

Used Tires

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.

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.

Currently, waste tires are pulled manually from all trash that enters the San Martin transfer station or the landfill and set aside for mono-fill disposal in the inert fill area of the Pacheco Pass landfill. A plan is currently being considered to chip or shred the tires for energy production or other uses.

White Goods

"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 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.

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.

Currently, most white goods, about 87 percent, are being diverted from burial at the landfill. They are picked-up separately on-call from residences and businesses and stored at a site adjacent to the San Martin transfer station for processing before being sold to scrap metal dealers in San Jose.

Small Appliances

A flea market at the drop-off area at the San Martin transfer station has been established for donation and reuse of many discards such as small appliances and other household items.

While the program has been temporarily discontinued, it will be re-instituted when the facility is expanded to include a larger area and more equipment for processing the larger volume of recyclables. (See description in Chapter IV, The Recycling Component).

Mattresses and Household Items

Buyback and drop-off recycling centers serving the City of Gilroy accept the usual recyclable materilas as well as lawn mowers, bicycles, motors, high-grade office paper, automotive batteries, mattresses and boxsprings, and upholstered furniture. A special shed at the San Martin tranfser station is designed to hold mattresses dropped-off by self haulers or picked up at the curb with bulky wastes by the South Valley Refuse Disposal, Inc.. For qunatification of these materials, see Chapters II and IV for additional information.

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.

In addition to enforcement of abandoned vehicle ordnances, the Gilroy Police Department has coordinated an annual Abandoned Vehicle Clean Up Project since 1989. The program provides free tows for one month as an incentive for the disposal of junk vehicles. Two towing companies participate in the pick-up program. The vehicles are then sold to dismantling operations.

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.

Dead animal collection and disposal is generally managed at the 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.

The Pacheco Pass landfill is permitted to accept small animals for disposal; large animals are taken to a renderer.

VI.4 EVALUATION OF ALTERNATIVES

Management practices should take advantage of all viable markets and end uses for recyclable special wastes. In Gilroy, the recyclable special wastes include mattresses, small appliances and salvageable items. 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. This issues are further illustrated in Table VI-1.

Alternative 1 - Tire Recovery from Landfills

Some of the 61 tons per year used tires generated in Gilroy can be reused or recycled into a variety of end-products including floor tiles, dock bumpers, and playground covering. Current diversion of tires from Gilroy amounts to 28.1 tons per year of which approximately half are recycled and half are shredded for a waste-to-energy facility.

An important component of this alternative is the capability to stockpile used tires. The landfill owner is currently planning to install a facility to stockpile tires that are received at the landfill or transfer station. When specific regulations are promulgated by the state, South Valley plans to submit an application meeting those conditions to the County for the facility. It is expected that installation of the facility would require six to twelve months after County approval.

The City could develop a contractual arrangement through its franchised hauler or directly with a firm, such as Oxford Tire Recycling of Northern California, to collect used tires generated in the City. The collected tires could ultimately be recycled into specific end-products, or could be used as tire-derived fuel for the generation of electricity.

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

- **Absence of Hazard.** Prior to being processed, waste tires are stockpiled. When exposed to the elements, stored tires collect rainwater and can serve as breeding grounds for rodents and insects; they can also be a fire hazard. To minimize the hazard potential, the storage time 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. Tires represent approximately 0.2 percent of the disposal waste stream in Gilroy.

- **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 local support .

- **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 Gilroy.

- **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.

- **End Uses.** Used tires in good condition can be resold, and the casings used 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 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 byproducts 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 as a Tire-to-Energy plant is located in Stanislaus County near the city of Modesto.

Alternative 2 - Prohibit Disposal of Used Tires at Landfills

Used tires could continue to be accepted at the San Martin facility or the Pachecho Pass 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.

The City of Gilroy will support Santa Clara County efforts to prohibit used tiries from landfill. The City can negiotiate clauses in thje fanchise agreement wothe South Valley Refuse Disposal, Inc. to prohibit landfilling of used tires.

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

- **Absence of 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.** The ability of this alternative to accommodate change 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 all tires from the waste stream.

- **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 Pachecho Pass landfill or the San Martin facility.

- **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 1. There is currently a fairly stable market for used tires in northern California.

Alternative 3 - Prohibit Disposal of White Goods at Landfills

White goods could continue to be accepted at the San Martin transfer station and Pachecho Pass landfill, but would be banned from disposal. The site operator would require waste haulers to identify white goods in their in-coming loads and to deposit them at a specified stockpile location at the site.

The City of Gilroy will support Santa Clara County efforts to prohibit disposal of white goods from landfill. the City can negotiate clauses in the franchise agreement with South Valley Refuse isposal to prohibit landfilling of white goods.

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

- **Hazard. Stored** 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 the source of potential 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

- **Implementation Period.** A landfill ban on white goods could be implemented in the short-term planning period but might prove to be more appropriate for the medium-term.

- **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.

- **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 4 - Prohibit Disposal of Mattresses and Household Items at Landfills

Mattresses and household items could continue to be accepted at the San Martin transfer station, but would be banned from disposal at the landfill. The site operator would require waste haulers to identify mattresses and househould items in their in-coming loads and to deposit them at a specified stockpile location at the site.

The City of Gilroy will support Santa Clara County efforts to prohibit disposal of mattresses and household items from landfill. the City can negotiate clauses in the franchise agreement with South Valley Refuse isposal to prohibit landfilling of these items.

- **Effectiveness.** This alternative would be effective in diverting mattresses from disposal.
- **Hazard.** None.
- **Ability to Accommodate Change.** The ability of this alternative to accommodate change is limited to the quantity of mattresses that can be stockpiled on site during unfavorable market conditions.
- **Consequences to the Waste Stream.** This alternative would divert mattresses from the characterized waste stream
- **Implementation Period.** A landfill ban on mattresses and salvageable items could be implemented in the short-term planning period.
- **Facility Requirements.** This alternative requires an area at the landfill for stockpiling mattresses, 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..
- **Estimated Cost.** There are no significant costs associated with this alternative. Mattresses and salvageable items can be stockpiled by existing landfill personnel.
- **End Uses.** Mattresses can be mended and sold for reuse.

Alternative 5 - Prohibit Disposal of Small Appliances at Landfills

Small appliances could continue to be accepted at the San Martin transfer station but would be banned from disposal at the landfill. The site operator would require waste haulers to identify small appliances in their in-coming loads and to deposit them at a specified stockpile location at the site.

The City of Gilroy will support Santa Clara County efforts to prohibit disposal small appliances from landfill. The City can negotiate clauses in the franchise agreement with South Valley Refuse isposal to prohibit landfilling of these items.

- **Effectiveness.** This alternative would be effective in diverting small appliances from disposal.
- **Hazard.** None.
- **Ability to Accommodate Change.** The ability of this alternative to accommodate change is limited to the quantity of small appliances that can be stockpiled on site during unfavorable market conditions.
- **Consequences to the Waste Stream.** This alternative would divert small appliances from the characterized waste stream
- **Implementation Period.** A landfill ban on small appliances could be implemented in the short-term planning period.
- **Facility Requirements.** This alternative requires an area at the landfill for stockpiling small appliances, 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..
- **Estimated Cost.** There are no significant costs associated with this alternative. Mattresses can be stockpiled by existing landfill personnel.
- **End Uses.** Small appliances can be repaired and reused; they can also be used for scrap metal.

Table VI-1

SPECIAL WASTES
PROGRAM ALTERNATIVES EVALUATION

PROGRAMS	EVALUATION CRITERIA						EVALUATIVE DISCUSSIONS			
	Effec-tiveness	Hazard	Ability to Accommo-date Change	Consequences on Waste Stream	Ease of Imple-mentation	Facility Need	Consis-tency with Local Policy	Institu-tional Barriers	Imple-mentation Costs	Available Markets
Establish Tire Recycling	Low	Low	High	Low	High	High	High	Low	Low	Medium
Prohibit Tire Disposal	Low	Low	High	Low	High	High	Medium	Medium	Low	Medium
Prohibit White Goods Disposal	Low	Low	High	Low	High	Low	Medium	Medium	Low	Medium
Prohibit Disposal of Mattresses/Household Items	High	Low	Medium	Low	High	Low	High	Medium	Low	High
Prohibit disposal of Small Appliances	High	Low	Medium	Low	High	Low	High	Medium	Low	Medium

VI.5 SELECTION OF PROGRAM

In the previous section, five 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 Gilroy. 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.

This section presents the results of the evaluation of the alternatives presented in the previous section. To accomplish this, Gilroy has assessed whether or not each alternative is appropriate to the City's needs and assigned each alternative a ranking in order to select various alternatives. 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 presented below.

VI.5.1 Short-Term Planning Period

Currently, recycling programs targeting the materials described in the foregoing diversion alternatives divert approximatly 16 tons per year for less than 0.1 percent of the wastestream.(See Table X-1, under "other special wastes"). To meet the goals and objectives outlined in this component, the selected alternatives will divert an additional 0.2 percent of the total waste stream in the short-term planning period. The City of Gilroy has selected the following alternative programs:

- Increase existing white goods recovery.
- Establish used tire landfill abatement and recovery program.
- Prohibit mattresses, salvageable items and small appliances from landfill.

This selection is based on impact, effectiveness, and as well as practical ease of implementation in the short-term.

VI.5.2 Medium-Term Planning Period

The facility necessary to implement the selected alternatives in the short-term and medium-term planning periods is an area to store used tires for shipping. If tire shredding is feasible, additional equipment would be required.

Each Alternative selected in the short-term planning period will be continued in the medium-term planning period.

VI.6 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.

South Valley Refuse Disposal, Inc. would continue to remove white goods at the San Martin Transfer Station and process them for sale to scrap metal dealers. The City will be responsible for adopting an ordinance prohibiting disposal of white goods, tires, mattresses, salvageable items and small appliances that are generated in Gilroy. In addition, an amendment to the existing franchise agreement with South Valley Refuse Disposal to enforce the ordinance would be required. While participation from surrounding jurisdictions would be disirable, it would not be required for implementation of this white goods diversion program.

An important component of this alternative is the capability to stockpile used tires. The landfill owner is currently planning to install a facility to stockpile tires that are received at the landfill or transfer station. When specific regulations are promulgated by the state, South Valley plans to submit an application meeting those conditions to the County for the facility. It is expected that installation of the facility would require six to twelve months after County approval.

Implementation of the tire recovery program would be conducted by SVRD with funding being derived from a landfill tipping fee or garbage bill surcharge.

All of these activities are scheduled to be implemented in the short-term planning period.

VI.7 MULTI-JURISDICTIONAL SPECIAL WASTE EFFORTS

Multi-jurisdictional special waste efforts would be needed to expand or implement the recovery of additional special wastes. 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 removal of white goods, mattresses, salvageable items, and small appliances from landfill.

Table VI-2

SPECIAL WASTES PROGRAM IMPLEMENTATION SCHEDULE

Projected Start	Program	Responsible Agency
1/1/92	Reestablish "Flea Market at Transfer Station	Hauler
	Develop Tire Recycling Program	Hauler
1/1/92	Identify site for stockpile	
1/1/92	Modify permit	
on-going	Continue market search	
1993	Begin salvaging at Landfill	
1/1/92	Enhance mattress and household goods collection program	Hauler
	Print and distribute flyers	City
1/1/92	Develop white goods diversion program	
4/1/92	Indentify site for stockpile	Hauler
4/1/92	Modify permit	
1993	Begin slavaging at Landfil	
1/1/92	Develop monitoring/evaluation program	City

VI.8 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 Method: Periodic inspections of handling methods for special waste will be conducted at the Pacheco Pass 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, subsequent waste characterization studies will be conducted at the end of the short-term planning period to measure changes in both waste types and their 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 City of Gilroy Public Works Department. This Department will maintain contact with the Santa Clara County's monitoring efforts. The City will monitor the programs with authority provided of Sections 41252 thru 41480 of the Public Resources Code.as described in the regulations filed by the California Integrated Waste Management Board as Title 14, Chapter 9, Article 6.2, Section 18733.6.

Funding Requirements. Funding for the monitoring and evaluation program described in this section will be provided through an increase in the disposal fees. This surcharge fee increases would be passed on to all waste generators in Gilroy through their monthly collection charges. Funding for this program includes the costs of (1) administrative activities, including staffing, (2) recordkeeping, (3) program monitoring and surveying, (4) tracking of survey results, and (5) annual report-writing.

Staffing needs for on-going operation of these programs would consist of mainly program monitoring and record keeping.

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.
- Increase staffing at the landfill for salvaging materials at the active dumping area of the landfill.
- 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.

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- 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.

Table VI-3

SPECIAL WASTES IMPLEMENTATION COST FOR SELECTED PROGRAMS[3]

Selected Programs[1]	Cost Per Unit[2].	Cost Range ($ x 1000)
Short-term:		
• Tire Recovery Program	Medium	150 - 280
• Prohibit Tire Disposal	Low	8 - 12
• Prohibit White Goods Disposal	Low	4 - 8
• Expand Small Appliance Recovery	Low	10 -15
• Expand Mattress/HH Recovery	Low	5 - 10
Medium-term:		
• Continue Short term programs	Low	15 - 30

Notes:

1. Costs for existing programs are not included.
2. Definitions: Costs are volume-based in terms of monthly cost per 32-gallon "waste unit" of MSW in Gilroy (50,340 TPY = 503,400 cu. yds. or 3,146,250 waste units per year.
   - Low: a cost range of $ 0.0 to $ 0.08 per unit
   - Medium cost range of $0.09 to $ 0.20 per unit
   - Moderate: a cost range of $0.21 to $ O.50 per unit
   - High: a cost range of $0.51 to $ 1.00 per unit
3. The source of all revenues to support these programs would be an increase in disposal fees to cover program costs.

Chapter VII

EDUCATION AND PUBLIC INFORMATION

VII.1 INTRODUCTION

The key to a successful source reduction and recycling program is the active participation of both residents and businesses. The *Education and Public Information Component* is critical to the growth of participation in source reduction and recycling programs and to the long-term modification of public attitudes and behavior. Promoting source reduction and recycling in a City with a population of diverse demographics is a challenge that requires a significant and sustained dedication of resources, both financial and human. Each segment of the population must be addressed in terms that it finds understandable and relevant. Leadership shown by elected officials is of the highest importance.

Individuals and groups need to know that their actions matter and that they are helping to conserve scarce natural resources and to preserve environmental quality. A positive theme should be used extensively and consistently to convey this message.

The public education program outlined in this chapter stresses the benefits of participation in waste reduction, reuse, composting, and recycling. The program also clearly communicates how to accomplish what is asked of each citizen. 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 City plans to make every effort to minimize additional waste in its education and public information campaign by encouraging residents to save, reuse, or recycle the literature (e.g. brochures, flyers) they receive. The informational materials should be prepared in a way that reflects the source reduction and recycling principles that the City seeks to convey.

VII.2 GOALS AND OBJECTIVES

The following goals have been established for the short-term planning period (to the year 1995):

- Create widespread awareness of environmental and solid waste issues.

- Create broad visibility for the recycling and source reduction programs.

- Familiarize consumers about source reduction and recycling on an ongoing basis.

- Motivate increased participation by every sector in all available programs.

- Close the recycling loop by stressing the importance to all sectors of buying recycled and composed materials.

VII.2.1 Short-term Objectives

The following objectives have been established for the short-term planning period (to the year 1995):

- Designate a staff member to be in charge of developing public education and publicity materials.

- Develop or expand public education and information programs to address source reduction, composting, recycling, and household hazardous waste, tailored to the residential, commercial, and industrial sectors.

- Inform at least 90% of Gilroy's residents of the city's waste reduction and recycling programs by 1995.

- Expand outreach efforts and activities among racial and ethnic minority groups using bilingual news media and materials.

- Develop an speaker's bureau and Block Leader Program to increase participation to targeted sectors.

- Develop direct mailings and utility bill inserts.

- Initiate a student slogan contest to name the contractor's recycling truck.

- Promote the in-house source reduction and recycling programs at all City offices and shops; promote a City-wide procurement policy of using recycled products.

- Cultivate support by publicizing and encouraging involvement of the business community. Public recognition can also be used to acknowledge businesses that have implemented source reduction and recycling activities.

- Serve as a clearinghouse for information on waste reduction techniques.

- Participate in the annual Gilroy Garlic Festival by supplying a booth and educational material.

- Participate in county-wide public education efforts.

- Develop periodic surveys that measure changes in attitudes and behaviors among those targeted sectors, and use information in planning or revising educational materials.

VII.2.2 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 the evaluation of short-term activities.

- Develop new programs to target specific sub-populations or waste streams.

VII.3 EXISTING CONDITIONS

Residential

The City of Gilroy has hired a Resource Management Coordinator to promote and expand participation levels in the recycling and hazardous waste program.

In residential areas, door hangers and brochures describing curbside recycling were distributed to all households. This activity was coordinated between the City of Gilroy and South Valley Refuse Disposal, Inc.(SVRD). Door hangers and brochures currently in use describe the types of materials accepted and methods to prepare them in both English and Spanish. (See Appendix B.)

- *Curbside Recycling: Another Good Thing About Gilroy* discusses the curbside recycling program, distributed as a door hanger.

- A brochure, *Gilroy Curbside Recycling: Here's How to Do It (Asi Es Como Se Hace)* was distributed with yellow recycling bins.

The City sponsors a continuing short information spot on the local cable TV station that reaches many Gilroy residents, as well as publishing a bi-monthly newsletter which goes out to all residents that includes a *Green Page* dedicated to recycling and resource conservation.

The City has also participated in creating and staffing an educational display at the 1990 County Fair, promoting recycling in general, as well as the curbside programs.

Multi-family

The City of Gilroy initiated a pilot multi-family recycling program in 1990. As part of that program, a sample kit was developed which was sent to multi-family customers to outline the program.

A number of businesses and industries have participated in the Santa Clara County Manufacturing Group, which has recently published the *Guide to Commercial Recycling*.

The City of Gilroy was one of several communities to co-sponsor the *Business Environmental Networks Conference* on April 22, 1991. This one-day conference for the business community addressed a number of issues pertaining to solid waste management.\

Municipal

An educational program for City employees has begun to introduce the employees to the city's in-house multi-material recycling program.

Advertising

South Valley Refuse Disposal, Inc. (SVRD), the city's hauler, and buy-back centers, including the A-1 Recycling Circus, advertise continually in the Gilroy newspaper, *The Dispatch*.

VII.4 PROGRAM ALTERNATIVES

Education and public information materials will need to be geared to specific audiences so that information is clearly and quickly understood. There are many different programs that the City can use, including public education, public information (advertising and other publicity, events and promotions), community interaction and relations (meeting and organizational approaches), and youth education. Education and public information programs help to

reinforce the importance of source reduction and recycling, and are critical to program success.

Activities for a City-wide coordination of the program include the following:

- Create an office of education and public information and/or designate a staff member to be in charge of developing public education and publicity materials. Staffing needs to be sufficient to allow for both work in the office and in the field.

- Continue to chair the Curbside Recycling Task Force Committee to assist in developing and implementing education programs, and recruiting additional committee members.

- 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.

- Participate in community events.

Numerous avenues of communication are available that would allow the transmission of education and public information to the targeted waste generators. Examples are:

- Mass mailing (community newsletters), either alone or with utility bills.

- Placement of door-knob hangers.

- Recognizable theme, logo, and message. The logo should appear on all printed advertisements, as well as waste collection vehicles and equipment. Outdoor advertising can be placed on buses, bus shelters, benches, banners, posters, and litter receptacles.

- Use of a celebrity spokesperson or mascot as part of these efforts.

- 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 for two local newspapers

- Public service messages for two local radio stations, and the cable TV system. The cable system can produce public awareness shows or public service messages and outdoor advertising

- Seminars, workshops, and related programs.

- Participation in special events (e.g. Earth Day (especially if follow-up activities are planned), the state-wide Recycling Week, County Fair, Tapestry in Talent Festival, Garlic Festival, Mushroom Festival, art and wine festivals, and local events such as employee's 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.

VII.4.1 Residential Sector

Approaches to consider when developing public education programs for the residential sector include:

Meetings and Forums

- Sponsor City meetings, community forums, and public hearings to present source 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 is often called "Master Composter" programs.

Exhibitions

- Exhibit source reduction, recycling and composting programs at county fairs, shopping centers, parks, community gardens and other public sites

- conduct tours, open houses, and publicity events at recycling centers and waste processing facilities to give the public a better understanding of the issues

VII.4.2 Commercial and Industrial Sector

Methods for reaching the commercial and industrial sectors may be generally simpler and more direct. The City can develop materials specific to individual industries or businesses, and disseminate them to the businesses in question via a number of approaches, which include:

- Conduct mailings to special businesses, areas or categories.

- Work with the Chamber of Commerce and other business and professional associations.

- Develop a speaker's bureau of educators, industry and technical representatives and government 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.

- Work with various unions to encourage members to get involved (i.e. union sanctioned functions or workshops.)

- Develop specific programs tailored for the need of individual businesses (e.g. bakeries, dry cleaners.)

- Establish programs for specific business parks and centers.

- Prepare employee kits that explain the various programs. These can be passed out by employers.

- Require refuse hauler to do waste audits and contact customers periodically to offer recycling services.

VII.4.3 Institutional Sector

The City of Gilroy will need to work in cooperation with local public and private schools to develop innovative approaches to educating the youth of the community. The following approaches can be utilized specifically for schools:

- Sponsor special events in schools.
- Initiate student-run recycling programs in each school.
- Where feasible, establish student-run pilot composting programs.
- Develop environmental and waste management awareness in schools by integrating relevant topics into school curricula.
- Target non-English speaking youth through bilingual educational programs.
- Develop resource conservation curricula for K-12 teachers. Distribute curriculum at no charge to teachers.

The City of Gilroy will need to work in cooperation with South Valley Hospital, the community college, and municipal, county and state agencies to develop appropriate programs, such as:

- Conduct waste audits, and upon completion, develop activities, such as recycling, source reduction, and composting programs.
- Initiate training programs for municipal and county employees to assist in answering questions from residents about existing and anticipated programs as outlined in the SRRE.
- Cooperate with the county and state to develop programs to manage solid waste for agencies located within the community.

VII.5 APPROACHES TO PROGRAM SELECTION

Public Education

Public education (see *Program Alternatives* in this section) is paramount to helping Gilroy residents, businesses, and industries learn about ways to reduce, recycle, reuse, and compost. Once the public is educated about the city's

program, the City can begin to utilize public information and other selected alternatives to remind the public about what it has learned and how to participate.

In addition to the expansion of existing efforts to educate the public about the separation of recyclables, the City will begin to stress the importance of waste reduction and composting throughout all of the program's written, visual, and oral communications. For example, residents will be educated and informed of ways to compost to minimize their use of excessive packaging, and to remove their names from zip code lists that result in excessive "junk mail" being directed to their homes. Further, residents will be encouraged to advocate the use of recyclable materials at their place of work and to purchase goods containing recyclable materials content.

Public Information

Public information is a vital part of the source reduction and recycling program and requires a broad variety of targeted information, programs, and activities to reach Gilroy residents. By utilizing the suggestions made in this section, the City can inform large audiences about recycling, source reduction, and composting; thus interest and participation in the program is stimulated further. Since it is necessary to inform as many residents as possible, all alternatives in the section will be implemented or expanded.

Advertising and Publicity

By using printed materials, press releases, articles, media announcements and special reports, the City will be able to reach residents, businesses and institutions. Because repeated thematic advertising and publicity remind the public of the steps it can take to follow the city's source reduction and recycling programs, the following new or expanded programs will be implemented:

- Direct mail from the City to residents reminding them of the importance of participating in Gilroy's source reduction and recycling program.

- Solid waste and recyclable collection vehicles, as a visible component of the source reduction and recycling program, should have logos that remind residents to reduce, reuse, recycle and compost.

- A creative theme, slogan, and mascot should be adopted to serve as reminders to the public to participate in the program; celebrity spokespeople, if appropriate, can be utilized.

- Print advertising should be used widely to publicize Gilroy's source reduction and recycling program.

- Electronic media publicity could be used widely to publicize the source reduction and recycling program.

VII.6 PROGRAM SELECTION

The City must help residents, businesses, and organizations become more aware of the city's source reduction and recycling program. The best overall strategy for the City is a comprehensive, segmented mix of communications techniques and a variety of activities to reach the city's diverse population.

A blend of all available resources and alternatives previously mentioned will be developed or expanded upon by the City. The key is to use various public education and public information opportunities in a consistent, repeated, and comprehensive manner. In this way, each selected alternative reinforces the other selected alternatives for maximum effectiveness.

Implementation of all programs discussed in the Program Alternatives section would result in a comprehensive education and public information component that would help to ensure program effectiveness in waste reduction, ruse, composting, and recycling. Each segment of the population should b e addressed in terms that it finds understandable and relevant. The programs and approaches selected are:

- **General Approaches.** Information development that addresses solid waste management in general. The approach should be directed towards residential, commercial and industrial generators of waste;

- **Program Updates.** Feedback to the public on the success of all implemented programs. Methods include publishing an annual report and newspaper up-date articles on the progress of the programs;

- **Minority Participation.** Assessment of the need and the development of educational materials for the non-English speaking and/or reading populations .

- **School Programs.** Development of educational materials for school age children in both public and private schools. The curricular materials should contain information and guidelines regarding recycling, composting, source reduction, and household hazardous wastes;

- Preparation of **informational brochures** for commercial and self-haul generators to explain various options for the disposal of construction and demolition debris.

VII.6.1 Source Reduction

- Develop a backyard composting program. Include the establishment of demonstration plots, availability of composting kits, "how-to" literature, materials describing the uses of compost, and establishment of a Master Composter program.

- Develop materials that explain the grass clipping program.

- Publish a directory of all reuse and repair businesses.

- Consider a program of small grants to community public service groups that support community programs by providing technical assistance or public education.

- Develop a program to provide public education efforts through the media, the school system, and City programs to increase awareness of source reduction and waste management issues.

- Initiate support for State level actions.

VII.6.2 Recycling

- Enhance education materials for residential curbside collection program.

- Develop materials for commercial and industrial recycling programs. Include a "Recycling Kit," cooperative efforts with the 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.

- Prepare information materials that explain various enforcement measures that have been taken to protect recycling equipment and the illegal removal of recyclable materials from curbside collection programs.

- Prepare educational materials relative to residential curbside collection of yard waste.

VII.6.3 Composting

- Develop and distribute education materials on backyard composting for residents.

VII.6.4 Special Waste

- Develop educational literature which describes how to properly identify and dispose of special wastes.

VII.7 PROGRAM IMPLEMENTATION

Each component requires the implementation of certain education tasks to support the objectives of the component. While these programs need to be developed individually, there is also a need to take an integrated approach. It will be necessary to ensure that the public receives proper information on a phased-in approach. In some instances, the information and education provided will be appropriate for more than one issue. The manner in which information is disseminated might be similar for several components (e.g. brochures, newspaper articles, media "spots"), but what is actually said, and how it is said, 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 VII-1
PUBLIC EDUCATION IMPLEMENTATION PLAN

Starting Date	Short-Term Implantation Tasks	Responsible Agency	Cost($)
Current 2/92 3/92	Develop outreach program to media, school system & public to increase awareness: • Sponsor logo contest for students • Develop recycling/composting exhibit	City	15,000
Current	"Buy Recycled" campaign	City	5,000
1/92	Prepare educational literature about household hazardous waste program	City	5,000
9/92	Publish directory of brokers and end-users of recyclable materials	City	5,000
6/92	Develop outreach to business community; • Develop "Recycling Kit"	City	10,000
5/92	Prepare literature about proper disposal of special wastes	City	5,000
5/92	Prepare literature for residential and multi-unit recycling programs • Develop materials for distribution to minority communities	City	5,000
5/92	Prepare materials about about backyard composting	City	5,000
2/92	Develop and distribute directory of reuse and repair businesses	City	5,000
	Total Annual Costs		$ 60,000
	Medium-Term Implementation Tasks		
1996	Continue to emphasize "buy recycled" campaign; develop lists and resources for public	City	20,000
1996	Expand outreach program on source reduction of all materials including reuse, repair & HHW	City	45,000
1996	Redesign and prepare additional educational materials	City	25,000
1996	Develop on-going surveys to measure public response to program	City	20,000 T
	Total Annual Costs		120,000

Notes:
Costs include one full-time staff person for short-termand two full-time in the meduium term.

The source of revenue to support Education and Public Information Programs is currently derived from the City's General Fund; however the revenue to support the program in the short and medium-term will be derived from the franchise fee paid to the City through its contract with South Valley Refuse Disposal , Inc.

The costs and schedule for implementing the programs in this section are shown in the Table VII-1.

VII.8 MONITORING AND EVALUATION

The City of Gilroy will be responsible for monitoring the success of the programs. The monitoring necessary to evaluate the various programs can be accomplished by means of one or more of the following assessments:

- Number of schools and students exposed to various programs.
- Number of businesses taking part in the programs.
- Number and size of community events and activities.
- Number and frequency of purchased media advertising..
- Surveys conducted to determine awareness and participation levels for the various components
- Complaints and requests for information received by the office(r) of education and information and/or the contractors providing the various services.
- Qualitative feedback from waste generators about the information program.
- Quantity of waste diverted by programs publicized through education and public information activities.

VII. 9 EVALUATION OF PROGRAM EFFECTIVENESS

The City of Gilroy 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 the City Manager's Office.

Evaluation can occur at various stages of the public education process depending on the objective to be measured. The criteria used to evaluate the effectiveness include:

- Was the program established on time and within budget?
- Were personnel in place to ensure effective implementation of programs?
- Were activities developed to meet all pertinent environmental regulations?
- Are diversion goals being met?
- Where appropriate, data will be gathered by the City to assist in determining program effectiveness. This data could include:
- Number of volunteers in Block Leader and Master Composter programs.
- Number of schools and students exposed to various programs.
- Number of businesses taking part in programs.
- Number and size of pertinent community events.
- Number and frequency of media advertising events.
- Surveys conducted to determine awareness and participation levels for various components (e.g. percent of multi-family dwellings that recycle)
- Number of requests for information.

Education and public information programs are flexible, and therefore can be modified relatively quickly and easily. However, program details should not be changed unless absolutely necessary, for residents often react negatively to being asked to alter their behavior and patterns after they have recently habituated themselves to a new system. Should the program require changes based on a waste diversion shortfall, modifications to both the approach of the education and public information program and its content would be appropriate and necessary.

Formative evaluation attempts to identify the strengths and weaknesses of the messages, materials, and educational or informational strategies before proceeding 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 large amount of budgeted funds and must be evaluated carefully before funds are committed.

Process evaluation assesses the organizational and administrative aspects of the program. Outcome and impact evaluation identifies the short- and medium-term effect of activity on the targeted audience.

VII.10 MODIFICATION MEASURES

If the evaluation shows that specific diversion rates are not being achieved for certain programs and/or components, then expanding or intensifying 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 planned diversion rates are not achieved;
- Revise education and public information efforts to make them more responsible to the identified problems based on results of the evaluation;
- Expand the education and public information programs by adding new components or increasing frequency;
- Publicize new or additional incentives for participation in source reduction, recycling, or composting programs.

If it is determined that the education and information aspects of a program are not what is preventing the individual programs from reaching their goals, then the programs themselves may need to be modified accordingly to increase recovery, or new programs or regulations, such as mandatory participation ordinances, may need to be considered.

Chapter VIII

SOLID WASTE FACILITY CAPACITY

VIII.1. INTRODUCTION

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 Gilroy for the next 15 years. This Component contains a description of the permitted solid waste disposal facilities currently used by the City. 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 this SRRE Element were incorporated into the projections of the city's future disposal facility capacity needs.

VIII.2. EXISTING SOLID WASTE DISPOSAL FACILITIES

The permitted solid waste facilities that receive solid waste from Gilroy are:

1. San Martin Transfer Station and Recycling Center (14080 Llagas Avenue, in unincorporated San Martin) and;

2. Pacheco Pass Sanitary Landfill (east of Gilroy, off Pacheco Pass Highway and Bloomfield Road).

Figure II-1 in Chapter II, shows the movement of garbage coming out of Gilroy. The San Martin Transfer Station receives wastes from the unincorporated South County, the City of Morgan Hill and self-haul wastes from Gilroy. Solid wastes received at the Transfer Station are then compacted and

transferred to trailers. Thereafter, the wastes are hauled approximately ten miles to the Pacheco Pass Sanitary Landfill for disposal. The Pacheco Pass Sanitary Landfill receives compacted wastes directly from Gilroy, but does not accept public self-haul waste.

Santa Clara County. There are nine permitted landfills in operation in Santa Clara 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, Inc; Newby Island by International Disposal Corporation, a wholly-owned subsidiary of Browning Ferris Industries; Pacheco Pass by South Valley Refuse Disposal, Inc.; and Zanker Road by Zanker Road Resource Recovery, Inc. 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 for the county 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.

Owens-Corning Fiberglass Corporation owns and operates a non-permitted disposal site in northern San Jose for the disposal of wastes generated at their Santa Clara operations. The facility is not open for public use and is currently undergoing permitting procedures through the City of San Jose, LEA for the site.

VIII.2.1 The City of Gilroy

For this Component, the Pacheco Pass Sanitary Landfill is the only disposal facility that is of concern Gilroy since the Transfer Station is not a landfill. Following the description of Pacheco Pass is a summary of the remaining landfills in Santa Clara County.

Pacheco Pass Sanitary Landfill

The Pacheco Pass Landfill is owned and operated by South Valley Refuse Disposal, Inc. Opened in 1965, the site initially operated only during summer months. In 1974 after extensive site preparation, the landfill opened year-round to accommodate wastes previously disposed of at the Gilroy Landfill. The facility accepts only franchised residential and commercial and agricultural

wastes from the cities of Gilroy and Morgan Hill, and adjacent unincorporated county areas.

The 97-acre landfill is located east of Gilroy, off Pacheco Pass Highway and Bloomfield Road. The property, zoned for agriculture, is surrounded by rural agricultural land uses. Site access is provided by a 3,000 foot paved road originating at the Pacheco Pass Highway.

The Class III landfill is permitted to accept common residential and commercial garbage, rubbish, asbestos, dry cannery wastes, street refuse, brush, stumps, and demolition wastes for disposal. No hazardous or designated wastes may be accepted. According to reports submitted to the Regional Water Quality Control Board (RWQCB), the facility landfilled 81,641 tons (136,000 cubic yards) of waste in 1990. Tipping fees are $24.00 per ton (as of January 1991).

In early 1985, a 60-acre expansion into Parcel III of the site received final approval from the California Waste Management Board (CWMB). During site development, an earthquake fault was discovered and reported to the Central Coast Regional Water Quality Control Board and the State Waste Mangement Board by the site owner. In response to this discovery, 20 acres of the 60-acre expansion site were redesigned to include a composite clay and synthetic liner, and are currently being developed for future disposal use. South Valley Refuse Disposal, Inc. plans to utilize the remaining acreage for recycling and composting activities and disposal of inert materials. The company anticipates that this will help to extend the life of the fully-permitted 20 acres.

With limited expansion into Parcel III, the permitted and remaining capacity of the landfill is 2.1 million cubic yards (as of January 1, 1991) and the projected closure date is 2002. Input tonnage is converted to in-place cubic yards by using a compaction factor of 1,260 pounds per cubic yard and a refuse to cover ratio of 3 to 1. After closure, the site is proposed for agricultural uses.

A hydrogeologic report for the site was done by a consulting firm in January 1984. Operating permits issued to the site include:

- CWMB Solid Waste Facility Permit (#43-AA-0004 - June 20, 1985);
- RWQCB Waste Discharge Permit (#78-09 - September 8, 1978 and #90-34- Febrary 16, 1990;) and
- County Land Use Permit (#2102 - June 22, 1984).

Current in-place volume of solid waste is estimated to be about 1.3 million cubic yards as January, 1991.

VIII.2.2. Nearby Santa Clara County Landfills

Kirby Canyon Sanitary Landfill

Kirby Canyon Sanitary Landfill is owned and operated by Waste Management, Incorporated (WMI). WMI has secured a long-term lease from the property owner, Oceanic California, Incorporated. The 827-acre disposal site (327 acres to be used for disposal purposes), opened in July 1986. The landfill presently receives some franchised waste from the City of San Jose, and self-hauled waste from residents of Santa Clara County.

The landfill is located on a hill-face in south San Jose, east of Highway 101 at the Scheller Avenue interchange. The site is bordered by Highway 101 and the Coyote Park open space chain to the west. The land adjacent to the site is designated Non-Urban Hillside and an open space buffer surrounds the entire property. Access is provided from Scheller Avenue.

The Class III landfill accepts only garbage, rubbish, demolition, brush, and stumps for disposal. No hazardous or designated wastes may be accepted.

According to the landfill operator, the facility landfilled 91,408 tons (approximately 137,112 cubic yards) of waste in 1990. The input tonnage is converted to in-place cubic yards by using a compaction factor of 1,400 pounds per cubic yard and a refuse to cover ratio of 1.4 to 1. Tipping fees are $21.95 per ton (as of January 1991). Public disposal fees are also $21.95 per ton.

Recently, WMI executed letters of intent with several north county communities to provide long-term disposal capacity. To service these communities (the cities of Sunnyvale, Palo Alto, and Mountain View, surrounding unincorporated areas, and the unincorporated Stanford area,) WMI proposes to construct a transfer station in the city of Sunnyvale and is currently involved in negotiations with these communities.

Kirby Canyon's permitted capacity is approximately 24.3 million tons (36.4 million cubic yards). With a remaining capacity of approximately 21.75 million tons (over 32 million cubic yards,) the landfill is expected to remain in operation until at least 2016. A 13-million ton expansion of the landfill is being considered by WMI. Proposed use of the site after closure is open space.

A hydrogeologic report for the site was done by EMCON Associates in July 1983. Current operating permits include:

- CWMB Solid Waste Facility Permit (#43-AN-008 - October 31, 1984);
- RWQCB Waste Discharge Permit (#85-47 - April 30, 1985);

- City of San Jose Land Use Permit (#PD84-5-55 - August 8, 1984); and
- City of San Jose Planned Development Permit (#PD85-7-57 - September 26, 1985).

Zanker Road Disposal and Recycling Center

Zanker Road Disposal and Recycling Center is owned and operated by Zanker Road Resource Recovery, Inc., a wholly owned subsidiary of Norcal Waste Systems. Formerly known as the Nine Par Disposal Site, the facility was operated by the Nine-Par Company from 1934 to 1977. Zanker Road Resource Recovery reopened it in 1985. The facility currently serves northern San Jose and surrounding communities.

Located west of the intersection of Zanker Road and Los Esteros Road in northern San Jose, the 70-acre site is bound by a wetland habitat to the north, the Leslie Salt Company evaporation ponds to the north and west, the Artesian Slough to the northwest, the San Jose/Santa Clara Water Pollution Control Plant to the south, and sludge ponds to the east. Access is provided via Los Esteros Road.

The Class III landfill accepts rubbish, brush/stumps and demolition wastes for disposal. No garbage, hazardous, or designated wastes may be accepted, except asbestos (under certain conditions.) According to the landfill operator, the facility landfilled 158,192 tons (263,653 cubic yards) of waste in 1990. Input tonnage is converted to in-place cubic yards by using a compaction factor of 1,200 pounds per in place cubic yard and a refuse to cover ratio of 4 to 1. Public disposal fees are $3.00 to $9.00 per cubic yard with a minimum charge of $9.00.

Zanker Road Resource Recovery conducts extensive recycling activities at the site, accepting incoming recyclable materials and pulling recyclables directly from the waste stream. On average, 80 percent of the total incoming waste stream is recycled.

The present 46-acre landfill has a permitted capacity of 3.2 million cubic yards. The site has a remaining capacity of 800,000 cubic yards (as of January 1, 1991,) and is expected to remain in operation until 2000. The proposed use after closure is open space.

Hydrogeologic reports were done on the site by William C. Ellis, Consulting Geologist, in June 1975 (reviewed in August 1985,) and by Woodward-Clyde. Current operating permits include

- CWMB Solid Waste facility Permit (43-AN-007 - March 7, 1985);

- RWQCB Waste Discharge Permit (#85-132 as amended by #87-032 - May 1, 1987); and

- City of San Jose Land Use Permit (#PD87-1-7 - July 25, 1987).

VIII.3 DISPOSAL CAPACITY NEEDS PROJECTION

Assuming that additional capacity would be required, the City of Gilroy plans to pursue discussion with South Valley Refuse Disposal, Inc. (SVRD), owner of the Pacheco Pass Sanitary Landfill. If SVRD is able to expand landfill capacity past its currently planned 2002 closure date, Gilroy waste will continue to be hauled to Pacheco Pass. The Zanker Road facility would be the interim disposal site for composting and yard wastes collected in Gilroy's programs if a local compost processing site is not established or its operation is delayed.

If an expansion is not obtained, Gilroy will most likely send its waste to the Kirby Canyon facility which is the next closest landfill. The landfill is expected to remain in operation until at least 2016.

As shown in Tables VIII-1 and VIII-2, the Pacheco Pass capacity needs projection has been estimated assuming both current and increased diversion rates corresponding to the waste reduction goals outlined in Chapter X, Integration.

The disposal facility capacity needs projection provides an estimate of the disposal capacity that is needed to accommodate projected solid waste for a 15-year period commencing in 1991. Tables II-8 and II-9 in Chapter II show the projected solid waste generation, diversion and disposal for this 15 year period with both current and increased diversion rates.

The following formula was used, as required by the California Integrated Waste Management Board, to estimate the City of Gilroy's projected capacity needs over the next 15 years.

In estimating waste generation for the 15-year period, the following factors were considered:

- changes in population for Gilroy
- changes in residential, commercial, and industrial units
- import or export of solid wastes for disposal

The Annual Capacity Needs Projection Equation is:

$$\text{Annual Capacity}_{\text{Year n}} = [(G + I) - (D + TC + LF + E)]_{\text{Year n}}$$

where:

G = the amount of solid waste projected to be generated within the city boundaries of Gilroy.

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.

n = each year of a 15-year period commencing in 1991 iterative in one-year increments.

Results of the solid waste disposal facility needs projection that are shown in Tables VIII-1 and VIII-2, indicate that the City of Gilroy will not require additional disposal capacity during the 15-year planning period. This assumption is contingent upon the achievement of the AB 939 diversion goals.

According to the Santa Clara 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. Therefore, cities that do not currently have contracts to meet disposal capacity needs for the entire 15 year planning period can refer to the fact that the county as a whole has sufficient capacity, i.e. 24 years without additional diversion and 32 years with a 25 percent diversion. This statement should be followed by a description of the city's plan to obtain the additional capacity.

VIII.4 DISPOSAL FACILITY PHASE-OUT OR CLOSURE

The City's current contract with SVRD defines waste disposal requirements for the San Martin Transfer Station and the Pacheco Pass Sanitary Landfill. These agreements are shown in the Appendices Section. Together with

achievement of the projected waste diversion goals, the facilities will provide adequate disposal capacity through 2005 when the 15-year planning period expires. The City expects to be able to negotiate a new contract for this facility to include additional disposal capacity when the present contract expires in the year 2004.

Table VIII-1

PACHECO PASS LANDFILL
ANNUAL CAPACITY PROJECTION[1]

Year	Waste Diverted %	Tons Per Year[2] Generated	Diverted	Landfilled	Trans-form. (TPY)	Remaining Capacity (tons)[3]
1990	12.6	48,718	6,159	42,559	1573	661,500
1991	12.6	49,395	6,125	43,270	1573	618,230
1992	12.6	50,204	6,225	43,979	1573	574,251
1993	12.6	51,016	6,325	44,690	1573	529,561
1994	12.6	51,825	6,426	45,399	1573	484,162
1995	12.6	52,637	6,527	46,110	1573	438,052
1996	12.6	54,904	5,998	48,096	1573	389,956
1997	12.6	57,172	7,089	50,083	1573	339,873
1998	12.6	59,439	7,370	52,069	1573	287,804
1999	12.6	61,707	7,651	54,055	1573	233,749
2000	12.6	63,975	7,933	56,042	1573	177,707
2001	12.6	65,271	8,094	57,177	1573	120,530
2002	12.6	66,566	8,254	58,312	1573	62,218
2003	12.6	67,862	8,415	59,447	1573	2,771
2004	12.6	69,158	8,576	60,582	1573	-57,811
2005	12.6	70,453	8,736	61,717	1573	-119,528

Notes:
1. Based on continuity of existing diversion rate.
2. Population and Escalation Factors based on data in Table II-3.
3. Rated capacity of 2.1 million cubic yards in 1990 converted to tons at rate of 1260 lbs per cubic yard. Gilroy portion of total capacity.

Table VIII-2

PACHECO PASS LANDFILL ANNUAL CAPACITY PROJECTION ASSUMING INCREASED DIVERSION LEVEL FOR THE CITY OF GILROY

Year	Waste Diverted %	Tons Per Year[2] Generated	Diverted	Landfilled	Trans-form. (TPY)	Remaining Capacity (tons)[3]
1990	12.6	48,718	6,159	42,559	1573	661,500
1991	12.6	50,882	6,125	42,862	1573	618,638
1992	16.9	51,446	8,760	40,746	1573	577,872
1993	27.9	52,000	14,550	35,490	1573	542,402
1994	39.1	52,553	19,850	30,703	1573	511,699
1995	45.7	53,108	24,290	26,804	1573	484,895
1996	55.7	54,656	30,430	22,149	1573	462,746
1997	55.7	56,205	31,300	22,760	1573	439,986
1998	55.7	57,753	32,165	23,396	1573	416,590
1999	55.7	59,302	33,020	24,027	1573	392,563
2000	56.0	63,975	35,826	28,149	1573	364,414
2001	56.0	65,271	36,552	28,719	1573	335,695
2002	56.0	66,566	37,277	29,289	1573	306,406
2003	56.0	67,862	38,003	29,959	1573	276,447
2004	56.0	69,158	38,728	30,430	1573	246,017
2005	56.0	70,453	39,454	30,999	1573	215,018

Notes:
1. Based on continuity of existing diversion rate.
2. Population and Escalation Factors based on data in Table II-3.
3. Rated capacity of 2.1 million cubic yards in 1990 converted to tons at rate of 1260 lbs per cubic yard. Gilroy portion of total capacity.

Chapter IX
FUNDING

IX.1 INTRODUCTION

Paying for an integrated waste management program can take place through a number of different funding mechanisms. From bond revenues to direct user fees, the initial funding will contribute to probable long-term savings for the City of Gilroy.

To address funding issues, Gilroy must demonstrate in this section the following:

- Revenue Sources - existing and potential.
- Cost estimates for programs scheduled for implementationby 1995
- Evidence of sufficient funding for developing, implementing and monitoring programs which will meet waste reduction goals.
- Sources of contingency funding.

IX.2 EXISTING FUNDING

Funding for the curbside recycling program is already established. Residents currently pay $1.29 per household, per month for curbside recycling service based on a 20-year contract between South Valley Refuse Disposal (SVRD) and the City. South Valley pays an annual franchise fee to the City which amounts to 10 percent of their gross receipts. The monthly recycling collection rate is a flat surcharge applied to an individual households' garbage bill even if the residents do not participate in the curbside recycling program.

The commercial sector including business and institutional facilities do not pay for any recycling programs and if they want to recycle they must transport their own materials to the transfer station recycling center or directly to the market.

Buyback centers operate their programs solely on funds generated from the sale of processed recyclables. No outside funding in the form of grants or subsidies was found for any Gilroy recycling programs.

IX.3 POTENTIAL FUNDING

Direct and Refuse Surcharge Fees

An authorized program expansion would warrant an increase in the monthly recycling fee. Such a program could be expanded to include more materials which would also generate an increase in revenues, providing that markets for those recyclables are established.

Santa Clara County is currently consideringsetting a disposal-based fee under AB 939 regulations that could raise funds for City recycling programs.

Grants

The City can apply for grants from the Integrated Waste Management Board as well as other miscellaneous federal, state and non-profit organizations such as the U.S. Environmental Protection Agency and the state Department of Conservation's Division of Recycling.

Of particular interest are Community Development Block Grants. Under the Economic Development Allocation for the Community Development Block Grant Program, local government can receive grants from the state. Monies are then made available by the local governments for businesses to fund specific projects that could involve the use of recycled materials in a manufacturing or entrepreneurial approach. However, it must be noted that competition for grants will intensify as more jurisdictions implement waste diversion programs.

Volume-Based User Fees

The collection of recyclables could be put on a volume-based system in which fees would be spread over the entire customer base of garbage service recipients. There would be a per-can unit charge which would add incentive for residents and commercial establishments to reduce their trash and garbage costs. The incentive is more effective with a recycling program in place so residents would have an alternative way to dispose of their trash.

In addition, volume-based garbage fees place waste reduction program costs directly on the total waste generation and thereby spread the cost more equally over all generators. An example of the impact of a volume-based fee structure on the existing curbside recycling program is shown in Table IX-1 below.

Table IX-1

Volume-Based Fee Structure For Curbside Recycling

Program	Household Cost ($)	
	Monthly	Annual
Current Service[1]		
Unlimited Cans	1.29	15.48
Volume-Based Service[2]		
Single-can	0.004	0.046
Two-can	0.008	0.092
Three-can	0.016	0.184

Notes:
1. Annual cost of $145,000. charged to residential households only.
2. Annual cost charged to all waste generators (residential & commercial) in Gilroy. Based on 1990 MSW = 50,340 tons or 3,146,250 32-gallon waste units.

Loans & Financing Assistance

Under a new market development program, the California Pollution Control Financing Authority (CPCFA) is making available taxable loans for manufacturing facilities that use recycled materials. Although there are no limitations for these loans, taxable funding is limited to the useful life of the project.

IX.4 REVENUE SOURCES

Some revenue sources are described above under Potential Funding and below under Contingency Funding. In addition, revenue sources are obtained from direct sale of materials.

IX.5 CONTINGENCY FUNDING

Possible contingency funding sources are identified in this section the event that the City's funding sources do not meet program needs or if there is an unforeseen emergency. Contingency funding sources might be obtained from:

- Direct User Fees, payable by residents or commercial establishments receiving services of a particular recycling program.

- **Bonds** are a reliable source of funding to cover large capital costs of a new program's infrastructure. General Obligation Bonds requires a two-thirds legislative support by residents while

Revenue Bonds are easier for municipalities to obtain because the debt obligation is paid entirely from the revenues generated by the new facility.

- **Short-term special taxes** or advanced disposal fees on difficult-to-recycle materials such as tires or plastic packaging materials. While the City may not be able to establish taxes, it could more easily establish special user fees (product charges or advanced disposal fees) at the point of sale. These fees would be placed on certain materials or products that have been identified as difficult-to-recycle or in some other way pose a special disposal problem. As specified by law, these fees would have to be applied only to programs that are designed to alleviate the identified disposal problems.

- **Enterprise fund accounts**, which have been established in many cities to generate revenues through a charge on the trash handling process (e.g. tipping fees or household garbage rates). The account can only fund projects that are directly related to garbage handling or waste reduction efforts, and would not be part of the City's general fund.

- **Rollover of unspent funds** from the City's general account or special waste management funding accounts which can be established under the AB 939 regulations.

IX.6 IMPLEMENTATION COSTS

Costs to implement programs to meet the 25 percent diversion goal are shown in Table IX-2. These different selections as well as specific recommendations are further described in Chapter X, Integration.

Table IX-2

SRRE PROGRAM COSTS & REVENUES FOR GILROY
- SHORT TERM (1991 through 1995)-

PROGRAMS	Revenues[1]	CAPITAL COSTS[2]	YEAR IMPLEM.	ANNUAL OPERATING COSTS[3] 1991	1992	1993	1994	1995
Source Reduction								
Technical Assistance	$ 300,000	$0	7/92	(EPI)[4]				
Educational Efforts		$0	7/92					
Public Recognition and Awards		$0	7/92					
Local procurement ordinance		$0	7/92					
Recycling								
Expand curbside materials[5]	$ 3,000	$ 3,000.	3/92	$0	$0	$0	$0	$0
Expand multi-family recycling program[5]	TBD	TBD	7/92	$0	$0	$0	$0	$0
Establish collection programs for businesses			7/92	$0	$0	$0	$0	$0
Expand processing capacity	1,620,000	1,620,000	6/93-12/93	na	na	na	$ 60,000	$ 60,000
Divert inert solids to a material processor	TBD	TBD	7/93	TBD	TBD	TBD	TBD	TBD
Composting								
Establish Drop-off Center	$ 24,000	$0	1/92	$ 0	$ 6,000.	$ 6,000.	$ 6,000.	$ 6,000.
Construct composting site	500,000	$500,000.	1/92-1/93	TBD	TBD	TBD	TBD	TBD
Establish curbside collection program	235,000	$100,000.	7/93	$ 0	$ 0	$ 45,000.	$ 45,000.	$ 45,000.
Establish processed food wastes composting	320,000	$0	1/93	$ 0	$ 0	$ 80,000.	$120,000.	$ 120,000.
Special Wastes								
Tire Recovery	TBD	TBD	1/92	$ 0	$ 0	$ 0	$ 0	$ 0
Special Materials (white goods, mattresses)	$75,000	$ 0		$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000
Education and Public Information	$ 280,000		8/91	$ 40,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000
TOTAL DOLLARS:	$3,279,000[6]	2,103,000		$ 55,000	$ 81,000	$ 216,000	$ 316,000	$ 316,000

Notes: TBD: To be determined, NA = Not Applicable.

1. All revenues will be derived through a single source raised as a surcharge fee on the refuse collection charge. One exception is the revenue for the Education & Public Awareness program which will be funded as a portion of the Franchise fee collected by the City..
2. Capital Costs are for equipment acquisition and are not amortized over the term.
3. Costs are shown only for new and expanded programs identified in Chapters II through VII (Costs in 1991 dollars).
4. Operating Costs for Source Reduction programs included in Education & Public Information program.
5. Operation costs for these programs are included in current recycling surcharge fee.
6. Revenue dollar amounts are the total for capital and operation costs for the five year term.

Chapter X

PROGRAM INTEGRATION

This section describes how Gilroy will integrate solid waste management practices to achieve the diversion requirements specified in AB 939, the California Integrated Waste Management Act. First, priorities among component alternatives were determined which conform to the integrated waste management hierarchy of: 1) Source Reduction; 2) Recycling & Composting and; 3) Environmentally safe transformation and disposal. Concluding this chapter is a schedule which anticipates dates of achievement of the required solid waste diversion mandates.

The City of Gilroy currently diverts from disposal approximately 12.6 percent of the solid waste generated in the City through existing diversion programs. In addition to these programs, Gilroy has available a large number of alternative programs for reducing its wastestream. State regulations for preparation of Source Reduction and Recycling Elements (SRRE) have divided these into five broad categories:

- Source reduction
- Recycling
- Special reduction programs
- Composting
- Public education

X.1. INTEGRATED SOLID WASTE MANAGEMENT PRACTICES

This report focuses on activities and programs which are to be continued, expanded, or implemented in the City of Gilroy, and are designed to comply with the integrated waste management hierarchy established by AB 939. These programs were chosen because they are expected to provide the largest waste diversion for the least cost in the short term. A more detailed summary of these actions follow this brief outline.

Source Reduction

- Continuing and expanding current programs and starting new source reduction measures.

Recycling

- Expansion of residential curbside recycling program to include multi-family.

- Expand materials collected through residential curbside.
- Expand commercial programs to include office paper recycling, cardboard collection and glass collection at bars and restaurants.
- Expand recycling of special/other wastes including construction debris, wood waste, white goods, small appliances, and more.

Composting

- Establish green yard waste drop-off center at transfer station.
- Begin curbside collection of yard waste.
- Begin processed food waste composting, eventually including green wastes and treated sewage sludge.

X.2. COMPONENT PRIORITIES

Tables X-1 and X-2 summarize short- and medium-term program goals for Gilroy. The Tables show in tons per year and percent of waste generated in each of the three main categories: source reduction, recycling and composting. For the short-term by 1994, these programs are expected to divert 39.1 percent of the waste stream, or 19,850 tons per year. In the medium-term by end of year 1999, planned programs are expected to reach 55.7 percent diversion or 33,020 tons per year.

In developing the City of Gilroy's SRRE, priorities had to be set between components for cases with various available diversion options. Prioritizing between the specific components and programs or activities for each target material was based on several regulatory, technical, institutional, and economic considerations. These included:

- Location of the activity or program in the integrated waste management hierarchy
- Effectiveness in reducing the volume, weight, or hazard of the targeted wastes
- Consistency with existing waste management practices
- Cost effectiveness and ease of implementation

Based on these criteria, the components of Gilroy's SRRE were prioritized to effectively achieve the mandated diversion goals of 25 percent by 1995 and 50 percent by 2000.

The following summary describes specific features of each new or planned program expansion while explaining how much diversion is expected from each component. Following is an implementation schedule (Figure X-1) for each program component. General cost ranges are described in this chapter but specific costs for each program are shown in Chapter IX, Funding.

Source Reduction

The City's existing source reduction activities will be increased through consideration of a rate structure modification, economic incentives and technical assistance including to industry and consumer organizations including waste audits. A vigorous public education program will boost overall awareness of source reduction issues and the concept of reuse will be emphasized.

While these measures are difficult to quantify, source reduction activities are expected to bring up to 0.8 percent diversion by the end of the short-term planning period.

Recycling

Residential Curbside Collection. The City has an existing curbside recycling program that collects newspaper, glass, aluminum and tin cans, plastics (PET, HDPE, EPS) and used oil. Currently it is recovering over 940 tons annually which contributes about 2 percent to Gilroy's diversion goal. Its current operation costs residents $1.29 per month.

While a small portion of the city's multi-family units are currently being served, this program expands service to all multi-family units and builds the "potential" diversion rate to 2.6 percent by the end of the short-term.

Other materials could be collected as well. The existing curbside recycling program does not collect old corrugated cardboard (OCC), and would require a means of compacting the cardboard into dense bales for shipping to market. South Valley Refuse Disposal's truck, however, is designed to collect cardboard, and adding it to the regular program would not increase collection costs substantially.

If this program is implemented along with commercial collection and a baler or other processing equipment is purchased, overall program costs would be low and probably negative during times of good markets.

Recycling Centers. Currently, Gilroy is served by two buy-back recycling centers in town plus two outside the city including one at the San Martin Transfer Station. In addition, there are four certified redemption centers in shopping malls where residents can redeem their beverage containers. These centers are serving Gilroy well at this point and expansion of their numbers would be detrimental to the existing programs.

In apportioning tonnages of recyclable materials recovered by the centers located in Gilroy it was assumed all materials originated in Gilroy. The Transfer Station center total tonnage was divided in proportion to jurisdiction population.

Commercial Recycling. Combined commercial and industrial wastes account for approximately 29,000 tons per year of Gilroy's disposed waste, well over the 8816 tons per year of residential wastes disposed in Gilroy. This area shows the greatest potential for reaching the 25 percent mandated waste diversion goal by the end of 1994.

Currently, there is no regular collection of cardboard (OCC) from commercial businesses in Gilroy, although some stores recycle OCC in-house. With OCC comprising over 6 percent of commercial wastes, adding this program would target a large portion of Gilroy's waste stream.

The program is moderately easy to set up and operate using bins and a truck similar to those already in use. Because Gilroy is located far from paper dealers, the collector would need additional equipment to process the OCC for markets in San Jose or elsewhere.

Once in operation, it is expected that the "low"-cost program would recover about 1.5 percent of the total wastestream, or over 3 percent of commercial wastes.

Many communities in the Bay Area have a "bars and restaurants" glass collection program serving the business sector. Normally, special barrels or bins are provided to each establishment for color-sorted glass bottles and jars. Small crushers are also available where storage space may be a problem.

It is estimated that 0.3 percent of total wastes could be diverted with high participation in this program. Costs would be low.

Larger offices (100+ employees), generally have office paper (usually computer paper) recycling programs in place. This program would expand these efforts to smaller offices, particularly those in office buildings, and include a variety of materials; glass and cans, and a range of separated office paper grades.

Costs could be high depending upon program design, producing a relatively low diversion rate (0.2 percent) for the City, but a high rate for office wastestreams.

While the previous commercial programs combined would recover significant quantities, a regular collection system targeting at least the same recyclables as residential programs (not including yardwaste) would increase recovery rates substantially, up to 13.1 percent by the end of the short-term.

Appropriately-sized bins or barrels would be supplied to each participating business. A special truck, probably the same as the curbside vehicle, would be used for collection. However, cardboard could be collected separately, depending upon program design.

Special/Other Wastes

Disposal Site Recovery - Wood Waste. Another large portion of the wastestream is comprised of waste wood; pallets, crates and construction debris. While some of this material is currently recovered, most is still landfilled. Currently, wood waste accounts for 3,693 tons per year or 8.0 percent of all Gilroy's disposed waste.

Recovery of wood waste at the transfer station could provide up to 8.0 percent diversion at a relatively low cost, but since the wood is used as fuel, its diversion can not be counted until after the City has passed its 25 percent goal.

Disposal Site Recovery - Construction Debris. Similar to wood waste is debris from construction and demolition (C&D) activities which can be separated at the disposal site, in this case, the transfer station. C&D debris comprises 4.9 percent of the wastestream and is composed mostly of inert materials; concrete, asphalt, rock and dirt.

The amounts of C&D debris can vary seasonally and from year-to-year. With the rapid rate of growth projected in Gilroy, this material could increase in the wastestream and give this program higher impact.

These materials can be sorted and crushed for re-use in aggregate and other construction projects. Operation costs would be low-to-moderate on a per-ton basis, while producing high diversion levels for an aggressive program.

Other Programs. This category includes all existing recycling programs in the City not included above. Gilroy has two drop-off/buyback centers and many in-house recycling programs, such as OCC recycling, which are run by many grocery and department stores.

Many other recyclable materials are being recovered, or could be added to existing programs. Currently, mattresses, latex paint, and re-useable items are recovered at the transfer station. Other materials could include batteries (auto and household), a wider range of plastics, food wastes, white goods and more scrap metal.

The existing diversion rate of 7.0 percent, is probably lower than actual levels, since not all of Gilroy's businesses and institutions were surveyed. A more thorough assessment could add up to 13.0 percent more diversion, and make the addition of newer programs less urgent.

The costs for collection and processing would be low-to-high, depending on the particular material targeted and program design.

Composting

Yard Waste - Drop-Off Center at Transfer Station. A drop-off center for collection of yard wastes at the San Martin transfer station could be successful and operate at low cost if it is assumed that processing and composting costs would be included in a South County area processing facility.

Most of the material would come from local commercial landscapers and individuals (self-haul).

As shown in Table X-1, a successful yard waste drop-off center could add 1200 tons per year, or 2.3 percent diversion by the end of 1994.

Yard Waste - Curbside Collection. A program with separate collection of yardwaste would provide the single largest diversion for Gilroy residents. Yardwaste comprises 14 percent of the total City wastes, and with an aggressive program, 4.500 tons per year, or 8.6 percent diversion could be achieved.

In this program, yard waste, brush and tree trimmings, leaves and grass would be collected in a separate truck, and processed (ground and screened) for composting or mulching. The final material would be sold or given to local users as these markets are developed.

Collection costs would be moderate, about the same as current curbside costs, but processing costs for preparation and composting would likely be prohibitively high unless larger volumes from other jurisdictions can be processed in the same facility. For this reason, a regional composting facility is recommended.

Processed Food Wastes. Commercial waste from Gilroy's food processing plants accounts for 28 percent, or 12,275 tons per year of the city's

disposeed waste stream. As described in the Composting Chapter V, collecting food waste for shipment to a local or regional processing facility could result in avoided disposal costs for the generator. And a targeted compost program for food processing wastes could add an additional 6.4 percent diversion by the end of the short-term.

X.3 INTEGRATED SCHEDULE

The integrated schedule for the short-term planning period, shown in Table X-3, includes all implementation tasks described above for new and expanded programs, and identifies the agency responsible for implementation. Programs to meet waste diversion goals scheduled for the medium-term would expand from those programs initially implemented in the short-term planning period.

As shown in Table X-1, Gilroy is expected to exceed the 25 percent short-term goal, if all programs are implemented on schedule, by nearly 15 percent. Likewise, the medium-term goal of 50 percent will also be exceeded by an additional 5.7 percent of this plan's programs are implemented as described.

Table X-1

SOLID WASTE OVERVIEW FOR GILROY
- Short Term (1991-1995) -

WASTE STREAM	TONS PER YEAR					PERCENT OF WASTE GENERATED				
	1990	1991	1992	1993	1994	1990	1991	1992	1993	1994
WASTE GENERATED[1]	48,718	50,882	51,446	52,000	52,553	100	100	100	100	100
WASTE DIVERTED										
Source Reduction	317	320	340	360	400	0.6	0.6	0.7	0.7	0.8
Recycling										
Residential Curbside	940	980	1,260	1,300	1,400	1.9	1.9	2.4	2.5	2.6
Recycling Centers	1,371	1,205	1,550	1,550	1,600	2.9	2.4	3.0	3.0	3.2
Commercial Programs	3,515	3,600	4,200	4,600	6,700	7.2	7.1	8.2	8.8	12.7
Special/Other Wastes	16	20	50	100	1,050	-	-	0.1	0.2	2.0
Composting										
Transfer Station	-0-	-	1,360	1,200	1,200	-	-	2.6	2.3	2.3
Curbside Collection	-0-	-	-	2,440	4,300	-	-	-	4.8	8.2
Food Processing	-0-	-	-	3,000	3,200	-	-	-	5.7	6.0
SUB-TOTAL:	6,159	6,125	8,760	14,550	19,850	12.6	12.0	17.0	28.0	37.8
WASTE TRANSFORMED[2]	1,573	1,600	1,600	1,600	1,600	3.1	3.2	3.2	3.2	3.0
WASTE DISPOSED[3]	42,559	42,862	40,746	35,490	30,703	87.4	88.0	83.0	72.0	62.2

Notes:
1. Total municipal solid waste generated in Gilroy from Table II-7
2. Total waste quantities transformed (incinerated) are not included in total diverted quantities (see Chapter II).
3. Total waste disposed under projected diversion programs outlined in earlier chapters and summarizes in Table II-9.

Table X-2

SOLID WASTE OVERVIEW FOR GILROY
- Medium Term (1995-2000) -

WASTE STREAM	TONS PER YEAR					PERCENT OF WASTE GENERATED				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
WASTE GENERATED[1]	53,108	54,656	56,205	57,753	59,302	100	100	100	100	100
WASTE DIVERTED										
Source Reduction	420	400	450	462	475	0.8	0.8	0.8	0.8	0.8
Recycling										
Residential Curbside	1,330	1,370	1,405	1,445	1,480	2.5	2.5	2.5	2.5	2.5
Recycling Centers	1,590	1,640	1,690	1,730	1,780	3.0	3.0	3.0	3.0	3.0
Commercial Programs	7,170	7,380	7,590	7,800	8,000	13.5	13.5	13.5	13.5	13.5
Special/Other Wastes	2,020	2,080	2,135	2,190	2,250	3.8	3.8	3.8	3.8	3.8
Composting										
Transfer Station	1,220	1,260	1,290	1,330	1,360	2.3	2.3	2.3	2.3	2.3
Curbside Collection	4,360	4,500	4,830	4,970	5,100	8.2	8.6	8.6	8.6	8.6
Food Processing	6,200	11,800	12,360	12,700	13,050	11.7	22.0	22.0	22.0	22.0
SUB-TOTAL:	**24,290**	**30,430**	**31,300**	**32,165**	**33,020**	**45.7**	**55.7**	**55.7**	**55.7**	**55.7**
WASTE TRANSFORMED[2]	1,590	1,640	1,690	1,730	1,780	3.0	3.0	3.0	3.0	3.0
WASTE DISPOSED[3]	**26,804**	**22,149**	**22,760**	**23,396**	**24,027**	**54.3**	**44.3**	**44.3**	**44.3**	**44.3**

Notes:
1. Total municipal solid waste generated in Gilroy from Table II-7
2. Total waste quantities transformed (incinerated) in not included in total diverted quantities.
3. Total waste disposed under projected diversion programs shown in Chapter II.

Table X-3

SUMMARY OF PROGRAM IMPLEMENTATION TIMELINES

TASKS	DATE
Recycling Programs	
Expand curbside materials	1/1/92
Begin distributing education materials, including enforcement facts	8/92
Begin collection	9/92
Expand multi-unit service	1/1/92
Notify new customers	8/92
Distribute toter containers	9/92
Begin collection	9/92
Commercial/Industrial Collection	7/92
Develop outreach program; develop "Recycling Kit"	9/91
Develop Waste Audit program for businesses	4/92
Begin commercial cardboard collection	7/92
Begin commercial curbside collection	1/1/94
Other programs	
Expand salvage recovery at landfill	1/1/91
Develop inert solids recovery program	7/93
Initiate rate structure changes	7/92
Examine existing rate structure; develop guidelines	7/92
Meet with facility operator	7/92
Notify hauler of rate structure	8/92
Market development	1/92
Seek State assistance in market development	1/92
Develop government procurement guidelines	2/92
Publish directory of brokers and end-users of recyclable materials	9/92
Initiate "Buy Recycled" campaign	current
Source Reduction Programs	
Rate structure modifications (See *Recycling Program*)	7/92
Initiate Educational and Technical Assistance program	

Develop Source Reduction Planning program for businesses	4/92
Develop and distribute educational literature, i.e. directory of all reuse and repair businesses	8/92

Source Reduction (continued)	
Design Awards Program for City Council Adoption	2/92
Solicit nominees	2/92
First Annual Waste Reduction and Recycling Awards	4/92
Government Waste Reduction and Procurement Program	
Develop procurement guidelines and reduction policy	6/93
Implement government program	9/93
Develop annual waste quantity reporting system	12/93
Prepare program assessment report	9/94
Support State level Action	
Develop Advance Disposal Fee Resolutions	12/91
Approval by City Council to support State-level Disposal Fees	2/92
Composting Programs	
Organization	
Assign personnel for program administration	9/92
Finalize program details	12/92
Set incentives and requirements for participation	2/93
Prepare program assessment report	12/93
Collection	
Establish yard waste drop-off site at transfer station or other city site	10/92
Begin separate collection of yard waste for single-amily residences, duplexes, triplexes and mobile home parks	7/93
Encourage drop-off by commercial, industrial and multifamily dwellings	7/93
Begin processing	7/93
Marketing	

Evaluate markets	9/92
Develop procurement specifications and policies for compost products	10/92

Education and Public Information	
Develop education materials i.e. grass clipping program	2/93
Begin distribution	4/93
Establish Master Composter Program	2/93

Special Waste Program	
Reestablish "flea market" at transfer station	1/1/92
Develop tire recycling program	1/1/92
Enhance mattress and household goods collection program	1/1/93
Develop monitoring and evaluation program	1/1/92
Education and Public Information Programs	
Develop outreach program to media, school system, public to increase awareness of waste management issues	current
Sponsor logo contest for students	2/92
Develop recycling and composting exhibit	1/92
Prepare educational literature about proper disposal of household hazardous waste	1/92
Develop outreach program for business, including "Recycling Kit"	6/92
Prepare educational literature about proper disposal of special wastes	5/92
Develop educational materials for residential and multi- unit recycling programs, including enforcement facts	5/92
Prepare educational materials about backyard composting	5/92
Prepare educational materials on residential curbside collection of yard waste	4/93

Household Hazardous Waste Element

Prepared for

City of Gilroy

Public Works Department
Gilroy, California

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Chapter I

INTRODUCTION

I.1 OVERVIEW OF HOUSEHOLD HAZARDOUS WASTE PROBLEM

Hazardous substances are prevalent in modern society, not only in the commercial and industrial sectors, but in the residential sectors as well. Hazardous substances can be found throughout the home, garage, garden, and hobby shop as constituents in such products as cleaners, paints, pesticides and glue. Once these products are no longer needed by the consumer, the unused portion is considered household hazardous waste (HHW). Improper disposal of HHW can pose a risk to human health and the environment and thus requires special handling.

A substance is classified as a hazardous waste by the State Office of Toxic Substances Control, California Code of Regulations (CCR) Title 22, if it demonstrates one of the following characteristics:

- **Ignitability** - flammable (e.g., lighter fluid, spot and paint removers)
- **Corrosivity** - eats away materials and can destroy human and animal tissue by chemical action (e.g., oven and toilet bowl cleaners)
- **Reactivity** - creates an explosion or produces deadly vapors (e.g., bleach mixed with ammonia-based cleaners)
- **Toxicity** - capable of producing injury, illness, or damage to humans, domestic livestock, or wildlife through ingestion, inhalation, or absorption through any body surface (rat poison, cleaning fluids, pesticides, bleach)

Until the early 1980s, city and county-sponsored programs to properly manage HHW were virtually non-existent, thereby resulting in wastes being disposed in the garbage, down the sewer, into storm drains, or directly onto the ground. The improper disposal of hazardous wastes can result in contamination of ground and surface water and potentially hazardous leachate migration from solid waste landfills.

In response to the growing public awareness of the HHW issue, in 1986 the City of Gilroy began offering one-day collection programs for these wastes. In

1990, the City coordinated with San Martin and Morgan Hill in a joint collection day at the San Martin Transfer Station.

While the City has chosen not to participate in the development of a new, county-wide pilot HHW management effort at this time, it is currently considering becoming a participant when the program appears to be a more cost-effective program than the on-going one currently operated by the City.

I.2 HOUSEHOLD HAZARDOUS WASTE ELEMENT REQUIREMENTS

Assembly Bill 2707 requires that each city and the County for the unincorporated area characterize and quantify its HHW stream and develop plans for safe collection, recycling, treatment, and disposal of hazardous wastes generated by its households. An AB 2707 Household Hazardous Waste Element must be submitted to the County by each city and the County for the unincorporated area by July 1, 1991.

The County of Santa Clara Solid Waste Program staff anticipates that it will submit the city and unincorporated area HHW Elements to the California Integrated Waste Management Board (CIWMB) in 1994. The CIWMB will review each HHW Element no less frequently than every two years. If the Board finds that the city or county has failed to implement its Elements, the Board shall issue an order of compliance with a specific schedule for achieving compliance.

In Santa Clara County, a number of cities and the County for the unincorporated area have already agreed upon HHW management goals and have developed plans for a pilot multi-jurisdictional HHW collection and source reduction system. However, the California Integrated Waste Management Board (CIWMB) requires that each city and County for the unincorporated area provide its own AB 2707 Household Hazardous Waste Element. The CIWMB will not accept a countywide plan in place of city-specific HHW plans.

II.2.1 Background

With nearly 1.5 million residents, Santa Clara County ranks first in the Bay Area and fourth in the State in terms of population according to the Association of Bay Area Governments. The County covers 1320 square miles, making it the second largest county in the San Francisco Bay Area. It is a diverse county encompassing both highly urbanized and as well as rural/agricultural areas. The County has experienced rapid population growth since the 1950's, with corresponding growth in solid waste and household hazardous waste generation.

Located at the southern end of the San Francisco Bay, Santa Clara County has a number of landfills located in close proximity to the Bay and wetland ecosystems. This, coupled with the fact that groundwater supplies 50 percent of the drinking water in Santa Clara County, requires that special measures be taken to protect the environment and groundwater by keeping hazardous waste out of landfills.

Household hazardous waste is generated in almost all homes, and until recently, residents have not had access to proper disposal options for this waste on an ongoing basis. As a result, HHW may be improperly disposed in sanitary landfills.

Santa Clara County cities have been in the forefront in California and the nation in developing HHW management programs. Gilroy, in cooperation with Morgan Hill, San Martin and the county, have sponsored annual HHW collection events and Gilroy has curbside motor oil collection programs for residents. Some additional HHW disposal is accepted at the transfer station. Cities and non-profit organizations have developed and distributed educational materials that alert residents to the proper disposal methods for HHW and suggest alternatives to household products that generate hazardous waste.

The success of past HHW programs has resulted in an increasing demand for services. However, because of the limited number of one-or two-day HHW events available in most jurisdictions, the hazardous waste disposal needs of many County residents have not been fully met. This is an acute problem for those with immediate disposal needs, such as residents who are moving.

This increasing demand, together with raising costs of HHW collection and disposal, led a number of local jurisdictions to the conclusion that one-or two-day collection events alone do not offer a viable solution for meeting future needs. Additionally, there was a recognition that the problems associated with improper disposal of HHW are a regional issue and may require regional solutions.

The Household Hazardous Waste Working Group of the Santa Clara County Tanner Advisory Committee developed a set of goals for management of household hazardous waste in the County. The Working Group is composed of household hazardous waste program coordinators from cities; County hazardous waste, solid waste, and environmental health staff; private and solid waste contractors; and community advisory members. The Working Group developed the following HHW goals for the county as part of its role in implementing the Santa Clara County Household Hazardous Waste Management Plan as required by AB-2948 of 1986, (Tanner).

County Household Hazardous Waste Plan Goals (Tanner Plan)

- Keep household hazardous waste out of landfills; sanitary and storms sewers; and waterways
- Reduce potential adverse effects of household hazardous waste on public health and safety
- Prevent harmful exposures in the home and environment through coordinated public education
- Provide services to all residents in the county

The Working Group determined that while most jurisdictions hold one-day collection events, a number of unmet needs remain in the county.

Unmet Needs

- Access to household hazardous waste collection on an "immediate need" basis (residents who are moving or otherwise need to dispose of materials rapidly)
- Access to ongoing collection centers
- Public education materials and programs that are consistent for all jurisdictions in the county.

These conclusions are echoed in the County's Hazardous Waste Management Plan (Tanner Plan) of 1989 which states that:

> *"The County and cities shall coordinate the development of a program for the proper management and disposal of household hazardous waste on a county-wide basis in accordance with the waste management hierarchy and considering existing programs and conditions."*

Under direction of staff to the Tanner Committee, a HHW Working Group began a planning effort to examine alternative program models and determine equitable and efficient methods of county-wide service. During the planning process, the group concluded that a county-wide program might be more cost effective and provide greater access for county residents.

II.2.2 Countywide HHW Collection System

The Working Group recommended a HHW program to provide service via a mobile collection unit, with a permanent HHW facility to be added in the near future. The mobile unit will be located at neighborhood collection sites identified by the city HHW coordinators and will move to new locations throughout the county on a rotational basis. Residents of any participating jurisdiction will be eligible to use the mobile unit on an appointment-only basis at any of its scheduled stops throughout the county. However, requiring residents to make appointments prior to coming to the site places an added burden on residents who in past Gilroy programs have not had this extra step.

The mobile collection unit is expected to consist of a specially-equipped vehicle and/or trailer, a portable chain link fence for security, and canopies to protect workers from the weather. A mobile trailer may provide storage space for supplies and equipment needed to conduct the mobile collections. The mobile unit would operate on an appointment basis.

The County Division of Environmental Health Services would serve as the lead agency for the administration and implementation of the county-wide HHW program. Hazardous materials specialists and environmental health specialists would be utilized for development and initial implementation of the collection program. Health Department staff would contract for transportation and disposal of the waste in compliance with federal, state, and local regulations.

The Department of Planning and Development would serve as the lead agency for public education efforts. The Planning Department would coordinate with other agencies to maximize use of available resources and avoid duplication in the development of educational materials and programs. Educational projects will emphasize not only safe disposal practices, but also reduction in the use of potentially hazardous products.

The County is planning a permanent HHW collection site to begin operation in the near future. The permanent site would provide additional collection services and support the mobile collection program, by allowing expanded storage capabilities for more efficient consolidation of wastes prior to disposal. This may result in lower per unit disposal costs as well as additional opportunities to separate materials for reuse, treatment, or recycling. The permanent facility could also support a door-to-door HHW pickup service for elderly and disabled residents.

The county-wide pilot HHW program is scheduled to begin collection in 1991. Some participating cites may rely entirely upon the countywide program for collection of HHW. Other cities, such as Gilroy, are considering use of the county-wide program to augment their existing HHW programs -- annual drop-off events and curbside oil collection programs.

While the county-wide HHW Program would be operated as a pilot project in its first year, it is anticipated that it would continue into the short-term (1991-1995) and medium-term (1996-2000) planning periods. At the end of the first year of operation, the program will be evaluated. Participating cities will decide if and to what extent they wish to continue participation in the program.

Chapter II

PROGRAM OBJECTIVES

Improper disposal of household hazardous waste will be reduced or eliminated in the City of Gilroy in the short-term and medium-term planning periods. Generation of household hazardous waste will be reduced through source reduction efforts. Household hazardous waste generated by residents will be safely collected, recycled, treated or disposed.

II.1 SHORT-TERM OBJECTIVES (1991-1995)

The short term objectives for Gilroy are to provide residents convenient access to Household Hazardous Waste Collection Services. Specifically, actions to be continued or taken in the short-term are described in this section.

■ Expand Curbside Motor Oil Collection Program

Expand Collection. Existing curbside motor oil collection programs will be gradually expanded. Currently, single family households and some limited multi-family residences receive curbside motor oil collection. For those dwellings where collection of motor oil is not practical, special public informational efforts will notify residents of most convenient drop-off locations.

Increase Participation. In areas where participation is low, special publicity and educational efforts will be conducted to increase the percentage of residents using the curbside motor oil collection service and/or drop-off locations.

■ Minimize Disposal of Collected HHW

The disposal of collected HHW will be minimized through the distribution of reusable materials and HHW recycling activities. This can take place, when practical, by offering usable materials such as paint and automotive maintenance products to non-profit agencies, and city and county departments. Likewise, reuse tables are planned for HHW collections events to allow residents to select products for their own use.

■ Promote the Recycling of HHW

To the maximum extent possible, HHW such as paint, motor oil, and automotive batteries will be separated from incoming waste and recovered for recycling.

■ Limit Improper Disposal of Household Hazardous Waste at Solid Waste Landfills

It is important to limit improper disposal of HHW at solid waste landfills by continuing state-mandated hazardous waste exclusion programs. This is accomplished through the following measures:

Load Checking. Incoming solid waste at the San Martin Transfer Station and/or the Pacheco Pass landfill, which serve the City of Gilroy, will be monitored by load checking programs currently established and operated by the City's franchised hauler, SVRD, as required by the state Regional Water Quality Control Board. The landfill operator carries out the required sign posting, employee training and customer notification regarding the prohibition of HHW from landfill disposal.

■ Increase Efficiency and Effectiveness of HHW Collection Services and Public Education

By coordinating programs with other jurisdictions and agencies whenever feasible, the efficiency and effectiveness of HHW collection services and public education can be increased.

■ Decrease Potential Short- and Medium-term Risks by Monitoring

Short- and medium-term risks can be decreased by monitoring environmental compliance records and proof of insurance of contract waste haulers and contract treatment, storage and disposal facilities.

Environmental Compliance. The City will review the past three years' environmental compliance records of all hazardous waste contractors will be examined by the Department of Environmental Health Services.

Liability Insurance. Proof of adequate liability insurance will be required and be kept on file as part of the City's franchise agreement with SVRD. The verification of environmental compliance will be done by the Santa Clara County Department of Environmental Health Services.

■ Increase Source Reduction Options

Source reduction options for residents can be increased by supporting legislative efforts aimed at promoting the development of safer products and safer HHW management and methods.

Legislative Efforts. The City will initiate, endorse, and support efforts to require manufacturers to market less hazardous or non-hazardous products. Increased recycling options for household hazardous wastes may also be encouraged through the support of legislation.

II.2 OBJECTIVES FOR MEDIUM-TERM PLANNING PERIOD

Gilroy will continue with the objectives developed for the short-term planning period into the medium-term planning period. However, landfill disposal of household hazardous waste will be further reduced or eliminated in the City of Gilroy in the medium term planning period (1996-2000) by continuing to prioritize source reduction and recycling activities.

II.3 TARGETED AND EXCLUDED MATERIALS

Household materials that have the characteristics of hazardous waste, as defined by Section 25117 of the Health and Safety Code, have been targeted for collection by the City of Gilroy. Examples of typical materials and products found around the home are listed in Table II-1.

Several types of materials are excluded from HHW collection programs due to potential hazards to the public and collection program staff. For example, ammunition and explosives will not be accepted. Resident who request disposal services for ammunition or explosives will be referred to the police or fire department. Compressed gas cylinders; i.e., propane tanks; over 20 lbs., will not be accepted. Residents will be referred to dealers for disposal of gas cylinders.

Medical wastes will not be accepted either. Residents requesting disposal services for medical wastes will be advised of proper disposal methods for specific types of waste materials. Radioactive waste will not be accepted. Smoke alarms, the common household product containing radioactive materials, is considered "Below Regulatory Concern" and may be discarded with household solid waste.

Chapter III

EXISTING CONDITIONS DESCRIPTION

The City of Gilroy has been sponsoring Household Hazardous waste collection days continuously for the past six years. Thes HHW Days or Events have been held at the San Martin Transfer Station in cooperation with the city of Morgan Hill and Santa Clara County.

Participation in these events has been fairly regular over the years increasing about ten percent each year. On each occasion, city staff interviewed each vehicle bringing materials to the site. A record of the compilation of these interviews is included in Appendix C.

III.1 QUANTITY OF HOUSEHOLD HAZARDOUS WASTE GENERATED

The 1991 waste characterization study done at Santa Clara County landfills indicates that 48,714 tons of solid waste are generated by the City of Gilroy annually. Of this amount, 0.8 percent of the City's landfill waste stream was identified as HHW. Therefore, approximately 390 tons of HHW are being generated and 293 tons of this are being improperly disposed in the landfill annually by city residents. Approximately 97.1 tons was disposed of properly.

In 1990, 88.4 tons of HHW was collected by city-sponsored HHW collection programs and the curbside oil collection service. This includes 52.8 tons of HHW that was collected by the City-sponsored HHW collection day event. To derive these tonnages, the following conversions were used.

•1 gallon of liquid (other than oil) = 8.6 lbs. (Source: Santa Clara County Department of Weights and Measures)

•1 gallon of used motor oil = 7.6 lbs. (Sources: Santa Clara County Department of Weights and Measures, State Division of Measurement Standards, and Evergreen Oil, Inc.)

•1 automotive battery = 34 lbs. (Source: County Environmental Health)
55 gallon drum of lab-packed wastes = 20 gallons of liquid (Source: County Hazardous Waste Management Program) 1 gallon of paint weighs about 8 pounds (Source: Romic Chemical Corporation)

•55 gallon drum of consolidated oil-based paint = 55 gallons of paint (Source: Palo Alto Public Works) 1 gallon of paint weighs about 8 pounds (Source: Romic Chemical Corporation)

III.2 TYPES AND AMOUNTS OF HHW DIVERTED

The types of HHW and amounts collected by city-sponsored collection events and programs in the City of Gilroy in 1990 are shown on the CIWMB Form 303 "Household Hazardous Waste Collection Information." For this report, these figures are shown in Table III-1.

Table III-1

SUMMARY OF HOUSEHOLD HAZARDOUS WASTES COLLECTION PROGRAMS

Total Solid Waste Generated	48,714 tons
Percentage Identified as HHW	0.8 percent
Tonnage of HHW in Solid Waste Stream	390 tons
HHW Collected at drop-off day	2983 gallons 155 pounds
Used Motor Oil Collected at Curbside	27.3 tons
Amount of HHW discovered in Load Checking	na
Total HHW Diverted in 1990	**97.1 tons**

III.3 FUTURE STATUS OF EXISTING PROGRAMS

Gilroy plans to continue operation of annual drop-offs events which take place at the San Martin Transfer facility. During the 1991 drop-off day, which took place in May, approximately 400 people participated, of which an estimated 127 were from Gilroy.

Chapter IV

METHODOLOGY FOR EVALUATION OF ALTERNATIVES

The evaluation criteria used in this section are consistent with the evaluation procedure outlined in Integrated Waste Management Board's Draft Planning Guidelines for Source Reduction and Recycling Elements.

IV.1 EVALUATION CRITERIA

The following twelve criteria have been rated using scale of high, medium, and low, with high being positive. Ten alternatives for managing HHW were evaluated. The evaluation was summarized in Table V-1 which is located in the following chapter of this document.

Waste Diversion Potential

Waste diversion potential is the estimated ability of the alternative to reduce the amount of HHW improperly disposed in the landfill. Waste diversion potential measures the alternative's ability to accept, handle, recycle or properly dispose of HHW. The following list indicates the degrees of diversion:

- **Low:** The alternative has low potential to divert HHW.
- **Medium:** The alternative is likely to divert some HHW.
- **High:** The alternative is likely to divert large amounts of HHW.

Absence of Hazard

Absence of hazard reflects the extent to which hazards result from the alternative. Hazards could include health risks, injury, fire, or other.

- **Low:** Potential hazards are not completely understood, or the alternative presents potential hazards.
- **Medium:** Potential hazards are known and controllable. Some impacts remain.
- **High:** There are few or no potential hazards or unmitigated impacts.

Flexibility

Flexibility measures the adaptability to changing economic, technological, and social conditions.

- **Low:** The alternative is limited in adaptability to changing conditions.
- **Medium:** The alternative is anticipated to have a moderate adaptability to changing conditions.
- **High:** The alternative can be readily adapted to meet changing conditions.

Availability of Service (Nearby and Frequent Services)

Availability of service is a consideration of travel distance for participants and frequency of service. Optimal travel distance was determined to be no more than a 20 minute commute from residents' homes. Optimal frequency of service was determined to be at least two disposal opportunities per year within the 20 minute commute distance.

- **Low:** The alternative does not provide services within a 20 minute commute. Cost or logistical barriers make frequent service with this alternative difficult.
- **Medium:** The alternative has potential to provide disposal services within a 20 minute commute. The alternative has the potential for frequent service.
- **High:**The alternative is designed to provide disposal services within a 20 minute commute and frequent service is not hindered by cost or logistical barriers, in comparison with other alternatives.

Provides Immediate Need Disposal Services

Provides immediate need disposal service refers to the alternative ability to provide disposal services within several days of a request. Residents who are moving often request HHW disposal services. If disposal services are not available, these residents may improperly dispose of their stored HHW.

- **Low:** The alternative does not accommodate needs of residents requesting immediate disposal services.

- **Medium:** The alternative may provide some immediate need services.

- **High:** The alternative has flexibility to accommodate residents requesting immediate disposal of HHW.

Limited Shift in Waste Type Generation

Limited shift in waste type generation measures the alternative's ability to limit consequences of diversion of one material at the expense of increased generation of another material.

- **Low:** The alternative would significantly shift waste production to generation of non-recyclable, non-marketable, or more hazardous materials.

- **Medium:** The alternative would result in the creation of little shift toward non-recyclable, non-marketable, or more hazardous wastes.

- **High:** The alternative would result in no shift toward non-recyclable, non-marketable, or more hazardous wastes.

Ease of Implementation

Ease of implementation measures the speed with which the alternative can be brought into service, i.e., whether it can be implemented in the short-term or medium-term planning periods.

- **Low:** Implementation of the alternative could not be completed until after 2000.

- **Medium:** Implementation of the alternative is anticipated to be completed between 1995 and 2000. This is the medium-term planning period.

- **High:** Implementation of the alternative is anticipated to be completed by 1995. This is the short-term planning period.

Facility Need

Facility need measures the need to expand existing facilities or build new facilities to support the implementation of the alternative.

- **Low:** New facilities must be developed to accommodate the alternative.

- **Medium:** Existing facilities must be expanded or altered to accommodate the alternative.

- **High:** The alternative requires no new facilities or modification of facilities.

Consistency with Local Policies

Consistency with local policies measures the alternative's compatibility with existing local plans, policies, and ordinances.

- **Low:** The alternative would require major changes to existing local plans, policies, or ordinances.

- **Medium:** The alternative would require minor changes to existing local plans, policies, or ordinances.

- **High:** There are no existing local plans, policies of ordinances that would impede the implementation of the alternative.

Absence of Institutional Barriers

Absence of institutional barriers evaluates the extent to which institutional barriers, such as long-term franchise agreements or other contracts, or other barriers, may impact local implementation of the alternative.

- **Low:** The alternative is impacted by existing institutional barriers which are not under the control of the jurisdiction.

- **Medium:** The alternative is impacted by existing institutional barriers over which the jurisdiction maintains some control.

- **High:** There are no existing institutional barriers to the alternative.

Estimated Cost

Estimated cost evaluates the projected cost of the alternative, including capital costs and operating costs for the short-term and medium-term planning period.

End Uses (Recyclability and Redistribution Potential)

End uses measures the recycling or reuse potential of collected HHW products.

- **Low:** Recycling or redistribution activities are incompatible with the alternative.
- **Medium:** The alternative might allow for recycling/redistribution.
- **High:** Recycling or redistribution activities are compatible with the alternative.

Chapter V

EVALUATION OF HHW ALTERNATIVES

This section presents an evaluation of alternatives that were considered by the city of Gilroy to meet its HHW management objectives, using the criteria described above in Chapter IV. The following six alternatives were evaluated. The results of the evaluation are summarized in Table V.1.

Periodic HHW Drop-off Events
Combination: Mobile Unit Plus One Permanent Facility
Curbside Motor Oil Collection
Door-to-Door Pickup for Elderly & Disabled Residents
Household Hazardous Waste Recycling Component
Household Hazardous Waste Exchange

Other alternatives were considered, but they were not included in the evaluation process because they were found to be inappropriate for the city and/or were cost-prohibitive at this time. These alternatives included location of five permanent HHW sites; a mobile collection system; and a separate load-checking program which is already operating under the control of the County.

An additional method of HHW management was considered: curbside HHW collection. This method was not included in the *Evaluation of Alternatives* process due to unacceptably high potential public health risks. HHW set at the curbside could be blown over or rained upon, resulting in toxic run-off into the storm drain system. Children or pets could tamper with materials left at the curb, and waste haulers could be harmed if residents set out unacceptable types or amounts of wastes.

Curbside HHW collection programs that accept all types of HHW have not been implemented in California. Unlike programs that collect motor oil at the curb, it is not known if permits could be obtained to collect all types of HHW in this manner. The permitting process for curbside HHW collection was not explored as the alternative was deemed unfeasible due to potential health and safety hazards.

V.1 - PERIODIC DROP-OFF EVENTS

The City of Gilroy has co-sponsored periodic drop-off events since 1986 with the city of Morgan Hill and the County. These events have been scheduled annually at the San Martin Transfer Facility and had the participation of over 400 households in 1990. An estimated 127 of those households came from Gilroy based on the results of visitor surveys conducted at the site.

In the future, the City is planning multi-day events with two separate collection days being planned for 1992.

- **Waste Diversion Potential.** Periodic events have proven to be effective in collecting large amounts of HHW. The City of Gilroy rated the waste diversion potential of periodic drop-off events as "high".

- **Absence of Hazard.** Potential public health risks and safety hazards associated with any HHW collection method include spills, fires, leaks, or explosions resulting from improper collection, storage, handling, or transport of hazardous material. However, proper design, equipment, and health and safety training minimize potential hazards. Periodic drop-off events were rated as "medium" in absence of hazard.

- **Flexibility.** Periodic drop-off events have a limited ability to respond to unanticipated conditions, such as an unexpectedly high turn-out. On the other hand, periodic events are flexible in the sense that, if funding permits, a city can decide to hold more frequent events to accommodate high demand in a safer, more orderly manner. A "medium" rating was assigned.

- **Availability of Service.** Availability of service refers to the alternative's ability to provide HHW disposal services within a 20 minute commute of residents' homes and at optimally, four times per year. The periodic drop-off event alternative was rated "medium" as these events are generally held in one centralized location and only one or two times per year. However, additional events and event locations could be added.

- **Provides Immediate Need Services.** Periodic drop-off events have generally operated one or two days per year, although the possibility exists to hold such events more frequently. The periodic drop-off event alternative was rated "low" in its ability to provide immediate need disposal services.

Table V-1

EVALUATION OF HHW MANAGEMENT ALTERNATIVES

	Drop-Off Events	County-wide Program	Curbside Motor Oil Collection	Door-to-Door Eld./ Disabled	HHW Recycling Component
Waste Diversion Potential	High	High	High	High	High
Absense of Hazard	Medium	High/Med.	Medium	Medium	Medium
Flexibility	Medium	High	High	High	High
Availability of Service	Medium	High	High	Medium	High
Provides Immediate Need Svcs.	Low	High	High	Medium	High
Limited Shift in Waste Type Production	N/A	N/A	N/A	N/A	N/A
Ease of Implementation	High	High	High	High	High
Facility Needs	High	Medium	High	Medium	High
Consistent With Local Policies	Medium	Medium	High	High	High
Absense of Institutional Barriers	High	High	High	High	High
Estimated Cost	$90-110 per car	$90-110 per car	Low	$40 per household	N/A
End Uses	Medium	High	High	Medium	High

Note: N/A = Not Applicable

- **Ease of Implementation.** The city of Gilroy has sponsored six periodic drop-off events and is familiar with the planning and implementation procedures. Should the City decide to continue operation of periodic drop-off events, it is anticipated that such events could be implemented within the short-term planning period (before 1995). Ease of implementation was therefore rated "high".

- **Ease of Implementation.** The city of Gilroy has sponsored six periodic drop-off events and is familiar with the planning and implementation procedures. Should the City decide to continue operation of periodic drop-off events, it is anticipated that such events could be implemented within the short-term planning period (before 1995). Ease of implementation was therefore rated "high".

- **Facility Needs.** Periodic drop-off events do not require expansion or development of facilities and were rated "high."

- **Consistency with Local Policies.** Gilroy has sponsored annual HHW drop-off days since 1986, indicating that this alternative is consistent with local policies and ordinances. However, the periodic events do not meet the needs of residents requesting immediate disposal services or provide ongoing collection services as recommended in the County Hazardous Waste Management (Tanner) Plan. A "medium" rating was assigned.

- **Absence of Institutional Barriers.** No institutional barriers, such as existing contracts, would impede the City of Gilroy in implementing periodic drop-off events. A "high" rating was assigned.

- **Estimated Cost.** In calendar year 1990, the City of Gilroy spent $ 7,350 to operate one HHW collection day event. This amount includes the contractor's fee for management of the events and disposal of collected waste. Additional costs for the program are city planning time, advertising, donated equipment, and volunteer labor. A total of 127 Gilroy households were served in 1990.

  A preliminary cost analysis of past periodic events throughout the county indicates considerable variation in cost between city events. Factors contributing to the cost variations include amount of volunteer labor and other donated services used to plan and operate the events.

- **End Uses.** Periodic collection events divert latex paint, oil, and automotive batteries from landfill disposal for recycling. However, lacking storage space and permits to store materials, periodic events are limited in their ability to promote redistribution of usable products. A "medium" rating was assigned.

V.2 - PARTICIPATION IN COUNTY-WIDE PROGRAM

The county-wide program consists of a mobile unit plus one permanent facility. The permanent facility would be located in a densely-populated urban area outside of Gilroy, and the mobile unit would operate in the cities and unincorporated area throughout the county on a rotating basis. The number of vehicles served will be adjusted as needed in response to demand for services and availability of funds.

The City of Gilroy adopted a Resolution supporting the development of a county-wide household hazardous waste program (Resolution No. 89 - 37 in Appendix D) in July, 1989. While the City supports the concept of the county-wide program, it does have some reservations about its implementation.

The City's role in this program will largely depend upon whether the City's costs for participation exceed those that would be incurred in its Periodic Events program described in the first alternative. At a point where the total program costs as well as level of service are about equal, the City plans to move to this alternative in lieu of its periodic events program.

- **Waste Diversion Potential.** The mobile unit plus permanent facility alternative could provide convenient, cost-effective service to both a densely populated area and large geographical region. A "high" rating was assigned to the alternative.

- **Absence of Hazard.** The mobile unit involves more movement of equipment and materials than the permanent facility. The majority of collected HHW would be removed directly from the mobile unit by licensed waste haulers. To minimize waste disposal costs, partially-filled lab packed drums might be delivered to the permanent facility to await additional waste. Proper equipment, training, and operating procedures would minimize the potential hazards. A "medium/high" rating was assigned to the combination mobile plus one permanent facility alternative.

- **Flexibility.** Depending on demand for services, days of operation of the mobile unit and permanent facility can be adjusted. The mobile unit's schedule can be modified to include additional locations as needed. A special effort to notify residents of changing location would be necessary. In addition, multi-lingual advertising and telephone appointment services may be necessary. This alternative received a "high" rating in its ability to respond to changing social conditions.

- **Availability of Service.** This alternative will provide HHW disposal services within a 20 minutes commute for most residents in the participating cities. Depending on demand for services, frequency of both of these collection services can be expanded in the short- and medium-term planning period. A "high" rating was assigned to this alternative.

- **Provides Immediate Need Services.** A "high" rating was assigned, as residents from any of the participating cities could be able to deliver HHW, by appointment, to the next operating day of either the permanent facility or the mobile unit.

- **Ease of Implementation.** It appears likely that a mobile program could be permitted by the Department of Health Services under the Permit By Rule regulations for "temporary events". The Permit By Rule regulations are currently under development by the Department of Health Services and are expected to be finalized in mid-1991. Therefore, it is likely that a mobile program could be implemented in the short-term planning period (before 1995). A "high" rating was assigned to the mobile collection alternative.

  The implementation phase for a permanent facility includes site selection, environmental review, permitting, Board of Supervisors' approval, and possibly, facility construction or modification of existing structures. Regulations for siting permanent HHW facilities are under development by the California Department of Health Services and are expected to be in place by late 1991. In addition, the siting of a permanent facility may be subject to the Tanner Plan review process. It appears likely that one permanent facility could be operational before the end of the short-term planning period (before 1995). A "high" rating was assigned.

- **Facility Needs.** The mobile collection unit requires a waste collection and storage equipment. However, no purchase of land or construction of facilities is required. The permanent facility will require either location of appropriate site for storage roll-off bins or the construction or modification of a collection and storage structure.

  A "medium" rating was assigned to the combination mobile unit plus one permanent facility alternative.

- **Consistent with Local Policies.** County-wide planning efforts have determined that the combination of a mobile unit and a

permanent facility for HHW collection appears to be the alternative that best meets the needs of the participating cities. This alternative appears to be consistent with the Tanner Plan recommendations for ongoing, convenient, and immediate need services.

The mobile collection unit requires siting a number of temporary locations and the process of siting a permanent facility may be complex. A "medium" rating was assigned to the combination alternative.

- **Absence of Institutional Barriers.** No institutional barriers are known that would prevent the implementation of the combination alternative. A rating of "high" was assigned.

- **Estimated Cost.** A preliminary cost analysis for this alternative indicates that this alternative might be implemented at a cost similar to the cost of the periodic events alternative.

  A preliminary cost analysis for a permanent facility indicates that the cost of this alternative is dependent, to a large extent, on two factors; availability of sites and facility design.

  If an appropriate site could be located that did not require purchase of land, the cost of this alternative would be significantly lower. It might be possible to site a permanent HHW facility an existing landfill, wastewater treatment plant, or public works facility. However, if siting a permanent facility requires the purchase of property, or if residents opposed the siting of a facility, a significant increase in cost would result.

  The second factor that would affect the cost is the actual design of the facility. A range of options exists for structural design and equipment for permanent HHW facilities. These factors would influence cost of implementing this alternative.

  It was estimated that it might be possible to implement this alternative at a cost similar to costs for the other HHW collection alternatives under consideration. Costs of all options are driven primarily by siting, waste disposal, event staffing , and capital expenditures. It was estimated that the cost-per-vehicle service would be within the $90 - $110 range. However, the unknown factors regarding facility siting and design could significantly change this estimate.

- **End Uses.** The permanent facility has the potential of facilitating waste exchange activities due to its ability to store valuable products found in the waste stream. The mobile unit has a similar redistribution potential but lacks storage capability of the permanent facility. A "high" rating was assigned to the combination alternative.

V.3 -CURBSIDE MOTOR OIL COLLECTION

The city of Gilroy sponsors curbside pick-up of used motor oil. Used motor oil is often disposed into storm sewers, drains, into the trash or onto the ground by residents who service their own cars. Therefore, motor oil collection is an effective means of reducing improper disposal of one type of HHW.

- **Waste Diversion Potential.** The city's existing curbside oil collection program serves over 7,000 households and is planned to expand to include both single and multi-family dwellings in the future. Curbside motor oil collection was rated "high" in waste diversion potential.

- **Absence of Hazard.** The potential exists that oil set on the curb for collection could be disturbed by children, pets, or vehicles. However, residents generally use the curbside oil collection program as directed and existing programs experience minimal problems. Curbside motor oil collection was rated "medium" for absence of hazard.

- **Flexibility.** The curbside oil collection alternative can meet growing demand by expanding into previously unserved neighborhoods and multi-family dwellings. Curbside motor oil collection was rated "high" in flexibility.

- **Availability of Service.** This alternative requires no travel to a disposal event. In addition, the frequency of service can be adjusted to meet residents needs. Curbside motor oil collection was rated "high" for availability of service.

- **Provides Immediate Need Services.** Curbside motor oil collection programs generally provide weekly service, thereby providing disposal services to residents preparing to move or otherwise in need of immediate disposal. A "high" rating was assigned.

- **Ease of Implementation.** The city of Gilroy already sponsors a curbside collection program. Therefore this HHW management alternative was rate "high."

- **Facility Needs.** Existing recycling trucks used for curbside collection of glass, paper, and metals also collect used motor oil. Expansion of the curbside motor oil collection service in the city of Gilroy would require no additional oil tanks. This HHW management alternative was rated "high" as it does not require additional facilities.

- **Consistency with Local Policies.** Curbside motor oil collection is consistent with local and state policies that encourage HHW recycling. Effective January 1, 1991, pursuant to AB 2597, HHW collection agencies will no longer need a hazardous waste permit if materials accepted are limited to latex paint, used oil, antifreeze, spent lead-acid batteries, and nickel-cadmium, alkaline, carbon-zinc and other small batteries.

  Section 25250.11(a), Health and Safety Code, exempts from its HW permit requirements "any person who receives used oil from consumers or other used oil generator," as long as no more than 20 gallons of used oil are received at a time, and containers hold no more that 5 gallons each.

  Government Code Section 66798.9 (Statute, 1989) provides immunity for local agencies operating HHW programs unless the agencies act negligently Additional immunity from state liability is provided in Health and Safety Code, Section 25366.5 for local governments or their contractors who are running HHW facilities and events. However, HHW programs would still be liable if disposal sites holding the program's HHW were declared a federal Superfund site. A "high" rating was assigned.

- **Absence of Institutional Barriers.** There are no long-term contracts or franchise agreements that could impact plans to implement, continue or expand curbside oil collection.

- **End Uses.** Markets for used motor oil are well-established. A couple of companies such as Evergreen, re-refine the oil and then sells it for use again as a lubricating oil. Used motor oil collection received a "high" rating for recyclability.

V.4 - DOOR-TO-DOOR PICK-UP

A door-to-door pickup program would provide HHW services to residents unable to participate in collection events. Door-to-door pickup would be available by appointment only and the service dates could be coordinated with upcoming mobile unit or periodic events; or a permanent facility in the area.

The HHW would be picked up by a registered hazardous waste hauler using licensed hazardous waste transport vehicles that comply with the Department of Transportation (DOT) regulations. HHW collected from residents homes would be transferred to a permanent HHW facility if the facility was permitted to receive such wastes; to an approved treatment, storage, or disposal (TSD) facility; or transported directly to a permitted hazardous waste disposal facility.

- **Waste Diversion Potential.** A door-to-door HHW pickup service is designed to collect wastes from individuals who may otherwise not have to opportunity to properly dispose of their HHW. This target population, the elderly and disabled unable to participate in other HHW services, represents a relatively small percentage of households in the City of Gilroy. A "high" rating was assigned to this alternative for its potential to divert HHW from this target population.

- **Absence of Hazard.** Proper program design, equipment, and health and safety training can minimize potential hazards associated with door-to-door HHW pickup. A "medium" rating was assigned.

- **Flexibility.** Door-to-door collection services could be operated as an adjunct to periodic events, mobile unit or permanent facility. The service would operate on an appointment basis. The door-to-door service routing plan can be coordinated with other HHW events. A "high" rating for flexibility was assigned to this alternative as it operation schedule and route can be readily modified.

- **Availability of Service.** The door-to-door HHW pickup service would require no travel for elderly or disabled residents. The frequency of service would be determined by frequency of other HHW events in the area as this service would most likely operate as an adjunct to other HHW collection services. Frequency of service is also dependent upon the level of funding available. A "medium" rating was assigned to this alternative as costs for door-to-door services may be a serious limiting factor for frequency of service.

- **Provides Immediate Need Services.** The door-to-door HHW pickup service is designed to operate on an appointment-only basis due to the cost of providing this service to a small number of residents. If the door-to-door HHW pickup service is operating as an adjunct to a permanent facility, with permanent staff, equipment, and storage space, the potential exists to provide immediate need services to elderly and disabled residents. A "medium" rating was assigned.

- **Ease of Implementation.** If a door-to-door service operated in conjunction with a permanent facility, the permanent facility would need a variance to accept waste collected by door-to-door service. Collected HHW was delivered to the permanent facility could be sorted and stored to enhance recycling and reuse potential. In addition, waste could be bulked to reduce disposal costs. Another method of providing door-to-door service would be to contract with a licensed hazardous waste management company which would transport collected HHW directly to a disposal facility.

  It is anticipated that a door-to-door HHW pickup services could be implemented in the short-term planning period (before 1995), either as an adjunct to other HHW collection services or by contracting for services of a private hazardous waste disposal company. A "high" rating was assigned to this alternative.

- **Facility Needs.** Door-to-door HHW pickup services require trucks equipped to transport, handle, sort, and store hazardous materials. Space is also needed to store the collected materials unless the wastes are delivered directly to a disposal facility. It is possible that this service could be obtain on a contract basis from a licensed hazardous waste management company. A "medium" rating was assigned.

- **Consistency with Local Policies.** Door-to-door HHW collection does not appear to be incompatible with local policies. The City of Gilroy supports the provision of services to its residents regardless of handicap or physical limitation. A "high" rating was assigned.

- **Absence of Institutional Barriers.** The are no existing contracts or agreements that would prevent the implementation of a door-to-door HHW pickup service for elderly and disabled residents. A "high" rating was assigned.

- **Estimated Cost.** Door-to-door HHW pickup services have been sponsored by the cities of Burbank and San Diego. In Burbank, a licensed private waste hauler collected HHW from approximately 200 elderly and disabled residents. The service was operated in conjunction with a city-sponsored HHW drop-off event. The routing schedule was prepared by city staff. The collected HHW was delivered to the drop-off event. The cost for this service was $8,000. This cost includes only the actual collection of the HHW from the elderly and disabled residents, and does not include planning time or waste disposal costs which were included with the costs of operating the drop-off event.

- **Potential End Uses.** Recyclability and redistribution potential of HHW collected in a door-to-door service would depend on whether or not the service was associated with other HHW collection programs. If collected HHW was delivered to a permanent facility, recyclable and reusable materials could be retrieved. However, if the door-to-door service was operated independent of other HHW programs, the collected wastes were delivered directly to a hazardous waste disposal facility and all wastes would be disposed. A "medium" rating was assigned to this alternative.

V.5 - HHW RECYCLING PROGRAM

A HHW Recycling Program would implement recycling procedures at all HHW collection events. Oil, auto batteries and latex paint are currently recyclable. Solvent and antifreeze recycling may be implemented in the future.

- **Waste Diversion Potential.** Markets are already established for waste oil, auto batteries, and latex paint. Strong community support exists for the concept of recycling. HHW recycling diverts wastes from both solid waste landfills and hazardous waste landfills. Therefore, the waste diversion potential of the HHW recycling component is rated "high."

- **Absence of Hazard.** Some hazards are associated with collection and handling of latex paint. Latex paint that has been stored for many years may contain mercury and/or lead. Older latex paint, improperly labeled paint, paint not in its original container, and possibly contaminated paint should be disposed instead of recycled. Collection of used auto batteries may present hazards if batteries are cracked and leaking. Oil collection presents hazards of accidental spillage or exposure in a curbside

collection program. However, recycling program for latex paint, motor oil and auto batteries are well-established in some Santa Clara County communities and have operated safely. Proper staff training and operating procedures can reduce potential hazards. A "medium" rating was assigned.

- **Flexibility.** As more residents use the HHW programs, additional collection opportunities and HHW handling space might be required. This alternative was rated "high" in flexibility. Increasing amounts of recyclable materials can be accommodated without major changes in the program.

- **Availability of Service.** The HHW recycling component could be incorporated into mobile collection and/or the permanent facility. A "high" rating was assigned.

- **Provides Immediate Need Services.** Recyclable HHW can be accepted at a mobile unit and/or permanent facility, both of which are able to accommodate residents requesting immediate HHW disposal service. A "high" rating was assigned.

- **Ease of Implementation.** Recycling of oil, auto batteries, and latex paint are well-established components of city-sponsored programs and will also be incorporated into the Countywide HHW Program. No obstacles are known that would hinder the continuation of existing HHW recycling programs or implementation of new recycling procedures. The HHW recycling component alternative was rated "high."

- **Facility Needs.** A "high" rating was assigned, as no additional facilities are required to operate the recycling component of a HHW collection program.

- **Consistency with Local Policies.** The City of Gilroy encourages recycling of solid and hazardous waste. The County Hazardous Waste Management (Tanner) Plan ascribes to the waste management hierarchy in which recycling is the most desirable management option. In addition, state regulations encourage the collection and recycling of latex paint, used oil, antifreeze, and lead-acid batteries. HHW recycling was therefore rated "high" in consistency with local policies.

- **Absence of Institutional Barriers.** There are no known long-term contracts or franchise agreements that would interfere with recycling of HHW. A "high" rating was assigned.

- **Estimated Cost.** The cost for recycling will be available from the County Solid Waste Program. The City will only implement this program when the proper arrangements have been made with the County to finance the recycling efforts.

- **Potential End Uses.** A "high" rating was assigned, as recycling options for motor oil, automotive batteries, and latex paint are well-established. Common uses of recyclable HHW include the following:

- **Latex paint** can be collected, sorted, consolidated, blended, repackaged, and sold or given to local public agencies and nonprofit groups. It is commonly used to cover graffiti. It can also be sent to a paint company to be re-manufactured.

- **Used motor oil** is a valuable resource. Recycling used oil saves energy and natural resources. Used oil can be refined into lubricating oil, reused as motor oil, or reprocessed and used as fuel in industrial burners and boilers. The Environmental Protection Agency estimates that only 1 gallon of used oil is needed to make 2.5 quarts of lubricating oil, compared to 42 gallons of raw crude oil.

- **Lead-acid batteries** - According to the CIWMB, 70 percent of spent lead-acid batteries are recycled nationwide. In California, state law requires retailers to accept trade-in of used batteries. Consumers can also delivers batteries to lead-acid battery recyclers or to HHW programs. The average lead-acid battery contains 17.5 pounds of lead and 1.5 pounds of sulfuric acid. After the lead is separated from the non-metallic components of the battery, it is than smelted to produce soft lead and lead alloys. The non-metallic materials include sulfuric acid, which is neutralized and released into the sewer; and other non-recyclable, non-hazardous materials are disposed.

- **Small Household Batteries** - Recycling options for small household batteries are very limited at this time. Silver oxide button batteries may be recycled, but substantial obstacles exist to collecting and sorting these batteries. Consumer nickel cadmium battery recycling may be available in the near future. Recycling options for small household batteries are currently under study by the CIWMB. Results of this study and related research will be monitored and resulting recommendations will be considered for implementation.

- **Antifreeze** - Used antifreeze can be recycled for use by the mining and glycol industries. Antifreeze is sprayed on coal to inhibit sticking. Antifreeze can also be used for airplane de-icing solution, cement grinding and brake fluid.

V.6 - HHW WASTE EXCHANGE PROGRAM

A waste exchange program recovers valuable materials from the HHW waste stream and makes these materials available for use. The County Division of Environmental Health Services estimates that approximately 5 percent of incoming waste can be diverted for use. Waste exchange activities can take place at period events, mobile collection units, and permanent facilities. A permanent facility allows for storage of valuable products thereby enhancing waste exchange activities.

- **Waste Diversion Potential.** Usable materials can be diverted from disposal and made available to participating residents, voluntary organizations and public agencies. A HHW waste exchange program has a "high" waste diversion potential in that a high percentage of usable materials found in the incoming waste stream could be diverted from disposal by this program.

- **Absence of Hazard.** Waste exchange takes place under the supervision of HHW program staff, thereby limiting hazard. However, care must be taken that outdated or contaminated products are not redistributed. In addition, residents should be required to sign a waiver of liability before accepting reusable products. Waste exchange was rated "medium" in absence of hazard.

- **Flexibility.** A HHW waste exchange component can be implemented or eliminated depending on available space, staff, and demand. Waste exchange was rated "high" in flexibility.

- **Availability of Service.** The HHW waste exchange activities can be added to periodic events, mobile collection or a permanent facility. A "high" rating was assigned.

- **Ease of Implementation.** A HHW waste exchange component involves examination of incoming waste and segregation of usable materials for distribution to residents or public agencies. The implementation of waste exchange activities is tied to the operation of periodic, mobile, or permanent facility, all of which can implemented in the short-term planning period (before 1995). A "high" rating was assigned.

- **Facility Needs.** No new facilities would be required to implement a HHW waste exchange component. However, the ability to store valuable products between events at the permanent facility will increase the program's ability to redistribute valuable products. A "high" rating was assigned.

- **Absence of Institutional Barriers.** There are no known institutional barriers, such as contracts or franchise agreements, that would interfere with implementation of a waste exchange activities as a component of HHW collection programs. A "high" rating was assigned.

- **Estimated Cost.** Waste exchange activities are not expected to add to the cost of HHW collection. In fact, this alternative has the potential to reduce waste disposal costs by distributing valuable products to residents and agencies.

- **End Uses.** A HHW waste exchange component was rated "high" in recyclability/redistribution potential as the purpose of this component is to redistribution of usable products.

Chapter VI

SELECTION OF HHW PROGRAM

VI.1 ALTERNATIVES SELECTED

The selection of HHW management alternatives was based on the evaluation described above in Chapter V and summarized in Table V.1. as well as the results of the solid waste generation study.

VI.1.1 Short-Term Planning Period

The following alternatives were selected to properly manage HHW during the short-term planning period (1991-1995) in the City of Gilroy.

Periodic Drop-off Days
Participate in County Programs
Curbside Motor Oil Collection
Household Hazardous Waste Recycling

Periodic Drop-off Days. Gilroy will continue to hold periodic household hazardous waste drop-off days at the San Martin Transfer Station for city residents. This alternative provides convenient, cost-effective service since it is operated within a 25 minute commute of most residents in Gilroy. Residents requesting disposal during other times of the year will be referred to the permanent facility at the transfer station as well, since it regularly takes a wide range of HHW materials. If the materials requested for disposal are beyond the scope of the permanent facility, the resident will be asked to wait until the annual drop-off day.

County -wide Program. Representatives from all cities and the County participated in the Household Hazardous Materials Working Group planning process which developed the countywide HHW program. The program has been reviewed and endorsed by the Solid Waste Technical Advisory Committee (TAC), the Inter-governmental Council (IGC) Solid Waste Committees, and the IGC. County departments have received the approval to administer the program from the Board of Supervisors on 2/26/91. The Board Transmittal authorizing the program is included as Attachment 3.

The City already coordinates its HHW drop-off day events with Morgan Hill, San Martin and Santa Clara County. These efforts are planned to continue in the future and expand when all jurisdictions are able to develop a countywide cooperative program.

Curbside Motor Oil. Curbside motor oil collection, was selected due to its potential to divert large quantities of one of the most prevalent types of HHW. This alternative does not require the development of a new program, rather, Gilroy's existing program will be continued and expanded. Multi-family households will be serviced and a more extensive public education campaign will raise public awareness and participation in the service.

HHW Recycling. The HHW recycling component, was selected for inclusion in the periodic drop-off facility already in place for Gilroy residents. Materials such as latex paint, motor oil, and automotive batteries can be easily separated from the incoming HHW and sent for recycling instead of disposal. The recycling component has the potential of reducing the costs of the HHW collection program as there will be a reduction in the amount of HHW sent for more expensive hazardous waste disposal. Recyclable HHW materials will be sent only to permitted facilities and environmental compliance records will be maintained on file for all waste haulers and treatment, storage, and disposal companies.

VI.1.2 Medium-Term Planning Period

The following programs were selected to manage HHW during the medium-term planning period (1995-2000).

Periodic Drop-off Days
Participate in County Programs
Curbside Motor Oil Collection
Household Hazardous Waste Recycling

All of the alternatives chosen for the short-term planning period will be continued into the medium-term planning period. Additional source reduction options will be explored in the medium-term planning period.

VI.2 TYPES AND QUANTITIES OF HHW ANTICIPATED TO BE COLLECTED, RECYCLED, AND/OR DISPOSED

The amount of HHW to be collected, recycled or disposed from 1991 to 2000 in the City of Gilroy is dependent on several factors: convenience, accessibility, and efficiency of the collection services; funding available to operate the services, and the success of source reduction efforts. It is anticipated that demand for HHW services will grow as more residents become aware of proper disposal procedures and as the population of the city increases. At the same time, public education efforts should result in changes in buying habits that result in a decrease in HHW generation. Using 1990 as the baseline year, the

City anticipates that implementation of the programs described in this element will result in annually increasing diversion of HHW from the municipal waste stream in the City of Gilroy.

Each year, the city will evaluate participation rates and demand for services. In addition, the amount of HHW diverted and the amount of HHW remaining in the municipal waste stream will be monitored periodically by waste characterization studies. Based on these evaluations, additional HHW services may be provided as funds become available. Potential sources of additional funds include surcharges on garbage collection fees and advanced disposal fees added to product purchase prices.

At present, it is not possible to determine the amount of HHW that will be diverted by source reduction education efforts. Methods for evaluating the success of source reduction activities are currently under development. Possible methods include monitoring of changes in purchasing habits using industry marketing data; random telephone surveys; and questionnaires at collection events. Programs should not be evaluated using only self-reported data from surveys. Survey results can be easily biased by the wording of the questions, respondents' inability to recall details about past purchasing habits, and a tendency to report the desired behavior. The linguistic and cultural diversity of the community would further complicate use of survey tools to accurately measure source reduction.

The City intends to support legislative efforts, as described in the County Hazardous Waste Management (Tanner) Plan, to encourage the development of less- or non-hazardous products. As such products become available to replace currently marketed products that generate HHW, it may be possible to quantify the resulting reduction in HHW generation for specific products or materials.

VI.3 FACILITIES NEEDED FOR IMPLEMENTATION

The permanent facility could be a lower-cost operation utilizing roll-off bins, fencing, and spill/run-off containment structures. Other options include the used of a modified existing structure or in a specially designed and constructed building. A permanent facility should have separate storage bays or bins, explosion proofing, ground columns, proper containment, sufficient ventilation and adequate emergency response and safety equipment. It should be situated on an impervious surface and be fenced for security.

VI.4 HANDLING AND DISPOSAL METHODS

Handling and disposal methods are regulated by local, state and federal agencies. The annual drop-off facility will be staffed by professionals trained to handle hazardous materials. Regulations will monitored for changes and HHW programs will be modified accordingly.

Contractors who will haul and dispose of waste collected by the program must be licensed hazardous waste haulers. Environmental compliance of treatment, storage and disposal facilities will be monitored by the Santa Clara County Department of Environmental Health Services. To the maximum extent feasible, collected HHW will be diverted from disposal for recycling or reuse.

VI.5 MULTIJURISDICTIONAL HHW EFFORTS

As described in Chapter I, the City of Gilroy does not intend to participate in the the Countywide HHW Program for collection services.

Representatives from all cities and the County participated in the Household Hazardous Materials Working Group planning process which developed the countywide HHW program. The program has been reviewed and endorsed by the Solid Waste Technical Advisory Committee (TAC), the Intergovernmental Council (IGC) Solid Waste Committees, and the IGC. County departments have received the approval to administer the program from the Board of Supervisors on 2/26/91. The Board Transmittal authorizing the program is included as Attachment 3.

The City already coordinates its HHW drop-off day events with Morgan Hill, San Martin and Santa Clara County. These efforts are planned to continue in the future and expand when all jurisdictions are able to develop a countywide cooperative program.

VI.6 REUSE, RECYCLING, AND END USES FOR DIVERTED MATERIALS

In 1990, 97.1 tons of HHW collected in the City of Gilroy was recycled and 326 tons of HHW was disposed.

It is anticipated that the Gilroy HHW drop-off Program and the curbside oil collection program will continue to recycle at least 28 percent of total HHW generated in the city. New recycling options may become available for materials such as oil-based paints and solvents in the future and combined with public education, should result in a greater percentage of HHW sent for recycling. For recycling methods for specific wastes, see Chapter V, section 8 of this Element.

End uses for materials diverted through HHW recycling or reuse efforts were described in Chapter IV, Evaluation of HHW Management Alternatives under the "End Uses" criteria.

Chapter VII

PROGRAM IMPLEMENTATION

This section describes the responsible parties, necessary tasks, estimated costs, and sources of funding for the implementation of the selected HHW programs for the city of Gilroy.

VII.1 GOVERNMENT AGENCIES RESPONSIBLE FOR IMPLEMENTATION

The Chemical Control Division of the City Fire Department is responsible for oversight of the HHW management in Gilroy. The supervisor of the Chemical Control Division will be the liaison between the City and the participating jurisdictions of Morgan Hill and San Martin and the County where appropriate. This person will participate in planning and evaluating the HHW collection and education activities as they pertain to Gilroy.

For the Drop-off Day Program, the City has made arrangements with its neighboring jurisdictions to continue its well established Events program. An example of the agreement for 1991's Event between the Cities of Gilroy and Morgan Hill and the County is contained in Appendix D. A similar agreement is planned for future years throughout the short- and medium-terms.

The county-wide HHW Program will be organized by the County of Santa Clara Division of Environmental Health Services and the Department of Planning and Development. The Division of Environmental Health Services will serve as the lead agency for the administration and implementation of the HHW collection program. Hazardous materials specialists and environmental health specialists will be utilized for development and initial implementation of the collection program. Health Department in-house support services include an industrial hygienist, a toxicologist, and a chemist. A public health laboratory is available. Health Department staff will contract for transportation and disposal of the HHW in compliance with federal, state, and local regulations.

The Department of Planning and Development will serve as the lead agency for public education. The Planning Department will coordinate the educational efforts with participating cities, County Environmental Health, Santa Clara Valley Water District, the wastewater treatment facilities, schools, and non-profit agencies.

Table VI-1

SUMMARY OF HHW PROGRAM IMPLEMENTATION TIME-LINE

TASKS	DATE
Curbside Motor Oil Collection	
Continue Operation of Curbside Motor Oil Collection	1991, on-going
Evaluate Expansion of Motor Oil Collection to Multi-family Units	On-going
Periodic Drop-off Events	
Continue operation and conduct of one or more events	1991, on-going
Evaluate number of Drop-off Events to hold annually	annually
Hazardous Waste Exclusion Program	
Continue operation of Hazardous Waste Exclusion Program	1991, on-going
Include report of Hazardous Waste Exclusion Program in biannual evaluations	Bi-annually
HHW Recycling Component	
Evaluate Environmental Compliance Records of HHW recycling Contractors (Compliance Evaluations will be done by the County)	1991, on-going
Contract for recycling services for collected HHW	1991, on-going
Re-evaluate and up-date recycling options biannually	1991, biannually
HHW Waste Exchange Component	
Include HHW Waste Exchange procedures in Staff Training	1992, on-going
Develop Waiver for Residents to sign before accepting materials	1991
Monitoring and Evaluation of HHW Program	
Obtain records from Hazardous Waste Exclusion Programs	1992, annually
Obtain Records from City-sponsored HHW Programs	1992, annually
Conduct survey of residents	1992, annually
Analyze participation data for under-respresentation	1992, annually
Analyze adequacy of services	1991, annually
Write and distribute annual report	1992, annually
Modify programs as necessary	1993, annually

VII.2 IMPLEMENTATION TASKS AND SCHEDULE

The schedule for implementation for the selected HHW programs are planned to take place immediately and it is anticipated that these programs will continue during the short- and medium-term planning periods. However, each program will undergo an annual evaluation and may be be modified to meet the needs of the residents of Gilroy.

Table VII-1 outlines the tasks and schedule for implementing the programs described in this Element.

VII.3 COST OF PROGRAMS

The City of Gilroy's estimated annual costs for 1991 for HHW programs are estimated to be at least $22,000 as shown in Table VII-2. Costs for other parts of the program are also shown. Each year, the City will review its HHW services such as curbside oil collection, additional city HHW collection programs, and waste acceptance control at the landfill.

Table VII-2

COSTS FOR SELECTED PROGRAMS

Program	Estimated Annual Costs	Source of Funding
Annual HHW Day	$8,000 - 10,000	General Fund
Countywide Program	$ 12,000 - 18,000	General Fund
Curbside Oil Collection	Included in Recycling Surcharge	Recycling Surcharge
Door-to-door Collection	TBD	General Fund
HHW Recycling	To be provided by County	

VII.4 SOURCES OF FUNDING FOR OF HHW PROGRAM

The Countywide HHW Program has several sources of funding, as described in their description provided in Appendix D.

The City's HHW programs will be funded by revenues provided directly or indirectly through the recycling surcharge on residents' garbage bills, or the Franchise fee paid to the City from the hauler.

VII.5 CONTINGENCY FUNDING

In the event that adequate funding is not available from the revenue sources identified in Table VII-2, the City of Gilroy may consider new or additional garbage surcharge fees, landfill tipping fees, or advance disposal fees.

In addition, the City may implement new special assessment fees to support these expanded programs.

Chapter VIII

MONITORING AND EVALUATION

In its effort to reduce the quantity and toxicity of Household Hazardous Waste in Gilroy, monitoring and quantifying the achievement of the program's short-term objectives will enable the City to assess programs and develop methods to reach key goals.

VIII. 1. MONITORING METHODS AND OBJECTIVES

Gilroy has adopted the following objectives and methods for achieving the goals as described in thsi section for the short-term planning period.

- **Convenient Access to Household Hazardous Waste Services.**

Method 1. Participation records will be kept at all events and programs. Results will be compiled for inclusion in annual reports.

Method 2. The City of Gilroy will analyze will the geographical distribution of collection event participants. If communities or neighborhoods are found to be under-represented, the causes of the under-representation will be analyzed and appropriate steps will be taken to address this problem. This data will be included in annual reports.

Method 3. The amount (tonnage) of material collected by all HHW programs will be recorded. This data will be compiled and included in annual reports.

It should be noted that the total waste collected figures can be misleading for use as a program evaluation criterion. A number of factors can affect these figures, making year-to-year comparisons difficult. For example, successful source reduction efforts will reduce the amount of HHW generated per household. Furthermore, many households' first drop-off is likely to be larger than subsequent drop-offs because it includes the items that have been stored for extended periods of time. Therefore, while HHW collection programs will become more accessible and efficient, the amount of HHW collected per household may actually decline over time. These effects may be particularly noticeable during the medium-term planning period (1995-2000).

Despite these limitations, the total amount collected is an important element in evaluating the success of the program. Every effort will be made to collect accurate data on amounts of HHW collected. The Countywide HHW Program's

efforts to standardize HHW measurement methods will increase the accuracy of these evaluation efforts.

Method 4. - The baseline solid waste characterization study data will be compared to subsequent waste characterization studies to evaluate the amount of HHW entering the landfill.

This type of comparison should be used with caution. In addition to the limitations described above, the percentage of the waste stream that is HHW in future waste characterization studies may not be an accurate means of evaluating the HHW program. The solid waste recycling, composting and source reduction programs will substantially reduce the overall amount of solid waste in the short-term planning period. The amount of HHW entering the landfill is expected to decline, but may not decline at the same rate as solid waste. This may result in an increase in the percentage of HHW in the solid waste stream, while the amount of HHW may actually be decreasing. Adjustments should be made to account for these factors.

- **Expansion of Curbside Motor Oil Collection.**

Method 1. The amount of motor oil collected by the curbside collection program will be included in the annual report. The number of households eligible and number of households participating in curbside oil collection will be included.

Method 2. The City's curbside motor oil collection expansion plans and expansion progress will be included in the annual report.

- **Minimize Disposal of Collected HHW of Reusable Materials and HHW Recycling.**

Method 1. Each type of HHW diverted for recycling will be tracked to determine the total amount of waste recycled. The data will be included in annual reports.

Method 2. The types and amounts of HHW redistributed to non-profit groups and public agencies will be recorded for inclusion in annual reports.

Method 3. The amount of HHW redistributed to residents at HHW events will be recorded for inclusion in annual reports.

- **Improve Monitoring and Evaluation of HHW Programs.**

Method 1. At the end of the first year of operation, the new measurement method will be evaluated by participating cities and agencies.

■ **Limit Improper Disposal of HHW at Disposal Site By Continuing Load Checking.**

Method 1. - The Department of Environmental Health Services' annual reports on the hazardous waste exclusion program will be included in the annual HHW program reports.

Method 2. - The quantities of HHW discovered in the load checking program will be charted in order to monitor increases or decreases from previous years.

■ **Increase Efficiency and Effectiveness of HHW Collection and Public Education by Coordinating Programs Whenever Feasible.**

Method 1. - Annual surveys of participating City officials will be done to determine overall level of satisfaction and to identify problems in the collection and public education programs.

Method 2. - Annual surveys of agencies and organizations involved in the countywide HHW program will be done to assess satisfaction with the cooperative HHW collection and public education efforts.

■ **Decrease Potential Liability Risks by Monitoring Compliance Records and Proof of Insurance.**

Method 1. An environmental compliance file will be maintained for each hazardous waste management and recycling firm utilized by the program. The file will be reviewed and updated annually to include environmental compliance records, results of on-site audits; and proof of liability insurance. A summary of these activities will be included in the annual reports.

■ **Support Legislative Efforts toward Development of Safer HHW Management Methods.**

Method 1. The annual HHW management report will include a summary of legislative efforts sponsored or endorsed by the City of Gilroy.

VIII.2 METHODS TO QUANTIFY AND MONITOR ACHIEVEMENT OF MEDIUM-TERM OBJECTIVES

■ **Continue short-Term Objectives.**

Method 1. - The evaluation methods described above for the short-term planning period objectives will be continued into the medium-term planning period.

- **Increase Source Reduction Efforts.**

Method 1. - At the beginning of the medium-term planning period, additional strategies for promoting source reduction will be considered.

VIII.3 WRITTEN CRITERIA FOR EVALUATING PROGRAM'S EFFECTIVENESS

The Chemical Control Division of the Gilroy Fire Department will prepare annual reports describing the findings of the evaluation outlined above. The total amount of HHW diverted; amount recycled; number of residents utilizing the programs; and cost per ton, yard, or drum to divert HHW will be included. When future waste characterization studies are done, the amount of HHW remaining in the waste stream will be calculated.

Additional information on the markets for recyclable HHW materials will be described in the annual report. These markets will be monitored to determine if additional markets are necessary or if additional materials can be sent for recycling.

The annual report will also include an overall evaluation of the adequacy of the HHW collection services. Increases in demand for services and/or increases in population will warrant adjustments in the operating schedule of the mobile collection unit and the permanent facility. In addition, under-utilization in specific communities or neighborhoods will be examined and addressed.

VIII.4 RESPONSIBILITY FOR MONITORING, EVALUATION, AND REPORTING

The Chemical Control Division of the Gilroy Fire Department and the Resource Recovery Manager will oversee HHW collection programs, evaluate the progress and report the results to County.

VIII.5 FUNDING REQUIREMENTS FOR MONITORING AND EVALUATION

Monitoring and evaluation of HHW management in the city of Gilroy will be funded through the City's General Fund. The County Solid Waste Program budget includes funding for administrative activities such as recordkeeping, monitoring

recyclable materials markets, tracking the demographics of participants utilizing the program, and preparation of annual reports. The County Environmental Health Department's HHW and landfill load checking programs will be included in tehrecording keeping and reporting procedures.

VIII.6 CONTINGENCY MEASURES

If the programs described above fail to meet the goal of diverting HHW from landfill disposal, the following tasks will be considered:

- Analyze existing programs for obstacles to successful implementation.
- Increase or improve education and advertising efforts.
- Increase funding and staff.
- Modify objectives.
- Increase enforcement efforts.
- Increase penalties for improper disposal in the City.
- Increase frequency of program monitoring and review.

Chapter IX

EDUCATION AND PUBLIC INFORMATION

IX.1 PUBLIC INFORMATION OBJECTIVES

To achieve Gilroy's goal of reducing the quantity and toxicity of household hazardous waste, pubic education and information about methods of safe disposal and well as safe substitutes will be essential. Two objectives have been establish by the City to achieve this goal. They are:

- **Increase Public Awareness.**

  Multi-jurisdictional Public Education Programs. The City of Gilroy will sponsor and participate in multijurisdictional public education programs in cooperation with the the County, and the cities of Morgan Hill and San Martin. In addition the Santa Clara County will coordinate public education efforts with the Non-point Source Pollution Control Program, the wastewater treatment plants' source reduction programs, the school science education curriculums, and non-profit educational organizations.

  Source Reduction. Residents will be informed of the availability of less or non-hazardous substitutes. The need for public support for development of products which do not result in the generation of household hazardous waste will be included in public education materials.

  Proper Use and Storage. Residents will be informed about the hazardous nature of some products and methods for proper use and storage of such products.

  Proper Disposal. Residents will be informed of the environmental hazards associated with improper disposal of HHW, and will receive guidance on proper disposal methods.

- **Improve Accuracy of Information**

  Training for Use of Guidebook. Employees of public agencies and organizations in the **City of Gilroy** who respond to public inquiries regarding HHW will be eligible to participate in training on the use of the *Guidebook for Proper Management of Household Waste for the Protection of Our Local Environment.* The Guidebook was distributed to approximately 250 agencies and organizations in the Spring of 1991.

Guidebook Updates. Staff will develop update/supplements of the manual as necessary and will continue to assist the County in its implementation. Guidebook information is disseminated on request to the public.

IX.2 EXISTING PROGRAMS

City-sponsored Education Efforts

The City of Gilroy has sponsored educational efforts to inform residents of proper disposal methods of HHW. In addition, residents have received guidance on how to generate less hazardous waste by using less hazardous and non-hazardous alternatives. These efforts include:

- Distribution of the *Take Me Shopping-A Consumer Guide To Safer Alternatives For Household Hazardous Products* to residents in 1990.
- Phone inquiries from residents regarding HHW disposal and alternative products answered by City staff.
- Advertising done in preparation for upcoming HHW collection events. The following methods were used:
    - Advertisements in local newspapers.
    - Presentations made to school and community groups by City staff.
    - Other public education programs sponsored by City.

Non-profit and Volunteer Organization Efforts

League of Women Voters. In 1990, the City of Gilroy, in cooperation with the League of Women Voters, cooperated in the distribution of a video entitled, *Cleaning Up Toxics at Home*. The League distributed copies of the video to libraries, the County Hazardous Waste Management Program, junior colleges, universities and perinatal education groups.

The City has presented the video and other publications to schools and other civic groups and plans to continue these activities in the next planning terms. The League also printed and distributed 4000 copies of *Take Me Shopping*, as well as a flyer entitled *Cleaning Up Toxics*.

Public Agency-Sponsored Programs

Non-point Source Pollution Control Program. The City is considering participation in the Non-point Source Pollution Control Program, a project of the Santa Clara Valley Water District, created for the purpose o reducing stormwater-bourne pollutants entering the southern San Francisco Bay. Non-point source water pollution refers to pollutants which run-off from broad areas of land rather than enter the water through a discrete pipe or conduit. Specific pollutants of concern, in order of priority, are heavy metals (cadmium, copper, lead, mercury, nickel, silver and selenium); hydrocarbons (contained in oil and grease;) pesticides and herbicides; suspended sediments; and organic pollutants.

The Non-point Source Program Public Information/Participation Plan aims to inform the pubic about the causes and origins of Non-point source pollution, explain the correct practices for controlling pollutants at their source, and involve the active support of the public in implementing these practices. The Non-point Source Program aims to reduce improper disposal of HHW into Non-point pathways and at the same time discourage disposal of HHW into the solid wastestream.

In 1991, the Non-point Source Program began its public educational efforts with publication of a brochure entitled, *The Bay Begins at Your Front Door!* The brochure explains how residents can prevent pollution of the San Francisco Bay by keeping hazardous materials from entering the storm drain system. The Non-point Source Control Program plans to distribute this brochure and several pollutant specific brochures focussing on motor oil and pesticides. Additional educational programs are under development.

Wastewater Treatment Plant. The sewage treatment plant serving the cities of Gilroy and Morgan Hill is located at 900 Southside Drive within the city limits of Gilroy. It is managed under contract to the City by Operations Management International, Inc. The plant sponsors a public education effort aimed at reducing the discharge of hazardous wastes into the sanitary sewer system. Residents are informed of proper disposal methods for hazardous materials and urged to use the HHW collection days for household-generated wastes.

Santa Clara County Office of Education. The County Office of Education oversees the implementation of the State Department of Education's mandated Science Framework in the 37 school districts in Santa Clara County, including the City of Gilroy. A revised science curriculum is being phased into the schools in 1990 and 1991, containing lessons on hazardous materials for grades K-12, and has been introduced into the Gilroy school's curriculum.

Santa Clara County Hazardous Waste Management Plan (Tanner Plan). The Santa Clara County Tanner Committee developed the following three public education policies for management of HHW. The Plan was formally approved by the City of Gilroy and will be adopted by the City upon approval of the Plan by the State Department of Health Services.

> **Public Education Policy #1.** *The County and Cities shall coordinate the development of a program for the proper management and disposal of household hazardous waste on a countywide basis in accordance with the waste management hierarchy and considering existing programs and conditions.*

This policy resulted in the formation of the Household Hazardous Materials Working Group. The Working Group is composed of representatives from each of the cities; County hazardous waste, solid waste and environmental health staff; private solid waste contractors; and community advisory members. The Working Group conducted a thorough evaluation of HHW management alternatives. This evaluation resulted in a decision to implement a pilot countywide HHW collection and public education program in fiscal year 1991-1992. The evaluation of HHW management alternatives and a description of the selected program are included in this document.

> **Public Education Policy #2.** *The County, in coordination with the Cities, shall initiate a public education campaign which will inform all county residents about the potential hazards associated with household products, how to dispose of them safely, and safe substitute products and practices that can be used in place of hazardous substances.*

Several educational publications have been produced: *Take Me Shopping - A Consumer Guide To Safer Alternatives For Household Hazardous Products* and *The Guidebook for Proper Management of Hazardous Wastes.* Additional countywide educational activities are currently under development and will be used by the City and its School District

> **Public Education Policy #3.** *The County, in coordination with the Cities and industry, shall engage in direct public education concerning hazardous waste reduction and management such as workshops, utilization of the media, school programs, and information dissemination.*

As a result of this policy, industry-specific waste minimization workshops have been held in the county. Workshops for the metal finishing industry and the automotive service industry provided up-to-date waste minimization and regulatory compliance information to over 500 local businesses as of March 15, 1991. In addition, one jurisdiction is working with its local industry in developing a

pilot educational program to provide waste minimization information to all types of hazardous waste generators. Business and industry associations are also participating in these efforts. In additon, an effort to coordinate hazardous waste public education programs with local schools is underway, and includes the participation of several local community colleges.

IX.3 IMPLEMENTATION PLAN

Program Description

City Efforts. The public education efforts currently underway in the City are described above under *Existing Conditions*. It is anticipated that these City-sponsored programs will be continued into the short- and medium-term planning periods. A summary of public education activities to be carried out in the short- and medium-term planning period follows.

- HHW appointment/information telephone line.
- Distribution of *Take Me Shopping* at HHW events and upon request.
- Use of *The Guidebook for Proper Management of Hazardous Waste,* and other publications produced by the County and non-profit organizations.
- Public notices on Cable Channel 34 and in the City newsletter, I*nside Scoop*
- Advertising in local papers and on the radio, public service announcements.
- School Presentation programs.

Community Audiences to be Targeted

The City of Gilroy intends to provide HHW collection services and source reduction public information for all residents. However, in order to achieve this goal, it may be useful to identify the various "publics" or audiences that exist within the population of the city. When preparing and disseminating educational materials designed to promote source reduction and proper disposal, factors such as potential language barriers will be taken into account. Gilroy plans to work with ethnic community groups to ensure that communication barriers do not represent a problem.

Responsible Agencies

The Chemical Control Division of the Gilroy Fire Department is responsible for oversight of the HHW education and public information programs in the City and will coordinate with the County Department of Planning and Development which will serve as the lead agency for public education. The Planning Department will coordinate the educational efforts with participating cities, County Environmental Health, Santa Clara Valley Water District, the wastewater treatment facilities, schools and non-profit agencies.

Implementation Tasks

Major tasks to be implemented in the short-term are listed below. most of these tasks will be continued in the medium term.

- Develop and distribute event advertising notices.
- Develop and distribute the Guidebook to public agencies.
- Provide training for staff using the Guidebook.
- Review and, if needed, update the Guidebook.
- Reproduce and distribute the *Take Me Shopping* booklet.
- Establish City HHW Telephone Information Line.
- Participate in on-going Multi-agency HHW public education efforts.
- Develop and disseminate source reduction and product-specific information.

Implementation Costs and Sources of Funding

Public Information. A portion of the HHW Program budget will be allocated to public information activities.

Education. The budget for implementing education programs is currently under development. The City HHW Program is coordinating its educational efforts with the City of Gilroy, public agencies, and non-profit organizations.

IX.4 MONITORING AND EVALUATION

The methods described below will be used to measure achievement of the education and public information objectives.

Method 1. Annual surveys of residents will be done to determine the extent to which buying habits have changed to reduce generation of HHW; and the percent of residents aware of safe use and disposal practices. Results of the surveys will be included in the annual reports. When possible, changes in purchasing behavior may also be monitored using locally-obtained retail sales data or regional marketing data.

Method 2. The evaluations of number of participants and geographic distribution of participants will be analyzed to determine the adequacy of HHW program advertising efforts.

Method 3. An annual survey of retail businesses will be done to monitor availability of less-hazardous alternatives to specific products.

Written Criteria. The City of Gilroy will prepare annual reports describing the findings of the evaluation outlined above. Education and public information programs will be evaluated to determine changes in purchasing habits, level of awareness of proper use and disposal, level and distribution of participation, and changes in availability of less-hazardous products.

Agencies Responsible for Monitoring, Evaluating and Reporting. The agencies responsible for monitoring, evaluation and reporting include the the Chemical Control Division of the Gilroy Fire Department, the County Division of Environmental Health Services, and the County Department of Planning and Development.

Funding Requirements. Monitoring and evaluation of HHW management in the City of Gilroy will be funded through the City's General Fund. This will include funding for administrative activities such as recordkeeping, monitoring recyclable materials markets, tracking the demographics of participants utilizing the program, and annual report-writing.

Contingency Measures. In the event that the annual evaluations indicate a shortfall in attainment of the education and public information objectives, the following measures may be implemented.

- Analyze existing programs for obstacles to successful implementation.
- Increase or improve education and advertising efforts.

- Modify objectives.
- Increase frequency of program monitoring and review.
- Increase funding and staff.

Program Monitoring and Reporting Schedule

Annual reports will be written and distributed at the end of each 12 months of operation. It is anticipated that the first annual report will be written in October, 1992.

APPENDIX A

Support Documentation
for Chapter II

A - 1 Santa Clara South County Area Disposed Waste Field Analysis Plan

A - 2 Method For Determination Of The Composition Of Unprocessed Municipal Solid Waste

A - 3 Methodology

A - 4 Waste Diversion Survey Forms

A - 5 Waste Diversion Lists And Survey Forms

City of Gilroy
Source Reduction
& Recycling Element

SANTA CLARA SOUTH COUNTY AREA

DISPOSED WASTE FIELD ANALYSIS PLAN

Prepared by:

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Submitted to:

County of Santa Clara
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March, 1991

DISPOSED WASTE FIELD ANALYSIS PLAN

INTRODUCTION

This test plan presents the methodology for estimating the composition of solid waste generated within the cities of Gilroy and Morgan Hill and the Unincorporated South County. The field analyses will be conducted at the San Martin Transfer Station during the period of April 1-7 (Monday through Saturday), 1991

SAMPLE COLLECTION AND SORTING METHODS

The methods of sample collection and of sorting will be those of the ASTM Draft "Method for Determination of the Composition of Unprocessed Municipal Solid Waste." Loads of waste will be diverted at the landfill to the load sampling and sorting location. Waste categories and types for the field analyses will be those specified in Section 18722 (j) of the Emergency Regulations. A listing of the waste categories and types is presented, but not limited to, those in Table 1. Data will be recorded on field sample data sheets similar to those in Table 2.

Residential waste collection vehicles will be selected to be representative of waste from within each jurisdiction. Commercial waste collection vehicles will be selected to be representative of commercial generators within each jurisdiction. The selection of representative loads of waste will be based on discussions with the haulers and CRS's knowledge of the residential and commercial waste sources within the jurisdictions.

Industrial waste collection vehicles (debris boxes) from the three jurisdictions will be selected at random at the landfill during the course of the one-week field study.

Special wastes (such as sludge, asbestos, etc.) will be sorted to the extent they are present in loads designated for sampling and will be visually surveyed among the self-hauled wastes. Additionally, records kept of special waste by haulers and disposers will be analyzed as part of the study.

No sources of marine waste were identified during the planning process for the field analysis program. 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 shown in the table, in addition to the field sorting program for waste delivered to the landfill by collection vehicles, self-haul wastes and wastes delivered by small haulers will be visually surveyed go establish an estimation of the quantity, composition, and source of this waste including jurisdiction of generation. The objective will be to visually survey about 70 percent of the self-haul wastes disposed during 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 (residential, 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. An objective of the analysis is to characterize the overall waste stream from each jurisdiction within an accuracy of approximately 10 to 15%. A selection 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 about 50% of those in the jurisdiction.

WASTE 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.

ANCILLARY DATA COLLECTION

Ancillary data collection activities before, during and after the field analyses will include where possible the following for each vehicle load:

Residential

- Collection company and route number
- Estimated number of corresponding households

Commercial

- Collection company and route number
- Type of generator

Industrial

- Collection company
- Type of container (open top or compactor)
- Type of generator

Table 1. Refuse Components for Sorting Study

PAPER

1	Corrugated/kraft paper
2	Mixed paper
3	Newspaper
4	High grade/office
5	Magazines/glossy
6	Other paper

PLASTICS

7	Film
8	PET
9	HDPE
10	Polystyrene foam
11	Other

12	FOOD
13	YARD WASTE
14	WOOD
15	TEXTILES/LEATHER
16	RUBBER/TIRES
17	AGRI. CROP RESIDUE
18	MANURE
19	OTHER ORGANICS

METALS

20	Steel food and beverage containers
21	Other ferrous
22	Bi-metal cans
23	Aluminum cans
24	Other aluminum
25	Other non-ferrous

GLASS

26	Redeemable beverage containers
27	Non-redeemable beverage containers
28	Other recy. glass
29	Other non-recy. glass

30	OTHER INORGANICS/INERTS
31	WHITE GOODS
32	HOUSEHOLD HAZARDOUS WASTE
33.	SPECIAL WASTES (Where applicable)

Table 2. Sample Field Data Sheet

WASTE COMPOSITION DATA SHEET FOR _____ Sample Notes: _____

JURISDICTION: _____
Day/Date: _____ Truck Co./No.: _____
Residential Sample No.: _____ Truck Type: _____
Recorded By: _____ Waste Type: _____

Component	Cont. Tare	Gross Weights (lb) Tare					No Tare					Total
Corrugated containers												
Mixed paper												
Newspaper												
High grade ledger paper												
Magazines												
Other paper												
Film plastics												
HDPE containers												
PET containers												
Polystyrene												
Other plastics												
Food waste												
Yard waste												
Wood wastes												
Textiles/leather												
Tires/rubber products												
Agricultural crop residues												
Manure												
Other organics												
Tin cans												
Other ferrous												
Bi-metal containers												
Aluminum cans												
Non-ferrous												
Other aluminum												
CA Redemption Value												
Non-redeemable class												
Other recyclable												
Other non-recyclable												
Other inorganics												
Appliances												
HHW												

Notes on HHW:

Misc. Notes:

Table 3. Santa Clara South County Sampling Plan

Waste Source	Gilroy	Morgan Hill	Unincorporated	Totals[1]	Small Hauler & Self-Haul
Residential	8	8	7	23	
Commercial	6	6	6	18	
Industrial	5	5	5	15	
Totals	19	19	18	56	

[1]The actual number of samples to be collected and sorted depends upon the actual arrival times of vehicles at the landfill. The total number of samples to be collected is estimated to be in the range of 50 to 60.

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. The weight fraction of each component in the sorting sample is calculated from the weights of the components.

3.4 The mean waste composition is calculated using the results of the 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 management facilities, and establishing a reference waste composition for use as a baseline standard in facility contracts and in acceptance test plans.

4.2 The method can be used to define and report the composition of municipal solid waste through the selection and manual sorting of samples of waste. Care should be taken to consider the source and seasonal variation of waste, where applicable.

4.3 After performing a waste composition analysis, laboratory analyses may be performed on representative samples of waste components or mixtures of waste components for purposes related to the planning, management, design, testing, and operation of resource recovery facilities.

5. Apparatus

5.1 Sufficient metal, plastic, or fiber containers for storing and weighing each waste component, labeled accordingly. For components that will have a substantial moisture content (e.g., food waste), metal or plastic containers are recommended to avoid absorption of moisture by the 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 tools, traffic cones, traffic vests, leather gloves, hardhats, safety glasses, 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 sorting, 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 8. 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 each day of the one-week sampling period, or so as to be representative of the waste stream as agreed to by the affected parties. With respect to random selection of vehicles, any method is acceptable that does not introduce a bias into the selection. An acceptable method is use of a random number generator. For a weekly sampling period of k days, the number of vehicles sampled each day shall be approximately n/k, where n is the total number of vehicle loads to be selected for determination of waste composition. A weekly period is defined to be 5 to 7 days.

8.7 Direct the designated vehicle containing the load of waste to the area secured for discharge of the load and collection of the sorting sample.

8.8 Direct the vehicle operator to discharge the load onto the clean surface in one contiguous pile, i.e., to avoid gaps in the discharged load. Collect any required information from the vehicle operator prior to the vehicle leaving the discharge area.

8.9 Using mechanical equipment, remove material longitudinally along one entire side of the discharged load, sufficient to form a mass of material which, on a visual basis, is at least four times the desired weight of the sorting sample (i.e., about 1,000 lb). Mix, cone and quarter the material and select one quarter to be the sorting sample, using a random method of selection or a sequence agreed to by all affected parties, for the purpose of eliminating or minimizing biasing of the sample. If an oversize item (e.g., water heater) composes a large weight percentage of the sorting sample, add a notation on the data sheet and weigh it, if possible.

8.10 One sorting sample is selected from each collection vehicle load that is designated for sampling. All handling and manipulation of the discharged load, longitudinal sample, and sorting sample shall be conducted on previously cleaned surfaces. If necessary, remove the sorting sample to a secured manual sorting area. The sorting sample may be placed on a clean table for sorting for the convenience of the sorting personnel. The sorting area shall be a previously cleaned, flat, and level surface.

8.11 Position the storage containers around the sorting sample. From the sorting sample, empty all containers such as capped jars, paper bags, and plastic bags of their contents. Segregate each waste item and place it in the appropriate storage container.

8.12 In the case of composite items found in the waste, separate the individual materials where practical and place the individual materials into the appropriate storage containers. Where impractical, segregate and classify the composite item according to the following order:

8.12.1 If there are many identical composite items (e.g., plastic-sheathed aluminum electrical conductor), place them into the waste component containers corresponding to the materials present in the item and in the approximate proportions according to the estimated mass fraction of 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 $\bar{x}$ 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 based on field test data reported for municipal solid waste sampled during 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:

$$P_i = mf_i \times 100 \tag{4}$$

9.2.4 For the data analysis to be correct, the denominator of equation (2) must be unity and,

$$\sum_{i=1}^{j} P_i = 100 \tag{5}$$

9.3 The mean component composition for the one-week period is calculated using the component composition results from each of the analysis samples. The mean mass fraction of component i, $\overline{mf_i}$, is calculated as:

$$\overline{mf_i} = \frac{1}{n} \sum_{k=1}^{n} (mf_i)_k \tag{6}$$

and the mean percentage of component i, $\overline{P_i}$, is calculated as,

$$\overline{P_i} = \frac{1}{n} \sum_{k=1}^{n} (P_i)_k \tag{7}$$

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.

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.

Method for Calculating Diversion Rate

"Diversion Quantities" tables for residential and nonresidential wastes were prepared for each jurisdiction by tabulating the tons diverted by material type in 1990. These tables can be used by each jurisdiction to calculate percentage diversion rates by waste type after the total waste disposal quantities have been determined.

When combined, the results of the disposal and diversion characterization yield the total amount of solid waste generated, according to the equation defined by AB 939:

$$GEN = DISP + DIVERT$$

where: GEN = the total quantity of solid waste generated within the jurisdiction

DISP = the total quantity of solid waste, generated within the jurisdiction, which is transformed or disposed in permitted solid waste facilities

DIVERT = the total quantity of solid waste, generated within the jurisdiction, which is diverted from permitted solid waste transformation and disposal facilities, through

record this information for future SRRE revisions. As specified in AB 939, after January 1, 1995, up to 10 percent of transformation (incineration, pyrolysis, and other processes) can count toward the 50 percent diversion target (by 2000), provided that the front-end removal of recyclable materials and other specified conditions are met.

2. 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.

3. 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.

4. Apartment recycling is generally not reported separately from residential recycling. However, because of the different type of collection system, a column is provided in the diversion data table for each city 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.

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

conducting the study and the survey respondents (see Attachment 1). The following data were tallied:

- waste generator, i.e., residential or commercial/industrial
- 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 each jurisdiction.

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 Attachment 3. 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)

Data apportioning and assumptions. When data were available only in the aggregate, EMCON apportioned the data to specific jurisdictions based on the population ratio of those areas for which data were reported, based on ABAG's *Projections '90*.

In reviewing the data provided in the "Diversion Quantities" tables prepared for each jurisdiction, one should note the following assumptions:

1. A column entitled "transformation" was provided in each table to enable jurisdictions to use this table as a model to

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

2. Additional 13 recyclers and collectors (not on Bay Area Recyclers' list).

   (A copy of this list is included in Attachment 2).

3. Transfer stations and landfills (a total of 6 facilities).

   (A copy of this list is included in Attachment 2).

Survey response. Of the 138 recyclers and operators of transfer stations and landfills who responded to the mail survey and/or phone survey, 49 responded, for a response rate of 36 percent. A breakdown of the responses by category is as follows:

- 132 recyclers, brokers, collectors and end users were surveyed; 41 replied, for a response rate of 31 percent
- 6 operators of landfills and transfer stations were surveyed and all responded, for a response rate of 100 percent.

In addition, all of the jurisdictions within the County responded to the mail survey of recycling and composting programs.

Data Reduction, Interpretation, and Assumptions

Cross checking. To avoid double counting the data provided by recyclers, collectors, and end users, the material flow was charted for each waste type for which information was provided. 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 were tallied on a spreadsheet form; survey results for recyclers were reported in the aggregate, in compliance with the confidentiality agreement between the consultant

- Glass

Landfill phone survey. The City surveyed operations at the following landfills by phone to obtain estimates of waste quantities diverted from landfilling:

- All Purpose Landfill
- Guadalupe Landfill
- Pacheco Pass Landfill
- Zanker Road Landfill

Data were obtained from landfill operators on the following waste categories for jurisdictions in Santa Clara County:

- Glass, including CA Redemption Value, refillable beverage containers, and other recyclable glass
- Yard waste
- Metals, including aluminum, ferrous, and non-ferrous metals
- Plastics, including HDPE, PET, film, and other plastics
- Wood waste
- Inert solids, including concrete and asphalt

Summary of Survey Results

Survey recipients. 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. A breakdown by category of those surveyed is as follows:

1. Bay Area Recyclers' List - 119 recyclers, collectors and brokers received surveys.

   (A copy of this list is included in Attachment 2).

15 jurisdictions within the County. Survey forms were sent to the following:

Campbell - Barbara Lee, City Manager's Office

Cupertino - Bert Viskovich, Director of Public Works

Gilroy - Em Rojas, HCD Coordinator

Los Altos - Bruce Bane, Director of Public Works

Los Altos Hills - Bill Ekern, Director of Public Works

Los Gatos - Regina Falkner, Manager, Community Service Division

Milpitas - Cynthia Rosson, Assistant Planner

Monte Sereno - Rosemary Pierce, Chief Administrative Officer

Morgan Hill - Susan Tosh, Environmental Programs Division, Department of Public Works

Mountain View - Dianne Dryer, Recycling Coordinator

Palo Alto - Mike Miller, Department of Public Works

San Jose - Gary Liss, Solid Waste Manager

Santa Clara - Rick Mauck, Deputy Director/Public Works

Saratoga - Vera Dahle, Solid Waste Program Manager

Sunnyvale - Mark Bowers, Solid Waste Program Manager

Transfer station phone survey . The San Jose Recycling and Transfer Station and the San Martin Transfer Station were surveyed by phone to obtain data from jurisdictions within Santa Clara County that salvage and recycle. Waste types for which data were collected were:

- Metals, including aluminum, tin, and ferrous metals
- Corrugated cardboard
- Wood
- Yard waste

City programs survey. Next, EMCON prepared a survey form for all the cities within Santa Clara County to obtain data on the quantities of wastes diverted from the residential waste stream (and a portion of the commercial waste stream.)

The survey of city programs requested data on the following residential diversion programs

- Curbside collection program
- Drop-off recycling center(s)
- Buy-back center(s)
- 20/20 center(s)
- Curbside/and waste collection
- Drop-off yard waste program

The survey form sent to cities also requested the following data for commercial-industrial diversion programs:

- Collection of recyclables from commercial businesses by privately owned recycling firms
- Drop-off center(s) for commercial-industrial wastes
- Restaurant-bar glass collection
- High-grade office paper collection
- Cardboard collection program for commercial and retail firms

The County reviewed the survey form prior to its mailing. A copy of the form used to obtain data on these programs is presented in Attachment 1.

The October 1990 mailing list of the Technical Advisory Committee for the Santa Clara County Office of Toxics and Solid Waste Management was the source of the names and addresses for the survey recipients in the

aggregate form only, to ensure confidentiality. The survey form identified the need for the following data:

- 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)

The survey form was reviewed by the County prior to its mailing. Copies of the survey form and the confidentiality agreement are provided in Attachment 1.

A mailing list of recyclers, brokers, and end users of secondary materials in the area 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

The mailing list for recyclers, collectors, brokers, and end users ("Bay Area Recyclers") is provided in Attachment 2.

An additional list of 13 recycling collectors and brokers was developed by referrals from other recycling firms. The names and addresses of these firms are included in Attachment 2.

for a continuous 12-month period after 1984 and prior to the jurisdiction's adoption of the Source Reduction and Recycling Element (SRRE). Diversion refers to the measured amount of waste (1) reduced in the jurisdiction, or (2) generated within a jurisdiction and recycled or composted at sites within or outside of that jurisdiction.

Section 18732 of Chapter 9 of the CCR identifies the following methods as being acceptable for determining diversion:

1. Quantitative field analysis, and/or
2. Materials flow with use of current written records from disposal facilities, and/or
3. Existing disposal data from comparable jurisdictions

In conducting the waste diversion characterization for the County, EMCON selected Method 2 (materials flow plus records). The time period selected for the diversion characterization was the 12-month period, January 1990 through December 1990.

The following surveys were undertaken to obtain waste diversion data:

- a mail survey of collectors and processors of recyclable materials, utilizing a material flow methodology;
- a mail survey of City residential and nonresidential diversion programs; and
- a telephone survey of transfer station and landfill operators

Survey Methodology

Recyclers' survey. Initially EMCON developed a survey form for recyclers, brokers, and end users 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

METHODOLOGY FOR SOLID WASTE DIVERSION CHARACTERIZATION COUNTY OF SANTA CLARA

Background

In January of 1991, the County of Santa Clara retained EMCON Associates (EMCON) to conduct a modified solid waste diversion study limited to data available from

- Local secondary materials market outlets
- Recycling collectors
- Materials brokers
- End users
- California certified redemption centers
- City recycling and composting programs
- Transfer station records
- Hauler records

The objective of the County-sponsored waste diversion study was to provide assistance to jurisdictions within the County in the preparation of waste generation studies as part of the AB 939 planning process. No businesses were surveyed as part of this study.

In accordance with Title 14, Chapter 9 of the California Code of Regulations (CCR), the diversion characterization identifies the composition and quantity of solid waste generated within a given jurisdiction that is diverted

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.

---

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.

Printed on Recycled Paper

existing source reduction, recycling, and composting programs.

The methodology for calculating the diversion rate (after the total quantity of waste disposed of by material type for 1990 has been determined by each jurisdiction) is as follows:

- tabulate the tons/year disposed of by waste type and waste generator (residential, commercial, etc.) (Each jurisdiction must determine its waste disposal quantities.)
- tally these disposal quantities by waste type
- in a separate column, sum the quantity of waste diverted for each waste type (data provided by the County as a result of the EMCON waste diversion survey)
- add up the quantities disposed of and diverted to determine the total quantity in tons/year generated by waste type (disposed of + diverted = total generated)
- divide the quantity source reduced, recycled, and composted by the total waste generated to determine the diversion rate [(source reduction + recycling + composting x 100)/total quantity of solid waste generated = diversion rate percent]

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

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)			

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

WASTE GENERATOR CATEGORY LIST
for
City of Gilroy

A. COMMERCIAL BUSINESS AND INDUSTRY

No.	Business Category	SIC Class	Number (in Gilroy)
1.	Air Conditioning -	(Service/Retail)	18-(8)
2.	Appliances - (Retail)		___-(6)
3.	Auto Repair -	Service	
	15+Specialized		28--(5)
	Wreckers -		13--(2)
4.	Banks/Office Buildings		___-(8+)
5.	Cabinet Makers	Manf	___-(8)
6.	Canners	Manf	___(-3)
7.	Child Care Centers	Service	___-(11)
8.	Churches		___-(35)
9.	Contractors:	Service	
	Concrete, Asphalt, Insulation, etc.		___-(30+)
10.	Farms		___-(15)
11.	Fiberglass	Manufacture	___-(1)
12.	Furniture Dealers	Service	___-(7)
13.	Gardeners/Landscapers	Service	___-(7)
14.	Glass/Mirror Repair & Dealers	Service	14--(6)
15.	Grease & Oils Salinas Tallow Co. (800) 621-9000		___-(1)
16.	Grocers		___-(26)
17.	Hospitals South Valley Hospital -- 848-2000		___(-1)
18.	Hotels/Motels	Service	___-(7)
19.	Nurseries (11 in Gilroy)		___-(11)
20.	Plastics		-0-
21.	Printers	Service	___-(5)
22.	Restaurants (Dining)	Service	___-(15)

No.	Business Category	SIC Class	Number (in Gilroy)
23.	Restaurants (Fast Food & Carry-Out)	Service	___-(28)
24.	Schools, Public/Private - (One District)		___-(1)
25.	Sheet Metal		___-(7)
26.	Shopping Malls		___-(2)

B. GARBAGE AND REFUSE

Garbage Haulers - (1)	Service	1--(1)
Independent		na

C. RECYCLING BUSINESS

Recycling Business	Service	9--(4)

CONTACT LIST
Businesses & Organizations

Name and Address	Phone #
A. Recycling Businesses/Organizations	
1. A-1 Recycling Circus (Deposit Redemption Center) 150 Howson	842-0288
2. Trini Martin Recycling 8565 Monterey Highway	842-2565
3. Boliden Metech, Inc. 6200 Engle Way	848-3050
4. South Bay Metals (in county) 64 Denio Avenue	848-2705
B. Commercial Businesses	
1. Nob Hill Grocers - Ms. Trelet	842-6441
2. Safeway	(415) 498-2257
3. PW Market Place	848-5277
4. The Glassman	842-6368
5. Gilroy Car Care	842-5850
6. Gaylord Container Corporation 6400 Jamison Way	847-6400
7. Gilroy United Methodist Church	842-4021
8. Freitas Flatwork and Forming	848-1177

Name and Address	Phone #
9. Forest Park Inn	848-5144
10. Gilroy Inn	842-5574
11. Lyons	779-9740
12. Gilroy Village Shopping Center	842-0400
13. Dry Creek Village	848-3454
14. K-Mart	847-3277
15. G & G Paving	847-4597
16. Gilroy Foods	na

C. Agencies and Organizations

1. California Division of Recycling Local Assistance Branch	(916) 323-3508
2. Santa Clara County Dept. of Planning & Development (Emcon & Cal Recovery Studies)	441-1198

Table I

WASTE GENERATOR CATEGORY LIST
for
City of Gilroy

A. COMMERCIAL BUSINESS AND INDUSTRY

No.	Business Category	SIC Class	Number (in Gilroy)
1.	Air Conditioning -	(Service/Retail)	18-(8)
2.	Appliances - (Retail)		___-(6)
3.	Auto Repair -	Service	
	15+Specialized		28--(5)
	Wreckers -		13--(2)
4.	Banks/Office Buildings		___-(8+)
5.	Cabinet Makers	Manf	___-(8)
6.	Canners	Manf	___(-3)
7.	Child Care Centers	Service	___-(11)
8.	Churches		___-(35)
9.	Contractors:	Service	
	Concrete, Asphalt, Insulation, etc.		___-(30+)
10.	Farms		___-(15)
11.	Fiberglass	Manufacture	___-(1)
12.	Furniture Dealers	Service	___-(7)
13.	Gardeners/Landscapers	Service	___-(7)
14.	Glass/Mirror Repair & Dealers	Service	14--(6)
15.	Grease & Oils Salinas Tallow Co. (800) 621-9000		___-(1)
16.	Grocers		___-(26)
17.	Hospitals South Valley Hospital -- 848-2000		___(-1)
18.	Hotels/Motels	Service	___-(7)
19.	Nurseries (11 in Gilroy)		___-(11)
20.	Plastics		-0-
21.	Printers	Service	___-(5)
22.	Restaurants (Dining)	Service	___-(15)

Table I (cont.)

No.	Business Category	SIC Class	Number (in Gilroy)
23.	Restaurants (Fast Food & Carry-Out)	Service	___-(28)
24.	Schools, Public/Private - (One District)		___-(1)
25.	Sheet Metal		___-(7)
26.	Shopping Malls		___-(2)
B.	**GARBAGE AND REFUSE**		
	Garbage Haulers - (1)	Service	1--(1)
	Independent		na
C.	**RECYCLING BUSINESS**		
	Recycling Business	Service	9--(4)

Recycling Collectors and Brokers that Responded to the County of Santa Clara Recycling Survey[1] (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

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[1] The type of business is indicated in parentheses, when available.

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

15. Waste Fibre Recovery
(Demolition Debris Recycler)
1900 W. Winton Avenue
Hayward, California 94545
(415) 732-wood

16. Contain-A-Way
(Buy-Back Center)
20/20 Recycle Centers
1731 Pomona Avenue
Corona, California 91720
(714) 279-2200

17. Encore
(End Market/Manufacturer)
860 S. 19th Street
Richmond, California 94804
(415) 234-5670

18. Oxford Tire Recycling
(Tire Recyclers)
33950 7th Street
Union City, California 94587
1-800-992-3553

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

Gilroy - Diversion Survey

RECYCLING QUANTITIES SURVEY

Business:_____ **City:**_____

Date:_____ **Surveyed by:**_____

Business Name:_____ Contact:_____

Address:_____ Phone:(____)_____

_____( )_____

Operator Contact: Address: Phone:

---

1. **Product or Service**

2. **Number of Employees**

   ☐ less than 10 ☐ 10-100 ☐ over 100

3. **Quantity of Waste**

   ☐ one 3-yard bin per week
   ☐ 2-4 bins per week
   ☐ more than 4 (debris box)

4. **Recycling**

Material	Quantity
☐ OCC	
☐ ONP	
☐ Glass	
☐ Metals	
☐ Plastics	
☐ Organic	
☐ Other	

5. **Source Reduction**

APPENDIX B

Miscellaneous Support
Documentation

B - 1 Plastic Container Codes

B - 2 Franchise Agreement With SVRD

B - 3 Conversion Factors

B - 4 Curbside Guides and Brochures

City of Gilroy
Source Reduction
& Recycling Element

Figure 4

PLASTIC CONTAINER CODES

CODE	MATERIAL
1 PETE	Poly-Ethylene Terephthalate (PET)*
2 HDPE	High Density Polyethylene
3 V	Vinyl / Polyvinyl Chloride (PVC)*
4 LDPE	Low Density Polyethylene
5 PP	Polypropylene
6 PS	Polystyrene
7 OTHER	All Other Resins and Layered Multi-Material

*Stand alone bottle code is different from standard industry identification to avoid confusion with registered marks.

Source: Society of the Plastics Industry

A G R E E M E N T

THIS AGREEMENT, made and entered into this 19th day of March, 1984, by and between the CITY OF GILROY, a municipal corporation, in the County of Santa Clara, State of California, hereinafter designated as "CITY", Party of the First Part, and SOUTH VALLEY REFUSE DISPOSAL, INC., a California corporation, Party of the Second Part, hereinafter sometimes designated as "CONTRACTOR."

W I T N E S S E T H:

That Whereas, the parties hereto have heretofore entered into an agreement or contract by the provisions of which the party of the second part has the exclusive right, priviliege, franchise and obligation to collect, transport and dispose of the garbage and refuse produced in the City of Gilroy; and

Whereas, the CITY regulates the collection and disposal of garbage, refuse and waste matter to protect the physical health and safety of its inhabitants; and

Whereas, the CITY has exanimed and found the performance and services provided by CONTRACT to inhabitants of CITY under an agreement since December 12, 1969, to have been satisfactory; and

Whereas, the City Council of CITY hereby determines that the public interest and convenience and the physical health and safety of its inhabitants require the entering into of the within agreement; and

Whereas, the CITY and CONTRACTOR desire to enter into a new agreement providing continuation by CONTRACTOR of the collection and disposal of solid waste matter accumulated in the City of Gilroy; and

Whereas, the said agreement will expire on the 12th day of December, 1984, and the parties hereto desire to renew the said agreement as of that date and provide for the mutual rights and obligations of the parties hereto thereunder.

NOW THEREFORE, IT IS AGREED by and between the parties hereto as follows:

I. That the said CONTRACTOR shall have and is hereby given the exclusive right, privilege and franchise of collecting the garbage and refuse as the said terms are defined in Section 12.1 of the Gilroy City Code, and all offal and debris, produced and accumulated, for the period of twenty (20) years from and after the 12th day of December, 1984, subject to the right of CITY to terminate the said rights of CONTRACTOR for breach of this agreement as hereinafter provided.

II. During the fifth, tenth and fifteenth years, respectively, of the term of this agreement, an audit of the performance of CONTRACTOR (herein called the "Performance Audit") shall be conducted as set forth as follows:

A. The performance audit shall:

1. be performed by a qualified firm to be selected by CITY.
2. be totally paid for by CONTRACTOR as part of its operating costs; and
3. address all appropriate areas including, but not limited

to the following areas and shall provide specific recommendations for improvement in each area, namely:

a. Overall organizational structure and management systems and procedures.

b. Efficiency of collection operations, including any analysis of routes, schedules and the impact of franchise requirements.

c. Staffing practices, including the deployment of management and supervisory personnel.

d. Financial management practices, including the CONTRACTOR's billing and collection system and its policies with regard to uncollected accounts.

e. Personnel management practices, including compensation policies and the resolution of employee grievances.

f. Procedures for receiving and resolving customer complaints and concerns, including damage to customer-owned containers and disappearance of container covers.

g. Procedures for the acquisition, maintenance and replacement of equipment, types of equipment, rationale for recent capital investments, and financing options.

h. Utilization and management of facilities.

B. If after the City Council of CITY has reviewed a particular Performance Audit and has considered any evidence presented by CONTRACTOR in connection therewith, the Council determines to its satisfaction that all covenants, provisions, terms, and conditions of this Agreement on the part of CONTRACTOR to be performed, kept and observed, have not been fully and faithfully performed, kept and observed, then this Agreement may be terminated by CITY at its option and without prejudice to any other remedy to which it may be entitled to either at law, in equity, or under this Agreement by giving written notice of termination either by mail or personal service to CONTRACTOR not less than thirty (30) days prior to the date upon which the termination is to become effective. This right of termination shall be in addition to the right of CITY to terminate this Agreement under the provisions of Section X hereof.

C. In connection with the review of a particular Performance Audit, CITY reserves the right to propose any amendment or amendments of this Agreement which the City Council of CITY determines to be necessary by reason of the findings or results of the Performance Audit to carry out the intent of the terms and conditions of this Agreement.

III. That CONTRACTOR agrees to use its best endeavors to make collection of the said garbage and refuse in accordance with the provisions of Articles 1 and 2 of Chapter 12 of the Gilroy City Code, and to perform the obligation of making the said collection diligently and systematically, and to provide the necessary equipment therefor.

IV. The rates to be charged by CONTRACTOR for making the said collections of garbage and refuse, including garden refuse, shall be fixed by Council resolution.

V. CONTRACTOR, without any cost to CITY for such use, shall dispose of the garbage and refuse collected under the provisions of this Agreement in the landfill area owned by CONTRACTOR, east of Pacheco Pass Road opposite the intersection therewith of Bloomfield Avenue. If CONTRACTOR decides to sell the permitted landfill, CONTRACTOR grants to CITY exclusive first right of refusal to match any bona fide offer to purchase within 60 days of offer.

VI. CONTRACTOR also agrees, as a part of the consideration for the awarding to it of the right, franchise and privilege for collecting garbage in the City of Gilroy, to collect for CITY, without any charge, refuse from all CITY premises, buildings and installations, including but not limited to the Library, City Parks, City garbage cans, if any, along City streets, municipal buildings, and the City Hall building.

VII. The parties hereto do further agree that CITY shall make the collections for the garbage, refuse and rubbish disposal services performed by CONTRACTOR and, as a part of CITY's collection system, it shall bill monthly, as a separate item on the usual CITY's utility bill or statement, a charge for all garbage, refuse and rubbish service performed by CONTRACTOR, and as the garbage, refuse and rubbish service collections are received by CITY, it shall deposit the same with other CITY funds and, by the 10th day of each month, issue its check to CONTRACTOR for all money collected for the garbage collection service during the previous month.

VIII. CONTRACTOR further agrees that on or before the 10th of each month, it will pay to CITY ten percent (10%) of all collections made by CITY during the previous month for said garbage collections made by CONTRACTOR. It further agrees that it will inform the Collection Division of the Department of Finance of the CITY of all billings for special customer services performed by CONTRACTOR prior to the 20th day of the month so that these may be billed by the 1st of the following month, and call at the CITY administrative offices daily to obtain information on requests for garbage disposal service or discontinuances thereof. CONTRACTOR shall furthermore investigate all complaints on garbage, refuse, and other collection services and inform the Collection Division of the CITY of the disposition of each complaint. If, by mutual agreement of both parties, CONTRACTOR bills and collects any or all charges, CONTRACTOR will remit to CITY five percent (5%) of gross dollars collected.

IX. It is agreed that CITY will not be held responsible for any unpaid accounts for the garbage, refuse, and other collection services rendered by the party of the second part.

X. Should CONTRACTOR fail, refuse, or neglect to provide satisfactory service or equipment in the making of the garbage and refuse collections provided for in this Agreement, CITY may, at its option, terminate this Agreement after giving thirty (30) days' notice.

XI. CONTRACTOR agrees that it will not transfer or assign any right or privilege arising out of this Agreement or its interest in the Agreement, nor will any party transfer his interest therein without written consent of CITY being first obtained. However, CONTRACTOR may sub-contract certain areas of refuse collection, if written consent is granted by CITY first.

XII. CONTRACTOR agrees to carry, during the life of this Agreement, public liability and property damage insurance in the limits of $1,000,000.00 and $1,000,000.00 respectively, with both types of insurance protecting CITY as well as CONTRACTOR, and CONTRACTOR further agrees to hold CITY harmless from any damage or claims for damage arising out of the operations of CONTRACTOR in carrying out the provisions of this Agreement or because of non-performance by it of any obligation placed upon it by this Agreement.

XIII. In the event of a strike of CONTRACTOR's employees, it is agreed that CITY personnel can be used to provide emergency garbage service. During such period of emergency, CONTRACTOR shall pay to CITY a sum equal to the payroll cost, including all fringe benefits, of all CITY personnel so employed, plus an additional ten percent (10%) thereof to defray administrative costs.

XIV. It is understood and agreed that this present Agreement supercedes the Agreements heretofore made between CITY and CONTRACTOR relating to the collection and disposal of garbage, debris and other matter to be collected by CONTRACTOR, and that this Agreement is intended to cover the full understanding of the parties to the contract.

XV. All rights, legal title, and interest in and to all solid waste from all sources within the service area shall be passed to CONTRACTOR upon collection and transportation of the waste. CONTRACTOR will utilize their best efforts to implement and maintain waste recovery or recycling programs. CONTRACTOR shall have the first right and option and right of first refusal for the recycling of any type of material in CONTRACTOR's service area. However, if CONTRACTOR chooses not to recycle a type of material which CITY deems recyclable, CITY may, at its option, cause or implement independent recycling programs to handle said waste.

XVI. CONTRACTOR shall provide unlimited pickup service for residences, and there shall be no charge for solid waste hauling for the CITY sponsored once a year Spring Clean Up Day.

XVII. <u>Disaster Assistance</u>

A. In the event of wartime, natural, physical or other disaster in or proximate to the city limits resulting in the declaration of a State of Emergency by the duly authorized authority or City Council, CONTRACTOR shall make available to CITY, at no cost to CITY, all trucks, equipment and personnel normally performing services under this Agreement, for emergency operations conducted or directed by CITY's emergency organization.

AMENDMENT TO

AGREEMENT

This is an AMENDMENT to the AGREEMENT, made and entered into on March 19, 1984, by and between the CITY OF GILROY, a municipal corporation, in the County of Santa Clara, State of California, hereinafter designated as "CITY", and SOUTH VALLEY REFUSE DISPOSAL, INC., a California corporation, hereinafter designated as "CONTRACTOR".

WITNESSETH:

That Whereas, the parties hereto have heretofore entered into an agreement or contract by the provisions of which the party of the second part has the exclusive right, privilege, franchise and obligation to collect, transport and dispose of the garbage and refuse produced in the City of Gilroy; and

Whereas, the CITY and CONTRACTOR desire to amend the agreement to provide increased compensation to the CITY for increased administrative costs,

NOW THEREFORE, IT IS AGREED by and between the parties hereto that paragraph VIII of said agreement shall be amended as follows:

VIII, CONTRACTOR further agrees that on or before the 10th of each month, it will pay to CITY twelve and one-half (12 1/2%) percent of all collections made by CITY during the previous month

for said garbage collections made by CONTRACTOR. It further agrees that it will inform the Collection Division of the Department of Finance of the CITY of all billings for special customer services performed by CONTRACTOR prior to the 20th day of the month so that these may be billed by the 1st of the following month, and call at the CITY administrative offices daily to obtain information on requests for garbage disposal service or discontinues thereof. CONTRACTOR shall furthermore investigate all complaints on garbage, refuse, and other collection services and inform the Collection Division of the CITY of the disposition of each complaint. If, by mutual agreement of both parties, CONTRACTOR bills and collects any or all charges, CONTRACTOR will remit to CITY five percent (5%) of gross dollars collected.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands on March 7, 1991.

PARTY OF THE FIRST PART:
CITY OF GILROY

By: Roberta H. Hughes
Mayor

PARTY OF THE SECOND PART:
SOUTH VALLEY REFUSE DISPOSAL, INC.

By: [illegible]
President

By: [illegible]
Secretary

Figure 4: Sample Weight to Volume Conversion Factors for Recyclables

page 1 of 2

Material	Volume	Weight in Pounds
Newsprint, Loose	one cubic yard	360 - 800
Newsprint,compacted	one cubic yard	720 - 1,000
Newsprint	12" stack	35
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[1]	40 - 53
PET, soda bottles, baled	30" x 62"	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	32" x 60"	400 -500
HPDE (mixed), baled	32" x 60"	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, flattened	one cubic yard	250
Aluminum cans	one full grocery bag	1.5
Aluminum cans	one large plastic grocery bag	300 - 500
Ferrous cans, whole	one cubic yard	150
Ferrous cans, flattened	one cubic yard	850

1 Gaylord size most commonly used 40"x 48""x 36""

Figure 4: Sample Weight to Volume Conversion Factors for Recyclables

page 2 of 2

Material	Volume	Weight in Pounds
Corrugated cardboard, loose	one cubic yard	300
Corrugated cardboard, baled	one cubic yard	1000 - 1200
Leaves, uncompacted[1]	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

[1] *Yard waste densities are especially variable between communities, and in different seasons within a community because of differences in types of foliage, moisture and humidity. The 1500 density factor for grass is based on program experience in Minnesota.*

Telephone 842-3358

South Valley Refuse Disposal, Inc.

• P.O. Box 515 •
GILROY, CALIFORNIA 95021

April 15, 1991

Dear Customer:

On May 1, South Valley Refuse Disposal, Corporation will begin a pilot recycling program in your neighborhood. We will collect:

* TIN CANS (please rinse them)
* ALUMINUM CANS
* BOTTLES-both soda bottles and food containers (please rinse food bottles)
* PET PLASTIC (please rinse and crush plastic bottles)
* NEWSPAPER (please bundle securely and place next to recycling bag)

Between April 30 and May 1, we will deliver special blue plastic recycling bag. Look for it in or on your waste container. To recycle:

* Place your CANS. BOTTLES AND PET PLASTIC containers in the BLUE BAG.
* TIE the bag securely to prevent spillage.
* Put the BLUE BAG and your bundles newspapers at the curb beside your garbage can on your regular garbage collection day.

The BLUE BAG will be picked up along with the regular garbage by the same collection vehicle, and taken to our recycling center. Recyclables in blue bags will be separated and processed for recycling., Each time we pick up a filled bag, we will leave a new one for you. Please **do not use blue bags for regular waste.**

The pilot recycling program will continue through August. South Valley and County staff will then analyze the results of the program and develop plans for a permanent recycling program.

South Valley Refuse Disposal is pleased to be working with Santa Clara County to provide this pilot recycling program. Recycling is very important because it conserves valuable resources, reduces the wastes that must be buried in landfills, and over the long term will help us to keep your waste collection rates as low as possible. If you have any questions about this program please call us.

HELP US TO MAKE THIS RECYCLING PROGRAM A SUCCESS!

PLEASE RECYCLE!

CURBSIDE RECYCLING

Another Good Thing About Gilroy

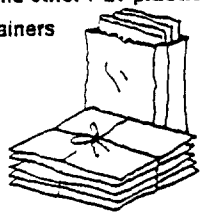
Gilroy residents will soon have another good city service—curbside recycling! Starting March 15, 1990 South Valley Refuse Disposal, Inc. will begin collecting your used bottles, cans, jars and newspapers every week on your regular garbage collection day. Watch for a curbside recycling bin and complete instructional materials to be delivered to your door within a few weeks.

You can mix glass and metal food containers as well as PET plastic containers together in your recycling bin. No sorting is necessary. Save newspaper in an ordinary paper grocery bag or bundle it and place it next to your bin.

Recycling is the environmentally sound way to save energy and natural resources and extend the useful life of our landfills. Curbside recycling—a good way for Gilroy residents to do something good for our environment.

You Can Recycle

- Plastic soda containers and other PET plastics
- Aluminum beverage containers
- Glass bottles and jars
- Tin and bi-metal cans
- Newspaper, in paper bag or tied with string
- Used motor oil



Curbside recycling is a joint project of the City of Gilroy and South Valley Refuse Disposal, Inc. For more information, call

842-5860

Door Hanger

CURBSIDE RECYCLING

Otra cosa buena de Gilroy

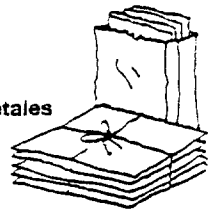
¡Los residentes de Gilroy pronto tendran otro buen servicio municipal—la recogida en la orilla de la banqueta de los materiales para recircular! Empezando el 15 de marzo de 1990, el Servicio de Recogida de Basuras de South Valley, Inc., comenzará a recoger, el día regular de sus servicio de basuras, sus botellas, latas, jarros y periódicos usados cada semana. Dentro de unas pocas semanas Ud. recibirá en su casa un recipiente con instrucciones.

Usted puede mezclar en el recipiente envases de comida de vidrio y de metal, así como de plástico PET. No es necesario separarlos. Guarde los periódicos en una bolsa de papel or amarrados y póngalos al lado del recipiente.

Para el medio ambiente, el recircular es la mejor manera de ahorrar energía y recursos naturales y de prolongar el uso de nuestros lugares para depositar basuras. Por medio de la recirculación, los residentes de Gilroy ayudarán a mejorar el medio ambiente.

Usted Puede Recircular

- Envases plásticos de soda y otros plásticos de PET
- Envases de aluminio
- Botellas y jarros de vidrio
- Latas de hojalata y de dos metales
- Periódicos en bolsas de papel o amarrados con cuerda
- Aceite de motor usado



La Recirculación a la Orilla de la Banqueta es un proyecto cooperativo de la Ciudad de Gilroy y del Servicio de Recogida de Basuras de South Valley, Inc. Para más informes, llame al

842-5860

Door Hanger

Planning

Curbside Recycling

Recent state legislation requires all California cities develop a plan to reduce their garbage by 25% within years, and 50% by the year 2000. Cities unable to meet these goals could face a fine up to $10,000-a-day. The gislation requires all California cities and counties to de-lop a Source Reduction/Recycling Element which out-lines how they expect to reach these goals. Gilroy is rrently working with the City of Morgan Hill and Santa ara County on a study of the kinds and quantities of solid waste that present the greatest problem in our spe-fic area. However, the City of Gilroy chose to imple-ent a citywide recycling program in the interim, which began in March.

Norberto Oliveira drives this recycling truck for South Valley Refuse. Gilroy residents recycled over one million pounds of newspaper in 1990.

Community-wide recycling is the most important key to achieving the 25% and 50% goals. With help from South Valley Refuse, Gilroy started a curbside recycling ogram earlier this this year with the now familiar yel-low collection bins. Unlike its north county neighbors with multiple bins and collection days, Gilroy has simplified e process. Gilroy residents have only one bin to contend with, and can place the bin at the curb on their trash day.

Gilroy's recycling began by allowing residents to discard eir newspapers, tin cans, glass bottles, aluminum cans, plas-tic soda bottles, and used motor oil. One gallon containers for sed oil are provided to residents free of charge. Most re-ently, the program has expanded to include high density plas-tic (milk & water jugs), polystyrene (clear plastic food ontainers and utensils), and styrofoam. Future recyclables ill most likely include yard waste, white and computer paper, wood wastes, batteries, cardboard products, and almost ything else that can be recycled. Yard waste is the number ne contributing factor to the saturation of landfill sites, often making up as much as 40% of landfill. Reduction and recycl-ig of yard waste is likely to become a priority in the future.

The City of Gilroy would like to give three cheers to all of he people in the community who are committed to recycling. ecords from South Valley Refuse show that Gilroy residents turned in over one million pounds of newspapers for recycling (596 tons!) in 1990. In addition, Gilroy recyclers helped to eep 221 tons of glass, six thousand gallons of oil, 27 tons of steel cans and nearly 15 thousand pounds of aluminum cans from going to waste at the landfill site. Great going, Gilroy!

CURBSIDE RECYCLING

Another Good Thing About Gilroy

The City of Gilroy and the SouthValley Refuse Disposal, Inc. are beginning curbside recycling pickup service on March 15, 1990. Curbside recycling will be part of your regular weekly household garbage collection service.

Your bottles, cans, jars and newspapers have not outlived their usefulness. They are recyclable materials which can be made into new products, saving energy, resources and scarce landfill space.

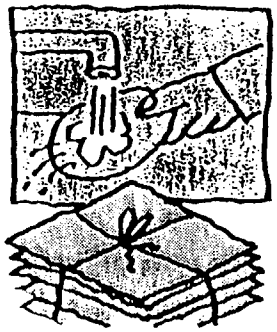
La Ciudad de Gilroy y el Servicio de Recogida de Basuras de South Valley, Inc., empezará el 15 de marzo de 1990, un servicio de recoger materiales para recircular a la orilla de la banqueta. Esta recogida será parte de su servicio regular de basuras.

Sus botellas, latas, jarros y periódicos son materiales recirculables que se pueden convertir en nuevos productos, ahorrando energía eléctrica, recursos y espacio para echar basura.

Here's How to Do It: Así Es Como Se Hace:

Food and beverage containers can be mixed together in the bin. Please rinse scraps from food containers. If you need more space, crush the aluminum cans.

Los envases de comida y bebidas pueden mezclarse en el mismo recipiente. Enjuague los restos de comida de los envases. Si necesita más espacio, aplaste las latas de aluminio.



Newspaper should be bundled separately or collected in a paper bag.

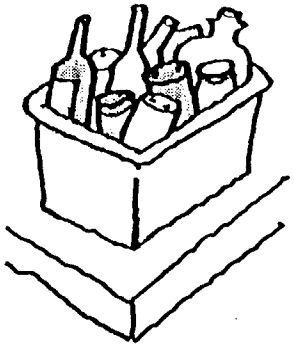
Los periódicos se amarran por separado o se ponen en una bolsa de papel.

Motor oil will be accepted in one gallon containers. Use plastic milk jugs with screw-on caps or other similar plastic containers with secured lids. A container will be provided upon request.

Se aceptará aceite de motor en envases de un galón. Use envases de plástico para leche o algo similar con tapas bien cerradas. Usted puede pedir un envase si lo necesita.

On your regular garbage collection day, put your recycling bin in plain view on the curb in front of your home–before 7 a.m. so we won't miss you. The South Valley Refuse Disposal, Inc. Recycling Truck will come by and collect the materials.

El día regular de recogida de sus basuras, ponga su recipiente para la recirculación a plena vista en la orilla de la banqueta delante de su casa–antes de las 7:00 de la mañana para que el basurero lo recoja. El camión del Servicio de Recogida de Basuras de South Valley pasará a recoger los materiales.



This recycling bin is designated for use at your address. Write your address on the side with a marking pen. If your bin is lost or damaged, call 842-5860 for a replacement.

Este recipiente para recircular está designado para usarlo en su domicilio. Con un marcador escriba su dirección en uno de los lados del recipiente. Si su recipiente se perdiera o se dañara, llame al 842-5860 para reemplazarlo.

CURBSIDE QUESTIONS?

Call the City of Gilroy at 842-5860 for missed pick-ups, damaged containers, or if you have any questions or suggestions.

Llame a la Ciudad de Gilroy at 842-5860 por falta de servicio, si el recipiente se dañara o si tuviera alguna pregunta o sugerencia.

GILROY CURBSIDE RECYCLING

We Accept

FOOD & BEVERAGE CONTAINERS

☐ All metal food and beverage cans made of aluminum, tin, steel and bi-metal.

☐ All glass bottles and jars with lids removed.

☐ PET (Polyethylene Terephthalate) plastic containers consisting of clear, green, or amber containers from soft drinks, carbonated water, peanut butter, edible oils, salad dressings, cough syrup, etc. PET plastics can be identified by a plastic dot on the bottom of the containers.

NEWSPAPER

☐ Newspaper inserts and advertisements are also acceptable.

USED MOTOR OIL

☐

We Cannot Accept

- Any hazardous wastes, such as paints, pesticides, cleaning products or anti-freeze
- Ceramics or Pyrex
- Drinking glasses
- Light bulbs
- Magazines, junk mail or scrap paper
- Plastic milk containers or any plastic other than PET plastics.
- Window glass

Podemos Aceptar

ENVASES DE COMIDAS Y BEBIDAS

Todas las latas de aluminio, hojalata, acero y dos metales.

Todas las botellas y jarros de vidrio sin tapaderas.

Envases de plástico PET (Polietileno Tereftalate) transparentes, verdes o ámbar para sodas, agua gaseosa, manteca de maní, aceites comestibles, aderezos para ensaladas, jarabe para la tos, etcétera. El envase de plástico PET se identifica por un «punto» en la parte de abajo.

PERIÓDICO

Se aceptan también las hojas extras insertadas en los periódicos.

ACEITE DE MOTOR USADO

No Podemos Aceptar

- Desperdicios peligrosos como pinturas, pesticidas, productos de limpieza o anticongelantes
- Cerámicas o «Pirex»
- Vasos para beber
- Bombillas eléctricas
- Revistas, correo de propaganda o papel de desecho
- Envases de plástico para leche o cualquier otro plástico que no sea de PET
- Vidrio de ventanas

APPENDIX C

Support Documentation

C - 1 Evaluation Questionnaires For Years 1987 Through 1991

C - 2 Household Hazardous Waste Collection Information

City of Gilroy
Household Hazardous
Waste Element

Attachment 2 CIWMB Form 303

State of California

California Integrated Waste Management Board

HOUSEHOLD HAZARDOUS WASTE COLLECTION INFORMATION

CIWMB-303 (1/90) Event Date: June 23, 1990

Name of Local Agency: City of Gilroy Fire Department

Phone: (408)848-03

Address:	City:	County:	State:	Zip:
7070 Chestnut Street,	Gilroy,	Santa Clara Co.	CA	95020

(Please Use Applicable Units of Measurement)

Waste Category	Gallons	Pounds	Number of Containers	Number of Drums (55 gal)	Management Method
A. Flammable					
1. Used Oil	1800			32.7	RC
2. Paints					
a. Latex					
b. Oil Base	495			9	F1
3. Solvents, thinners, and stains	165			3	F1
4. Gasoline and oil (mixed)	-				
5. Aerosols (excluding pesticides/ herbicides)	260	120		15	D1
6. Other		30		2	D1
FLAMMABLE SUBTOTAL	2,720	150		61.7	-

Management Methods

Ru	Re-used	Tr	Transfer Station	T-3	Stabilization
Rc	Recycled	T-1	Incinerator	D	Land Disposal
Bf	Blended Fuel	T-2	Aqueous Treatment	Other	

Waste Category	Gallons	Pounds	Number of Containers	Number of Drums (55 gal)	Management Method
B. Pesticides					
Such as herbicides, insecticides, fungicides, etc.					
PESTICIDE SUBTOTAL					
C. Corrosives					
1. Acids a. Oxidizing	60			3	D1
b. Non-Oxidizing		5		0.1	D1
2. Alkaline	60			3	D1
CORROSIVES SUBTOTAL	120	5		6.1	-
D. Oxidizers					
Excluding acids	46			2.3	D1
OXIDIZERS SUBTOTAL	46			2.3	-
E. Miscellaneous					
1. Car Batteries	77			1.4	RC
2. Dry Cells					
3. Mercury					
4. Other	20			1	RC
MISC. SUBTOTAL	97			2.4	
TOTAL WASTE COLLECTED	2,983	155		72.5	-

Gilroy only 87 Surveys returned. 127 households participated

FREE HOUSEHOLD HAZARDOUS WASTE COLLECTION
FOR MORGAN HILL - GILROY - SOUTH SANTA CLARA COUNTY
MAY 18, 1991 EVALUATION QUESTIONNAIRE

1. Where do you live?
___ UNINCORPORATED/COUNTY ___ MORGAN HILL CITY X GILROY CITY

2. How did you hear about this collection day? (check all that apply)
57.5% FLYER 6.5% MORGAN HILL TIMES 35% DISPATCH 5% RADIO
16% S.J. MERCURY/NEWS ___ OTHER (EXPLAIN) 3% City Gov't 2% other

3. How many households are represented by your delivery of household hazardous waste? single homes 75.8%, Two homes 19.5% three homes 1.2%
four homes 2.2% 5 homes 1.3%

4. Have you participated in previous South County Hazardous Waste Collection Days? 19.5% YES 80.5% NO
If 'YES', are you coming again because: (check all that apply)
11% Found products you forgot to bring last year.
2% Purchased more products and now need to get rid of them.
3% Bought too much of a product for your needs.
2% Other (EXPLAIN) Old oil

5. What types of products did you bring today? 65% OIL BASE PAINT
42% WASTE OIL 13% OTHER AUTO 35% HOUSEHOLD CLEANERS 34% GARDEN
4% HOBBY ___ OTHER (EXPLAIN) 1% pool supplies, 4% paint thinner, stain
(16% brought waste oil only) 5% other

6. What is the age of the oldest product you brought? 1 month to 35 years

7. Do you feel this is a worthwhile service for the community?
100% YES 0 NO

8. How often would you like this service to be available? 2% WEEKLY
16% MONTHLY 43% 6 MONTHS 39% YEARLY 0 2 YEARS 0 3 YEARS

9. In order that this service may be offered in the future, it might be necessary to charge a fee. Would you support a garbage bill increase of 10 cents per week? 94% YES 6% NO

10. If a permanent Household Hazardous Waste Collection facility was available at this site, would you be able to use this service if: (check all that apply)
44% THE SITE WAS OPEN ON WEEKENDS ONLY
68% THE SITE WAS OPEN DURING NORMAL BUSINESS HOURS ONLY
8% THE SITE WAS OPEN ON WEEKNIGHTS ONLY

11. If you had not been able to use this service, what would you have done with your waste(s)? 36% PUT IN TRASH 51% STORE FOREVER
6% POUR DOWN SINK OR TOILET 4% POUR DOWN STORM DRAIN
0% BURY IN BACKYARD 18% DON'T KNOW ___ OTHER 2% re-cycle 3% other

12. Are you interested in using or learning about less hazardous alternatives to household chemicals? 92% YES 8% NO

13. Did you know that you can bring waste oil year round to this site?
78% YES 22% NO (F.Y.I. 10 gallon maximum @ 25 cents per gallon)

14. Have you any comments or suggestions on the project as a whole?

What about latex paint?
Waste oil should be taken by the gas stations.

Good Job!

THANK YOU

10. Quantity of waste collected in CY 1990. (See Attachment A for Instructions for Completing Form)

		Actual Volume	# of Drums	Mgmt Method	Disposal Cost per Drum
A. FLAMMABLE & POISON					
	Flammable solid	30#	2	DI	350
	Oil-Base Paint	495 gal.	9	FI	290
	Poison (Excl. Aerosols)	260 gal.	13	DI	500
	Reactive and explosive	---	---	---	---
	Solvent	165 gal.	3	FI	290
	Subtotal	920 gal. 30#	27		
B. ACID	Inorganic Acid				
	Organic Acid				
	Subtotal	60 gal.	3	DI	230
C. BASE	Inorganic Base				
	Organic Base				
	Subtotal	60 gal.	3	DI	230
D. OXIDIZER	Neutral Oxidizers	---	---	---	---
	Organic Peroxides	---	---	---	---
	Oxidizing Acid	---	---	---	---
	Oxidizing Base	46 gal.	2.3	DI	190
	Subtotal	46 gal.	2.3		
E. PCB-CONTAINING	PCB-Containing Paint	---	---	---	---
	Other PCB Waste	---	---	---	---
	Subtotal	---	---	---	---
F. AEROSOL	Corrosive Aerosols	5#	0.1	DI	335
	Flammable Aerosols	120#	2	DI	665
	Poison Aerosols	---	---	---	---
	Subtotal	125#	2.1		---
G. RECLAIMABLE	Antifreeze	---	---	---	---
	Car Batteries (1 Gal each)	77	1.4	RC	No Charge
	Latex Paint	---	---	---	---
	Used Motor Oil/Oil Products	1800 gal.	32.7	RC	No Charge
	Subtotal	1877 gal.	34.1		
H. OTHER	Medical Waste	---	---	---	---
	Household Batteries	---	---	---	---
	Other	20 gal.	1	1	505
	Subtotal	20 gal.	1		
GRAND TOTAL		2983 gal. 155#	70.4		---

Gilroy participants approximately 110

G-ILR

FREE HOUSEHOLD HAZARDOUS WASTE COLLECTION
FOR MORGAN HILL - GILROY - SOUTH SANTA CLARA COUNTY
JUNE 3, 1989 EVALUATION QUESTIONNAIRE

1. Where do you live?
___ MORGAN HILL CITY ___ GILROY CITY ___ COUNTY (SPECIFY) _____

2. How did you hear about this collection day? (check all that apply)
44% FLYER 4% MORGAN HILL TIMES 44% DISPATCH 1% RADIO
13% S.J. MERCURY/NEWS 8% OTHER (EXPLAIN) the dump

3. Are you delivering wastes for households other than your own?
9% YES / HOW MANY? 1-2 88% NO

4. Have you participated in previous South County Hazardous Waste Collection Days? 18% YES 82% NO

5. Do you consider buying a container smaller than the "Economy Size" when purchasing household/automotive/garden chemicals to lessen the "costs" of disposal of unused product? 57% YES 33% NO
0% OTHER (EXPLAIN) _____

6. What types of products did you bring today? 34% OIL BASE PAINT
27% WASTE OIL 12% OTHER AUTO 18% HOUSEHOLD CLEANERS 17% GARDEN
5% HOBBY ___ OTHER(EXPLAIN) * waste oil only 27%

7. What is the age of the oldest product you brought? 25 years

8. Do you feel this is a worthwhile service for the community?
95% YES 0% NO

9. How often would you like this service to be available? 3% WEEKLY
31% MONTHLY 39% 6 MONTHS 25% YEARLY 0% 2 YEARS 1% 3 YEARS

10. In order that this service may be offered in the future, it might be necessary to charge a fee. Would you support a garbage bill increase of 10 cents per month ($1.20 per year)? 78% YES 20% NO

11. Would you be able to use this service if: (check all that apply)
87% THE SITE WAS OPEN ON WEEKENDS ONLY
48% THE SITE WAS OPEN DURING NORMAL BUSINESS HOURS ONLY
19% THE SITE WAS FURTHER AWAY

12. If you had not been able to use this service, what would you have done with your waste(s)? 1% POUR DOWN SINK OR TOILET
1% POUR DOWN STORM DRAIN 27% STORE FOREVER 16% PUT IN TRASH
3% BURY IN BACKYARD 36% DON'T KNOW 21% OTHER take to gas station pay for proper disposal

13. Would you utilize a year round recycling facility for oil-based paints, or anti-freeze if it were located at San Martin Transfer Systems and charged only the actual recycling cost of $1.75 per gallon? 57% YES 35% NO

14. Are you interested in using/learning about less hazardous alternatives to household chemicals? 63% YES 22% NO

15. Have you any comments or suggestions on the project as a whole?

SIGNATURE _____ LIC PLATE _____

THANK YOU

- not all % add up to 100 because not everyone answered all questio

Morgan Hill participants approximately 2x

FREE HOUSEHOLD HAZARDOUS WASTE COLLECTION
FOR MORGAN HILL - GILROY - SOUTH SANTA CLARA COUNTY
JUNE 3, 1989 EVALUATION QUESTIONNAIRE

1. Where do you live?
___ MORGAN HILL CITY ___ GILROY CITY ___ COUNTY (SPECIFY) _____

2. How did you hear about this collection day? (check all that apply)
49% FLYER 26% MORGAN HILL TIMES 14% DISPATCH 2% RADIO
17% S.J. MERCURY/NEWS 11% OTHER (EXPLAIN) other people

3. Are you delivering wastes for households other than your own?
8% YES / HOW MANY? 1-6 86% NO

4. Have you participated in previous South County Hazardous Waste Collection Days? 12% YES 81% NO

5. Do you consider buying a container smaller than the "Economy Size" when purchasing household/automotive/garden chemicals to lessen the "costs" of disposal of unused product? 47% YES 42% NO
<1% OTHER (EXPLAIN) not worth repeating

6. What types of products did you bring today? 32% OIL BASE PAINT
24% WASTE OIL 9% OTHER AUTO 10% HOUSEHOLD CLEANERS 15% GARDEN
5% HOBBY ___ OTHER (EXPLAIN) * waste oil only 39%

7. What is the age of the oldest product you brought? 25 years

8. Do you feel this is a worthwhile service for the community?
97% YES 3% NO → represents the one person who said he drank hazardous waste to dispose of it

9. How often would you like this service to be available? 2% WEEKLY
6% MONTHLY 61% 6 MONTHS 14% YEARLY 1% 2 YEARS 1% 3 YEARS

10. In order that this service may be offered in the future, it might be necessary to charge a fee. Would you support a garbage bill increase of 10 cents per month ($1.20 per year)? 79% YES 17% NO

11. Would you be able to use this service if: (check all that apply)
83% THE SITE WAS OPEN ON WEEKENDS ONLY
32% THE SITE WAS OPEN DURING NORMAL BUSINESS HOURS ONLY
19% THE SITE WAS FURTHER AWAY

12. If you had not been able to use this service, what would you have done with your waste(s)? 0% POUR DOWN SINK OR TOILET
3% POUR DOWN STORM DRAIN 25% STORE FOREVER 11% PUT IN TRASH
2% BURY IN BACKYARD 43% DON'T KNOW 11% OTHER take to gas station

13. Would you utilize a year round recycling facility for oil-based paints, or anti-freeze if it were located at San Martin Transfer Systems and charged only the actual recycling cost of $1.75 per gallon? 61% YES 33% NO

14. Are you interested in using/learning about less hazardous alternatives to household chemicals? 78% YES 16% NO

15. Have you any comments or suggestions on the project as a whole?

SIGNATURE _____ LIC PLATE _____

THANK YOU

- not all % add up to 100 because not everyone answered all questions

Total participants approximately 330 (101) TOTAL

FREE HOUSEHOLD HAZARDOUS WASTE COLLECTION
FOR MORGAN HILL - GILROY - SOUTH SANTA CLARA COUNTY
JUNE 3, 1989 EVALUATION QUESTIONNAIRE

1. Where do you live?
43% MORGAN HILL CITY 33% GILROY CITY 24% COUNTY (SPECIFY) _____

2. How did you hear about this collection day? (check all that apply)
41% FLYER 14% MORGAN HILL TIMES 23% DISPATCH 1% RADIO
14% S.J. MERCURY/NEWS 4% OTHER (EXPLAIN) the dump

3. Are you delivering wastes for households other than your own?
8% YES / HOW MANY? 1-12 92% NO

4. Have you participated in previous South County Hazardous Waste Collection Days? 15% YES 85% NO

5. Do you consider buying a container smaller than the "Economy Size" when purchasing household/automotive/garden chemicals to lessen the "costs" of disposal of unused product? 59% YES 41% NO
___ OTHER (EXPLAIN) _____

6. What types of products did you bring today? 22% OIL BASE PAINT
18% WASTE OIL 6% OTHER AUTO 9% HOUSEHOLD CLEANERS 11% GARDEN
3% HOBBY ___ OTHER (EXPLAIN) * 21% brought only waste oil

7. What is the age of the oldest product you brought? 25 years

8. Do you feel this is a worthwhile service for the community?
99.6% YES 0.4% NO (1 person said no but this was the same person who said he drank hazardous waste to dispose of it)

9. How often would you like this service to be available? 3% WEEKLY
22% MONTHLY 52% 6 MONTHS 21% YEARLY 1% 2 YEARS 1% 3 YEARS

10. In order that this service may be offered in the future, it might be necessary to charge a fee. Would you support a garbage bill increase of 10 cents per month ($1.20 per year)? 82% YES 18% NO

11. Would you be able to use this service if: (check all that apply)
84% THE SITE WAS OPEN ON WEEKENDS ONLY
38% THE SITE WAS OPEN DURING NORMAL BUSINESS HOURS ONLY
19% THE SITE WAS FURTHER AWAY

12. If you had not been able to use this service, what would you have done with your waste(s)? 0.5% POUR DOWN SINK OR TOILET
2% POUR DOWN STORM DRAIN 27% STORE FOREVER 13% PUT IN TRASH
2% BURY IN BACKYARD 38% DON'T KNOW 18% OTHER go to gas station

13. Would you utilize a year round recycling facility for oil-based paints, or anti-freeze if it were located at San Martin Transfer Systems and charged only the actual recycling cost of $1.75 per gallon? 65% YES 35% NO

14. Are you interested in using/learning about less hazardous alternatives to household chemicals? 80% YES 20% NO

15. Have you any comments or suggestions on the project as a whole?
Thank you - Good Idea - Keep It UP - Keep Up the Good Work

SIGNATURE _____ LIC PLATE _____

THANK YOU

- not all % add up to 100 because not everyone answered all questions

Unincorporated participants approximately 7 %

FREE HOUSEHOLD HAZARDOUS WASTE COLLECTION
FOR MORGAN HILL - GILROY - SOUTH SANTA CLARA COUNTY
JUNE 3, 1989 EVALUATION QUESTIONNAIRE

1. Where do you live?
___ MORGAN HILL CITY ___ GILROY CITY ___ COUNTY (SPECIFY) _____

2. How did you hear about this collection day? (check all that apply)
44% FLYER 11% MORGAN HILL TIMES 20% DISPATCH 0% RADIO
16% S.J. MERCURY/NEWS 16% OTHER (EXPLAIN) the dump

3. Are you delivering wastes for households other than your own?
5% YES / HOW MANY? 1-3 92% NO

4. Have you participated in previous South County Hazardous Waste Collection Days? 15% YES 84% NO

5. Do you consider buying a container smaller than the "Economy Size" when purchasing household/automotive/garden chemicals to lessen the "costs" of disposal of unused product? 52% YES 31% NO
___ OTHER (EXPLAIN) _____

6. What types of products did you bring today? 36% OIL BASE PAINT
36% WASTE OIL 8% OTHER AUTO 13% HOUSEHOLD CLEANERS 20% GARDEN
3% HOBBY ___ OTHER(EXPLAIN) * waste oil only 26%

7. What is the age of the oldest product you brought? 20 years

8. Do you feel this is a worthwhile service for the community?
92% YES 6% NO

9. How often would you like this service to be available? 3% WEEKLY
15% MONTHLY 49% 6 MONTHS 25% YEARLY 3% 2 YEARS 2% 3 YEARS

10. In order that this service may be offered in the future, it might be necessary to charge a fee. Would you support a garbage bill increase of 10 cents per month ($1.20 per year)? 75% YES 13% NO

11. Would you be able to use this service if: (check all that apply)
82% THE SITE WAS OPEN ON WEEKENDS ONLY
34% THE SITE WAS OPEN DURING NORMAL BUSINESS HOURS ONLY
20% THE SITE WAS FURTHER AWAY

12. If you had not been able to use this service, what would you have done with your waste(s)? 0% POUR DOWN SINK OR TOILET
2% POUR DOWN STORM DRAIN 26% STORE FOREVER 11% PUT IN TRASH
0% BURY IN BACKYARD 33% DON'T KNOW 23% OTHER take to gas station or place of work

13. Would you utilize a year round recycling facility for oil-based paints, or anti-freeze if it were located at San Martin Transfer Systems and charged only the actual recycling cost of $1.75 per gallon? 60% YES 25% NO

14. Are you interested in using/learning about less hazardous alternatives to household chemicals? 72% YES 15% NO

15. Have you any comments or suggestions on the project as a whole?

SIGNATURE _____ LIC PLATE _____

THANK YOU

— not everyone answered all questions there some % do not add up to 100

127
137

FREE MORGAN HILL-GILROY HOUSEHOLD HAZARDOUS WASTE COLLECTION

JUNE 4, 1988 EVALUATION QUESTIONNAIRE

1. Where do you live?
   71 Morgan Hill — 55 Gilroy — 1 Other (Explain) San Martin
   75 — 58

2. How did you hear about this collection day? (Check all that apply)
   11 Water bill insert — 3 Poster — 44 Dispatch
   2 Radio — 6 Word of mouth — 8 Miracle Miles
   51 Flyer — 24 Morgan Hill Times — 12 Other (Explain) TV/MERCURY NEWS/

3. Are you delivering wastes for households other than your own?
   5 Yes How many? 7 — 122 No

4. Did you know what a household hazardous material/waste was before this pilot project?
   110 Yes — 16 No

5. Did you know that it is not a safe practice to dispose of household hazardous waste in the garbage before this project? 121 Yes — 5 No

6. What types of products did you bring today?
   85 Auto — 40 Garden — 29 Household Cleaners — 13 Hobby
   Other (Explain) 40 / PAINT oil base, wood preservative / swimming pool chemicals / furniture stripper

7. What is the approximate age of the oldest product you brought? (SEE ATTACHED SHEET) years old

8. Do you feel this is a worthwhile service for the community? Yes 121 No Ø

9. How often do you think this service should be available?
   3 weekly — 56 every 6 months — Ø every 2 years
   41 monthly — 26 every year — Ø every 3 years

10. In order that this service may be offered in the future, it might be necessary to charge a fee. Would you support a garbage bill increase of 10¢ per month ($1.20 per year) Yes 114 No 8

11. Would you be able to use this service if: (Check all that apply)
    112 the site was open on weekends only
    44 the site was open during normal business hours only
    31 the site was further away

12. If you had not been able to use this service, what would you have done with your waste(s)?
    2 pour down sink or toilet — 2 bury in backyard
    Ø pour down storm drain — 18 put in trash
    34 store forever — 41 don't know
    35 other (explain) GAS STATION / COMMERCIAL FACILITY / THRU WORK

13. Would you utilize a year round recycling facility for oil-based paints, if it were located at San Martin Transfer Systems and charged only the actual recycling cost of $1.75/gallon? Yes 69 No 45

14. Have you any comments or suggestions on the project as a whole? Thank you — great idea. Valuable service, good idea. Great for M.H. Residents, Good project, Get more Gas Stations to cooperate, good idea but will not be as effective as it is convenient, Excellent project; would be helpful to have a pamphlet to suggest methods of disposal. Take ammunition impt community service. Great service. Is it possible to have gas stations cooperate for waste oil collection. I like it

THANK YOU FOR TAKING THE TIME TO FILL OUT THIS SURVEY

FREE MORGAN HILL-GILROY HOUSEHOLD HAZARDOUS WASTE COLLECTION

JUNE 4, 1988 EVALUATION QUESTIONNAIRE

1. Where do you live?
   55% Morgan Hill 45% Gilroy less than 1% Other (Explain) _____

2. How did you hear about this collection day? (Check all that apply)
   9% Water bill insert 2% Poster 35% Dispatch
   2% Radio 5% Word of mouth 6% Miracle Miles
   40% Flyer 19% Morgan Hill Times 9% Other (Explain) T.V. / S.J. News

3. Are you delivering wastes for households other than your own?
   4% Yes How many? _____ 96% No

4. Did you know what a household hazardous material/waste was before this pilot project?
   87% Yes 13% No

5. Did you know that it is not a safe practice to dispose of household hazardous waste in the garbage before this project? 96% Yes 4% No

6. What types of products did you bring today?
   67% Auto 31% Garden 23% Household Cleaners 10% Hobby
   Other (Explain) 31% oil-based paints, stains, pool chemicals, wood preservative

7. What is the approximate age of the oldest product you brought? 30 years o

8. Do you feel this is a worthwhile service for the community? Yes 100% No 0%

9. How often do you think this service should be available?
   2% weekly 44% every 6 months 0% every 2 years
   32% monthly 20% every year 0% every 3 years

10. In order that this service may be offered in the future, it might be necessary to charge a fee. Would you support a garbage bill increase of 10¢ per month ($1.20 per year) Yes 90% No 10%

11. Would you be able to use this service if: (Check all that apply)
    88% the site was open on weekends only
    35% the site was open during normal business hours only
    24% the site was further away

12. If you had not been able to use this service, what would you have done with your waste(s)?

    2% pour down sink or toilet 2% bury in backyard
    0% pour down storm drain 14% put in trash
    27% store forever 32% don't know
    28% other (explain) Take to gas station, disposal site, work

13. Would you utilize a year round recycling facility for oil-based paints, if it were located at San Martin Transfer Systems and charged only the actual recycling cost of $1.75/gallon? Yes 54% No 35%

14. Have you any comments or suggestions on the project as a whole? Thank-you - good idea
    Valuable service - great - good project - important community service -
    I like it - Keep it up - more frequent - This is the way to go - outstanding

THANK YOU FOR TAKING THE TIME TO FILL OUT THIS SURVEY

FREE SOUTH COUNTY HOUSEHOLD HAZARDOUS WASTE COLLECTION
PILOT PROJECT
EVALUATION QUESTIONNAIRE

CONGRATULATIONS! You are participating in the first South County effort to protect our families and groundwater from household hazardous waste. Please answer the following questions to help us serve you better in the future.

1. Where do you live?
   49.3% Morgan Hill
   36% Gilroy
   10.6% San Martin
   0 Coyote
   4% Other (Explain) _____

2. How did you hear about this collection day? (Check all that apply)
   13.3% Water bill insert
   1.3% Radio
   30.6% Flyer
   5.3% Poster
   8% Word of mouth
   17.3% Morgan Hill Times
   36% Dispatch
   29.3% Miracle Miles
   6.7% Other (Explain) _____

3. Are you delivering wastes for households other than your own?
   16% Yes 84% No 1-5 How Many?

4. Did you know what a household hazardous material/waste was before this pilot project?
   Yes 85.3% No 13.3%

5. Did you know that it is not a safe practice to dispose of household hazardous waste in the garbage before this project? Yes 90.6% No 5.3%

6. What types of products did you bring today?
   20% Auto 46.6% Garden 25.3% Household Cleaners 17.3% Hobby
   Other (Explain) 33.3%

7. What is the approximate age of the oldest product you brought? 20 years old

8. Do you feel this is a worthwhile service for the community? Yes 100% No 0

9. How often do you think this service should be available?
   2.7% weekly
   22.7% monthly
   54.7% every 6 months
   16% every year
   2.7% every 2 years
   1.3% every 3 years

10. In order that this service may be offered in the future, it might be necessary to charge a fee. Would you support a garbage bill increase of 5¢ per month (60¢ per year) Yes 88% no 9.3%

11. Would you be able to use this service if: (Check all that apply)
    82.7% the site was open on weekends only
    33.3% the site was open during normal business hours only
    20% the site was further away

12. Would you be willing to participate in a household hazardous materials exchange program where homeowners could recycle their unwanted but useable material through a waste exchange newsletter. Citizens could advertise that their products were available for the "price" of picking them up? Yes 68% No 32%

-OVER-

13. If you had not been able to use this service, what would you have done with your waste(s)?

1.3% pour down sink or toilet
2.7% pour down storm drain
37.3% store forever
6.7% bury in backyard
21.3% put in trash
8% other (explain) don't know
8% call for more info on disposal

14. Have you any ideas on how best to educate "the public" about the potential hazards of household products?
newspaper articles; stuff fires
radio public service announcements;
school programs
public workshops
MH cable TV
door to door volunteers
water bill insert

15. Have you any comments or suggestions on the project as a whole?
The disposal of this type of waste should be barred from disposal or with household garbage. All citizens should be required to use this servi
This service should be broadened to the point where all recyclable materials separated from household garbage and only these items of little value or hazard are

THANK YOU FOR TAKING THE TIME TO FILL OUT THIS SURVEY

Thanks - Very worthwhile - Very well run Good Project! - Very good idea - Good idea. Easy access to list of what exactly hazardous waste products are - Good deal - I'm sure glad it's being done - Great idea, about time - I think it is excellent - More programs like this - It's very worthwhile - It's worthwhile - I think it is a very good idea - Very good idea for hard to dispose of items - It couldn't have come at a better time for me - You're doing great - Very good! - It is good to have a place to get rid of hazardous waste that may endanger the life of someone - Great! It is terrific to dispose of these products safely - This is an excellent idea and worth repeating - Good idea, most people are aware of the dangers of household chemicals, especially those that are now outlawed and are unsure of what to do with them safely.

75 surveys 16 Mar 1[illegible]

FREE SOUTH COUNTY HOUSEHOLD HAZARDOUS WASTE COLLECTION
PILOT PROJECT
EVALUATION QUESTIONNAIRE

CONGRATULATIONS! You are participating in the first South County effort to protect our families and groundwater from household hazardous waste. Please answer the following questions to help us serve you better in the future.

1. Where do you live?
   - 37 Morgan Hill
   - 27 Gilroy
   - 8 San Martin
   - 0 Coyote
   - ____ Other (Explain) 1- Almaden 1- San Jose 1- Sunnyvale (volun

2. How did you hear about this collection day? (Check all that apply) 1- No Answer (NA
   - 10 Water bill insert
   - 1 Radio
   - 23 Flyer
   - 4 Poster
   - 6 Word of mouth
   - 13 Morgan Hill Times
   - 27 Dispatch
   - 22 Miracle Miles
   - ____ Other (Explain)

   1- AAUW 1- Gilroy Fire 1- Cable TV 1- Safety Specialists 1- Santa Clara Health (volunteer)

X 3. Are you delivering wastes for households other than your own?
   12 Yes 63 No 1-5 How Many?

4. Did you know what a household hazardous material/waste was before this pilot project?
   Yes 64 No 10 1-NA

5. Did you know that it is not a safe practice to dispose of household hazardous waste in the garbage before this project? Yes 68 No 4 3-NA

6. What types of products did you bring today? 4-NA
   15 Auto 35 Garden 19 Household Cleaners 13 Hobby
   Other (Explain) 17-paint 6-pool chem 2-farm 1-chlordane 1-cooking oil 1-pa[illegible] 1-lighter fluid 1-driveway sealer, 1-DDD 2-lab chem 1-benzoic acid

7. What is the approximate age of the oldest product you brought? ____ years old 7- [illegible]
   1-6mo 1-1yr 7-2yr 7-3yr 4-4yr 11-5yr 4-6yr 2-7yr 4-8yr 13-10yr 2-12yr 4-15yr 1-16yr 7-20yr

8. Do you feel this is a worthwhile service for the community? Yes 75 No 0

9. How often do you think this service should be available?
   - 2 weekly
   - 17 monthly
   - 41 every 6 months
   - 12 every year
   - 2 every 2 years
   - 1 every 3 years
   - 1-daily 1-NA

10. In order that this service may be offered in the future, it might be necessary to charge a fee. Would you support a garbage bill increase of 5¢ per month (60¢ per year) Yes 66 no 7 2-NA

11. Would you be able to use this service if: (Check all that apply) 1-NA
    - 62 the site was open on weekends only
    - 25 the site was open during normal business hours only
    - 15 the site was further away

12. Would you be willing to participate in a household hazardous materials exchange program where homeowners could recycle their unwanted but useable material through a waste exchange newsletter. Citizens could advertise that their products were available for the "price" of picking them up? Yes 51 No 24 3-NA

1 - not sure

-OVER-

* based on answers to #3 it is assumed approx. 100 households participa[illegible]

13. If you had not been able to use this service, what would you have done with your waste(s)?

6 - call fire c for i

1	pour down sink or toilet	5	bury in backyard
2	pour down storm drain	16	put in trash
28	store forever	6	other (explain)
		12 - NA	

2 - dump on roo
1 - leave in b
6 - don't know
1 - use waste s

14. Have you any ideas on how best to educate "the public" about the potential hazards of household products?

15. Have you any comments or suggestions on the project as a whole?

THANK YOU FOR TAKING THE TIME TO FILL OUT THIS SURVEY

APPENDIX D

Support Documentation

D - 1 City Resolution No. 89 - 37 Supporting County-wide Collection Program

D - 2 Three Jurisdiction Agreement for HHw Day in 1991

City of Gilroy
Household Hazardous
Waste Element

RESOLUTION NO. 89 - 37

RESOLUTION OF THE COUNCIL OF THE CITY OF GILROY SUPPORTING THE DEVELOPMENT OF A COUNTYWIDE HOUSEHOLD HAZARDOUS WASTE PROGRAM.

WHEREAS, Santa Clara Valley Water District is a local agency of the State of California empowered to manage the water supplies within the area of Santa Clara County and, in particular, to take all actions necessary and appropriate to the protection of groundwater from contamination; and

WHEREAS, there is evidence that the improper disposal of household hazardous products into the household trash, into a storm drain or sanitary sewer, into a sump, or into a municipal solid waste landfill may result in injuries to refuse workers or in a leachate that may be harmful to public health and safety by reason of entry into aquifers which provide potable water.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Gilroy supports the concept of a countywide program for household hazardous waste education and collection; and

BE IT FURTHER RESOLVED that those jurisdictions in Santa Clara County that do not provide and fund household hazardous waste collection opportunities for their residents be encouraged to do so; and

BE IT FURTHER RESOLVED that this Council supports the development of a proposal for such a countywide program and its consideration by the Intergovernmental Council.

PASSED AND ADOPTED by the Council of the City of Gilroy this 5th day of July, 1989, by the following vote:

AYES: COUNCILMEMBERS: GAGE, HALE, KLOECKER, MUSSALLEM, PALMERLEE, VALDEZ and HUGHAN.

NOES: COUNCILMEMBERS: None

ABSENT: COUNCILMEMBERS: None

APPROVED:

/s/ ROBERTA H. HUGHAN

I, SUSANNE E. STEINMETZ, City Clerk of the City of Gilroy, do hereby certify that the attached Resolution No. 89-37 is an original resolution, duly adopted by the Council of the City of Gilroy at a regular meeting of said Council held on the 5th day of July, 19 89, at which meeting a quorum was present.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the Official Seal of the City of Gilroy this 6th day of July, 19 89.

Susanne E. Steinmetz
City Clerk of the City of Gilroy

(Seal)

THREE AGENCY AGREEMENT FOR
HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAM

This Agreement is made by and among the Cities of Morgan Hill and Gilroy and the County of Santa Clara.

RECITALS

A. The three agencies desire to provide a safe, convenient, and economical means for the residents of Morgan Hill, Gilroy, and the County unincorporated areas South of San Jose to dispose of household hazardous waste (HHW). These wastes include common household products such as household cleaning products, spot remover, furniture polish, solvents, oven cleaner, insecticides, oil base paints, antifreeze and car batteries. Residents of the areas listed above will be eligible to bring HHW to the Household Hazardous Waste collection Day where these wastes will be accepted for proper disposal, treatment, or recycling.

B. The three agencies desire to provide this hazardous waste collection program to residents without a fee in order to encourage the proper disposal of toxic products and avoid disposal in the garbage, sanitary sewer, storm drain system, or on the ground, in a manner which creates a health and environmental hazard.

C. The three agencies desire to schedule a Household Hazardous Waste Collection Day on Saturday, May 18, 1991 at the San Martin Transfer Station, 14070 Llagas Avenue, San Martin.

NOW, THEREFORE, MORGAN HILL, GILROY, AND SANTA CLARA COUNTY AGREE AS FOLLOWS:

1. PURPOSE
The purpose of this agreement is to state the terms and conditions under which each of the parties will participate in a HHW Collection Program with the collection site available to the residents of any of the Cities of Morgan Hill and Gilroy and residents of County unincorporated areas South of San Jose.

2. CONTRACT FOR SERVICES
The agencies will enter into one joint agreement with South Valley Refuse Disposal/Norcal Waste Systems, Inc. (the Contractor) to provide the HHW Collection Day.

3. SERVICES
The Contractor shall provide the appropriate personnel, equipment, and supplies to properly receive, package, label, haul, and dispose of the residential hazardous wastes. Certain hazardous waste materials shall not be accepted for collection and disposal. These include compressed gas cylinders, radioactive materials, latex paint, aerosol paint, and explosives.

4. SCHEDULE
The HHW Collection Day shall be Saturday, May 18. 1991. The hours of collection shall be from 9:00 a.m. to 2:00 p.m.

5. COST OF PROGRAM
The program shall be provided at no charge to the residents of the Agencies. The total cost of the Program shall be divided equally among each of the three Agencies, regardless of the number of participating households, or the quantity, quality, or character of the hazardous waste collected from residents.

6. PAYMENT
Upon receipt of itemized invoices outlining total cost, waste inventories, and manifests returned from the final disposal sites, the Agencies will make payment to the Contractor.

7. TERMINATION
This Agreement shall be effective on the date below written and shall remain in full force and effect until payment has been made.

8. LIABILITY
Morgan Hill, Gilroy, and Santa Clara County, and their governing bodies or boards, officers, employees, or volunteers, shall not be responsible for any damage or liability occurring by reason of anything done by the other party under or in connection with this agreement. It is also agreed that each party shall fully indemnify, hold harmless, and defend each other party from any liability imposed for injury occurring by reason of anything done or omitted to be done by that responsible indemnifying party in connection with this Agreement. Indemnity shall extend to reimbursement of reasonable incurred costs and attorney fees.

9. INDEPENDENT CONTRACTOR
It is hereby understood by each of the parties that the Contractor shall be employed as an independent Contractor.

WITNESS THE EXECUTION HEREOF by the Cities of Morgan Hill and Gilroy and County of Santa Clara.

This Agreement is dated _____

CITY OF MORGAN HILL

BY:

City Manager

CITY OF GILROY

BY:

City Administrator

COUNTY OF SANTA CLARA

BY:

Health Services Administrator

APPROVED AS TO FORM & LEGALITY:

County Counsel

AGREEMENT BETWEEN AND AMONG THE CITIES OF GILROY AND MORGAN HILL, SANTA CLARA COUNTY AND SOUTH VALLEY REFUSE DISPOSAL/NORCAL WASTE SYSTEMS, INC. FOR PROVISION OF A HOUSEHOLD HAZARDOUS WASTE COLLECTION DAY

This Agreement is made and entered into this 16th day of May, 1991 between and among the Cities of Gilroy and Morgan Hill and Santa Clara County (hereafter AGENCIES), and South Valley Refuse Disposal/Norcal Waste Systems, Inc. (hereafter CONTRACTOR).

RECITALS

WHEREAS, AGENCIES have determined that it is in the best interest of the residents of each jurisdiction to provide a safe and convenient means for the residents of Morgan Hill and Gilroy, and residents of the unincorporated South County areas to dispose of their household hazardous wastes; and

WHEREAS, CONTRACTOR represents that it has the experience and expertise necessary to provide the Household Hazardous Waste Collection Day;

NOW THEREFORE, AGENCIES and CONTRACTOR do hereby agree as follows:

SECTION 1. TERM OF AGREEMENT

Subject to compliance with the terms and conditions of this Agreement, the term of Agreement shall be May 18, 1991, 8:00 a.m. until such time as all household hazardous wastes are removed from the collection site.

SECTION 2. SCOPE OF SERVICES

A. Household Hazardous Waste Collection Day

CONTRACTOR will provide household hazardous waste collection services as described below. CONTRACTOR'S services will be provided at a one-day Household Hazardous Waste (HHW) Collection Day. Residents of Morgan Hill and Gilroy and unincorporated South County areas will be eligible to bring household hazardous wastes to the collection site during the scheduled hours. CONTRACTOR will accept these household hazardous wastes, segregate, pack and dispose of said wastes according to the terms of this Agreement. Wastes from businesses will not be accepted and it will be the responsibility of the Agencies to determine eligibility status.

B. Site

The San Martin Transfer Station will be the site of the HHW Collection Day. The site will be set up at least one (1) hour before opening of the HHW Collection Day.

CONTRACTOR will make every effort to remove all materials from the site within 24 hours after the termination of the HHW Collection Day.

C. Schedule

The HHW Collection Day will take place Saturday, May 18, 1991 and collections will be received between the hours of 9:00 a.m. and 2:00 p.m.

D. Staffing

The Contractor's Program Supervisor will oversee the project team in the collection of hazardous waste and processing of those wastes. This position provides for the event's leadership, ensures that the contract and variance conditions

for the event are followed and is responsible for the packaging, documentation, storage and disposal of the household hazardous materials. The Program Supervisor shall also serve as Safety Supervisor, ensuring that the event is conducted in a safe manner and that all personnel wear appropriate safety equipment. The project team will also include 1 Lead Chemist, 2 Additional Chemists, and 6 Technicians.

The project staff will have the training and educational qualifications as outlined in the HHW Operation Plan, attached as Exhibit A.

E. Waste Handling Procedures

1. Contractors responsibility for the waste

   The contractors responsibility for HHW items commences upon resident's arrival at the site.

2. Unloading materials

   Technicians will unload hazardous waste items from the vehicles. Waste will be screened for unacceptable materials.

3. Segregation and Packing

   Paint, motor oil, batteries, and other materials will be separated and delivered to the appropriate designated area. All non-hazardous waste shall be either recycled or placed into dumpsters for disposal at a Class 3 landfill.

   Where there is a need for a determination as to acceptance or destination of materials the Agencies shall make the determination.

4. Waste Minimization

The contractor shall endeavor to reuse/recycle as much waste material as feasible. The contractor shall combine (bulk) containers of compatible materials to reduce the volume of waste and provide the fewest possible number of lab packs. Wastes will be packaged and handled as outlined in Exhibit A.

5. Reuse Table

Selected household products in their original containers with legible labels and in good condition will be taken from the waste collection area and placed at a reuse table tended by the Agencies. These commodities will be made available to the public by the Agencies for reuse at no charge to the receiver. Prior to receiving these commodities from the Agencies, the receiver must sign a waiver attached hereto as Exhibit B.

Miscellaneous

At no time during the collection operation will the waste be left unattended.

Lead-acid batteries will be sent for recycling to a battery reprocessor.

All hazardous waste manifests and bills of lading will be prepared in accordance with State and Federal regulations.

At no time will waste be left unattended.

F. Operations Plan

CONTRACTOR will follow the procedures outlined in the Operation Plan submitted to the AGENCIES.

Results of Chemical and Physical Analysis of Waste

- Unknown waste received will be analyzed to determine the hazardous category by using CONTRACTOR'S ID kit and hazardous materials experience.
- Chemical and physical analysis will become part of the operating record.

Unacceptable Wastes

- Radioactive waste
- Explosives
- Compressed gas cylinders (not including aerosols)
- Reactive
- Latex paint

Packaging Materials

All waste shall be packaged in proper Department of Transportation (DOT) containers with proper DOT labeling.

Containment System

The household hazardous waste receiving area will be on concrete and asphalt surfaces. No additional floor covering is planned. However, plastic tarps will be available if needed.

The working areas will consist of a paint and solvent consolidation area, a chemical segregation area, chemical handling areas, a reuse area, and a chemical packaging area. Inventory sheets for each container shall be prepared and additional categorization performed, meeting both DOT and disposal site categorization requirements.

Safety Precautions

It is mandatory that all operations personnel wear appropriate safety equipment including:

1.) Protective clothing

2.) Protective gloves

3.) Safety eyewear

4.) Boots or shoes with steel toe and shank (for personnel involved in drum transfer).

Pouring and consolidation of solvents is only to be performed in a designated area away from the public. Safety gear and safety precautions shall be utilized.

"No Smoking," "No Drinking," and "No Eating" signs shall be posted in appropriate areas.

First Aid facilities including an eye wash, shower station or hosing device and fire extinguishers shall be available.

Recyclers and Treatment, Storage and Disposal Sites

CONTRACTOR will use recyclers and treatment, storage and disposal sites listed in Exhibit C attached hereto.

SECTION 3. FEE SCHEDULE

Fees charged to AGENCIES by CONTRACTOR are listed in Exhibit D, attached hereto.

SECTION 4. PAYMENT SCHEDULE

Upon receipt of the itemized invoice that outlines total costs, waste inventories, and manifests returned from final disposal sites, AGENCIES shall pay CONTRACTOR for providing the services outlined above, according to the fee schedule outlined in Exhibit D attached hereto. Payment from each jurisdiction will be as detailed in the AGENCY AGREEMENT FOR HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAM, Exhibit E.

SECTION 5. INSURANCE

CONTRACTOR shall maintain at CONTRACTOR'S expense not less than the insurance coverages set forth below. CONTRACTOR shall furnish Certificates of Insurance to AGENCIES evidencing the required coverage prior to the HHW Collection Day. There shall be a specific contractual liability endorsement extending CONTRACTOR'S coverage to include the contractual liability assumed by CONTRACTOR pursuant to this Agreement. Thirty (30) days notice must be given, in writing, to AGENCIES of any pending change in the limits of liability or of any cancellation or modification of the policy.

Workers' Compensation and Employer Liability Insurance

CONTRACTOR shall have in effect during the entire life of this Agreement Workers' Compensation and Employer Liability Insurance providing full statutory coverage.

Liability Insurance

CONTRACTOR shall take out and maintain during the life of this Agreement such Bodily Injury Liability and Property Damage Liability Insurance as shall offer protection while performing work covered by this Agreement from any and all claims for damages for bodily injury, including accidental death, as well as any and all claims for property damage which may arise from CONTRACTOR'S operations under this Agreement, whether such operations be by the CONTRACTOR or by any subcontractor or by anyone directly or indirectly employed by either of them. Such insurances shall be combined single limit bodily injury and property damage for each occurrence and shall not be less than the amount specified as follows:

Commercial General Liability

Per occurrence	$1,000,000
General aggregate limit	$2,000,000

Motor Vehicle Liability Insurance $1,000,000

These policies shall be endorsed to include the Cities of Morgan Hill and Gilroy and the County of Santa Clara, and their governing bodies or boards, officers, employees, and volunteers as additional insured. The coverage shall contain no special limitations on the scope of protection afforded to the participating Agencies, their employees, officers, agents or contractors. Certificates of such insurance with original endorsements affecting coverage required by this section shall be made available to all agencies prior to any work being done. Insurance is to be obtained only through insurers with a Best's" Rating of no less than A+.

Contractor's insurance coverage shall be primary insurance as respects the Agencies, their governing bodies or boards, officers, employees and volunteers. Any insurance or self-insurance maintained by the Agencies, their governing bodies or boards, officers, employees and volunteers shall be excess of the Contractor's insurance and shall not contribute with it.

SECTION 6. INDEPENDENT CONTRACTOR

CONTRACTOR shall perform all work and services described herein as an independent contractor and not as an officer, agent, servant or employee of AGENCIES. CONTRACTOR shall be solely responsible for the acts and omissions of its officers, agents, employees, contractors and subcontractors, if any. Nothing herein shall be construed as creating a partnership or joint venture between AGENCIES and CONTRACTOR. No person performing any of the work or services described hereunder shall be considered an officer, agent, servant or employee of AGENCIES, nor shall any such person be

entitled to any benefits available or granted to employees of AGENCIES.

SECTION 7. ASSIGNMENTS

Without the written consent of AGENCIES, this agreement is not assignable in whole or in part. Any assignment by CONTRACTOR without the written consent of AGENCIES violates this agreement and shall automatically terminate this agreement.

CONTRACTOR shall not employ subcontractors, except as listed in Exhibit B, to carry out the responsibilities undertaken pursuant to this contract without the written consent of AGENCIES.

All assignees or subcontractors approved by AGENCIES shall be subject to the same terms and conditions applicable to CONTRACTOR under this agreement and CONTRACTOR shall be liable for the assignee's or subcontractor's acts or omissions.

All agreements between CONTRACTOR and subcontractor or assignee for services pursuant to this agreement shall be provided to AGENCIES.

SECTION 8. ALTERATION OF AGREEMENT

This agreement is entire and contains all the terms and conditions agreed upon by the parties. No alteration or variation shall be valid unless made in writing and signed by the parties hereto, and no oral understanding or agreement shall be binding on the parties hereto.

SECTION 9. HOLD HARMLESS

The Contractor agrees to indemnify, defend and hold harmless, participating Agencies, their employees, officers, agents and volunteers, from any and all liabilities, claims, losses, and expenses, including attorney's fees and court costs, in any manner

caused by, arising out of, or in connection with, either directly or indirectly, the construction or installation of the work, the guarding of the work, the use of improper materials in the construction of the work, or the negligent, willful, or intentional acts or omissions by the Contractor or his agent during the progress of the work or at any time before its final acceptance.

SECTION 10. RECORD

CONTRACTOR agrees to provide to AGENCIES, to any Federal or State department having monitoring or review authority, to AGENCIES' authorized representatives and/or their appropriate audit agencies upon reasonable notice, access to and the right to examine and audit all records and documents necessary to determine compliance with relevant Federal, State, and local statutes, rules and regulations, and this Agreement, and to evaluate the quality, appropriateness and timeliness of services performed.

CONTRACTOR shall maintain and preserve all records relating to this Agreement in its possession and shall assure the maintenance of such records in the possession of any third party performing work related to this Agreement for a period of four (4) years from the termination date of this Agreement, or until audit findings are resolved, whichever is later.

SECTION 11. COMPLIANCE WITH APPLICABLE LAWS

All services to be performed by CONTRACTOR pursuant to this Agreement shall be performed in accordance with all applicable Federal, State, County and Municipal laws, ordinances, regulations, including but not limited to appropriate licensure and certification regulations, provisions pertaining to the confidentiality of records and applicable quality assurance regulations.

SECTION 12. NOTICES

All notices required or contemplated by this Agreement shall be personally served or mailed postage prepaid, addressed to the parties as follows:

AGENCIES: SHARON KOHLMANNSLEHNER
MORGAN HILL FIRE DEPARTMENT
18980 MONTEREY ROAD
MORGAN HILL, CA 95037

CONTRACTOR: LARRY SWEETSER
NORCAL WASTE SYSTEMS, INC.
FIVE MELLON CIRCLE, SUITE 304
SAN FRANCISCO, CA 94134

SECTION 13. CONTROLLING LAW

The validity of this Agreement and its terms or provisions, as well as the rights and duties of the parties hereunder, and interpretation and performance of this Agreement shall be governed by the laws of the State of California.

WITNESS THE EXECUTION HEREOF ON THE DAY AND YEAR FIRST HEREIN ABOVE WRITTEN.

CITY OF MORGAN HILL

By: ----------
City Manager

Date: 5-16-91

COUNTY OF SANTA CLARA

By: ----------
Health Services Administrator

Date: ----------

Approved as to Form & Legality

By: ----------

Solid Waste Program Manager

City Attorney

Date: May 17, 1991

CONTRACTOR

By: ---

Date: May 15, 1991

Approved as to Form & Legality

By: ---
County Counsel

GILROY

By: ---
City Administrator

Sec. 12.61. Alternative enforcement.

As an alternative to criminal enforcement, both the City of Gilroy and the authorized recycling agent have the independent authority of civilly enforcing any provisions of this ordinance, to and including the authority to seek treble damages pursuant to California Government Code Section 66764. The City Administrator may invoke these remedies, or any of them, whenever he/she deems it appropriate.

Sec. 12.62. Exceptions.

(a). Nothing contained in this ordinance shall preclude any person, business, or other entity from disposing of segregated recyclable materials without utilizing the City of Gilroy's official authorized recycling agent, provided that the recyclable materials are disposed of by such persons individually or by their agents to an authorized recyclable materials collection site or station that has been duly approved and authorized as such by an appropriate governmental authority or other appropriate authority.

(b). Nothing herein contained shall prevent any person, business, or other entity from allowing recyclable materials to be picked-up, dropped-off, or otherwise donated to any charitable entity.

(c). Nothing herein contained shall inhibit, regulate or restrict any recycling center, nonprofit drop-off program or recycling processor as permitted by "The Solid Waste Management Resource and Recovery Act of 1972", or the "California Beverage Container Recycling and Litter Reduction Act of 1986".

SECTION II. All other ordinances and parts of ordinances in conflict herewith are hereby repealed.

SECTION III. This ordinance shall take effect and be in

full force thirty (30) days from and after its adoption and approval.

PASSED AND ADOPTED this 20th day of February 1990 by the following vote:

AYES:	COUNCILMEMBERS:	GAGE, HALE, KLOECKER, MUSSALLEM, VALDEZ and HUGHAN
NOES:	COUNCILMEMBERS:	NELSON
ABSENT:	COUNCILMEMBERS:	NONE

APPROVED:

/s/ ROBERTA H. HUGHAN
Mayor

ATTEST:

Susanne K. Steinmetz
City Clerk

RESOLUTION NO. 89 - 37

RESOLUTION OF THE COUNCIL OF THE CITY OF GILROY SUPPORTING THE DEVELOPMENT OF A COUNTYWIDE HOUSEHOLD HAZARDOUS WASTE PROGRAM.

WHEREAS, Santa Clara Valley Water District is a local agency of the State of California empowered to manage the water supplies within the area of Santa Clara County and, in particular, to take all actions necessary and appropriate to the protection of groundwater from contamination; and

WHEREAS, there is evidence that the improper disposal of household hazardous products into the household trash, into a storm drain or sanitary sewer, into a sump, or into a municipal solid waste landfill may result in injuries to refuse workers or in a leachate that may be harmful to public health and safety by reason of entry into aquifers which provide potable water.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Gilroy supports the concept of a countywide program for household hazardous waste education and collection; and

BE IT FURTHER RESOLVED that those jurisdictions in Santa Clara County that do not provide and fund household hazardous waste collection opportunities for their residents be encouraged to do so; and

BE IT FURTHER RESOLVED that this Council supports the development of a proposal for such a countywide program and its consideration by the Intergovernmental Council.

PASSED AND ADOPTED by the Council of the City of Gilroy this 5th day of July, 1989, by the following vote:

AYES: COUNCILMEMBERS: GAGE, HALE, KLOECKER, MUSSALLEM, PALMERLEE, VALDEZ and HUGHAN.

NOES: COUNCILMEMBERS: None

ABSENT: COUNCILMEMBERS: None

APPROVED:

/s/ ROBERTA H. HUGHAN
Mayor

ATTEST:

/s/ SUSANNE E. STEINMETZ
City Clerk

RESOLUTION NO. 89 - 37

ORDINANCE NO. 90-3

AN ORDINANCE OF THE CITY OF GILROY ENACTING CHAPTER 12, ARTICLE IV OF THE GILROY CITY CODE PERTAINING TO RECYCLABLE MATERIALS

THE CITY COUNCIL OF THE CITY OF GILROY DOES ORDAIN AS FOLLOWS:

SECTION I. Chapter 12, Article IV of the Gilroy City Code is enacted to read as follows:

CHAPTER 12

ARTICLE IV, RECYCLABLE MATERIALS

Sec. 12.57. Collection of recyclable materials by unauthorized persons prohibited.

It is unlawful for any person, business, or entity, other than the City of Gilroy's official authorized recycling agent to collect recyclable materials in the City of Gilroy unless excepted by the provisions of this ordinance, or state or federal law.

Sec. 12.58. Recyclable materials property of recyclable agent.

From the time of placement of recyclable materials at the curbside, or other appropriate designated collection locations or in any container used for recycling provided by the authorized recycling agent, said recyclable materials shall be and become the property of the authorized recycling agent.

Sec. 12.59. Unauthorized use of containers prohibited.

The use of receptacles or other containers provided by the authorized recycling agent or the pick-up of such recyclable materials from any designated collection location by anyone other than the authorized recycling agent is prohibited.

Sec. 12.60. Violations are infractions.

Any person engaged in the activities prohibited in section 12.59 is guilty of an infraction.

Any such prohibited activity in more than one location within the City of Gilroy shall constitute a separate and distinct offense.

RESOLUTION NO. 89 - 37

RESOLUTION OF THE COUNCIL OF THE CITY OF GILROY SUPPORTING THE DEVELOPMENT OF A COUNTYWIDE HOUSEHOLD HAZARDOUS WASTE PROGRAM.

WHEREAS, Santa Clara Valley Water District is a local agency of the State of California empowered to manage the water supplies within the area of Santa Clara County and, in particular, to take all actions necessary and appropriate to the protection of groundwater from contamination; and

WHEREAS, there is evidence that the improper disposal of household hazardous products into the household trash, into a storm drain or sanitary sewer, into a sump, or into a municipal solid waste landfill may result in injuries to refuse workers or in a leachate that may be harmful to public health and safety by reason of entry into aquifers which provide potable water.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Gilroy supports the concept of a countywide program for household hazardous waste education and collection; and

BE IT FURTHER RESOLVED that those jurisdictions in Santa Clara County that do not provide and fund household hazardous waste collection opportunities for their residents be encouraged to do so; and

BE IT FURTHER RESOLVED that this Council supports the development of a proposal for such a countywide program and its consideration by the Intergovernmental Council.

PASSED AND ADOPTED by the Council of the City of Gilroy this 5th day of July, 1989, by the following vote:

AYES: COUNCILMEMBERS: GAGE, HALE, KLOECKER, MUSSALLEM, PALMERLEE, VALDEZ and HUGHAN.

NOES: COUNCILMEMBERS: None

ABSENT: COUNCILMEMBERS: None

APPROVED:

/s/ ROBERTA H. HUGHAN
Mayor

ATTEST:

/s/ SUSANNE E. STEINMETZ
City Clerk

RESOLUTION NO. 89 - 37

I, SUSANNE E. STEINMETZ, City Clerk of the City of Gilroy, do hereby certify that the attached Resolution No. 89-37 is an original resolution, duly adopted by the Council of the City of Gilroy at a regular meeting of said Council held on the 5th day of July, 19 89, at which meeting a quorum was present.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the Official Seal of the City of Gilroy this 6th day of July, 19 89.

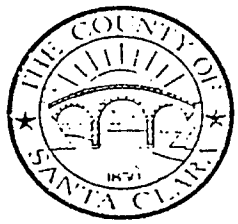
Susanne E. Steinmetz
City Clerk of the City of Gilroy

(Seal)

County of Santa Clara
Health Department

2220 Moorpark Avenue
San Jose, California 95128

RECEIVED
FEB 11 1991
COUNTY OF SANTA CLARA
OFFICE OF TOXICS AND SOLID WASTE
MANAGEMENT



Prepared by: Isao Kobashi
Erwin Koehler

Reviewed by: Lee Esquibel
Delia B. Alvarez

Submitted by: J. Kennedy Bartholet

February 7, 1991

TO: Sally Reed, County Executive

FROM: J. Kennedy Bartholet, Health Services Administrator

SUBJECT: Countywide Household Hazardous Waste Collection Program

RECOMMENDED ACTION

It is recommended that the Board of Supervisors:

Approve the concept of a Countywide Household Hazardous Waste Collection Program, including provision of services to unincorporated residents.

Authorize the County Division of Environmental Health Services to administer a Countywide Household Hazardous Waste (HHW) Pilot Collection Program for the first year of operations and to administer any on-going Program resulting from the Pilot Countywide HHW Program.

FISCAL IMPLICATIONS

- No monies from the County General Fund would be required.
- Participating cities would pay their proportional share of Program costs based on the services provided to their residents.
- Funds for serving county unincorporated residents would come from garbage surcharge fees.

Board of Supervisors: Susanne Wilson, Zoe Lofgren, Ron Gonzales, Rod Diridon, Dianne McKenna
County Executive: Sally R. Reed

permit or operated a hazardous waste facility under interim status pursuant to Section 25200 or 25200.5 since January 1, 1984.
(Added by Stats. 1989, Ch. 1257.)

25113. (a) "Disposal" means either of the following:
(1) The discharge, deposit, injection, dumping, spilling, leaking, or placing of any waste so that the waste or any constituent of the waste is or may be emitted into the air or discharged into or on any land or waters, including groundwaters, or may otherwise enter the environment.
(2) The abandonment of any waste.
(b) The amendment of the section made at the 1989-90 Regular Session of the Legislature does not constitute a change in, but is declaratory of, the existing law.
(Amended by Stats. 1989, Ch. 1436.)

25114. "Disposal site" means the location where any final deposition of hazardous waste occurs.
(Amended by Stats. 1977, Ch. 1039.)

25115. "Extremely hazardous waste" means any hazardous waste or mixture of hazardous wastes which, if human exposure should occur, may likely result in death, disabling personal injury or serious illness caused by the hazardous waste or mixture of hazardous wastes because of its quantity, concentration, or chemical characteristics.
(Amended by Stats. 1977, Ch. 1039.)

25115.1. "Federal act" means the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. Sec. 6901 et seq.).
(Added by Stats. 1988, Ch. 1061.)

25116. "Handling" means the transporting or transferring from one place to another, or pumping, processing, storing, or packaging of hazardous waste, but does not include the handling of any substance before it becomes a waste.
(Amended by Stats. 1980, Ch. 878.)

25116.5. (Repealed by Stats. 1986, Ch. 1187.)

25117. (a) "Hazardous waste" means either of the following:
(1) A waste, or combination of wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may either:
(A) Cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness.
(B) Pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, or disposed of, or otherwise managed.
(2) A waste which meets any of the criteria for the identification of a hazardous waste adopted by the department pursuant to Section 25141.
(b) "Hazardous waste" includes, but is not limited to, RCRA hazardous waste.