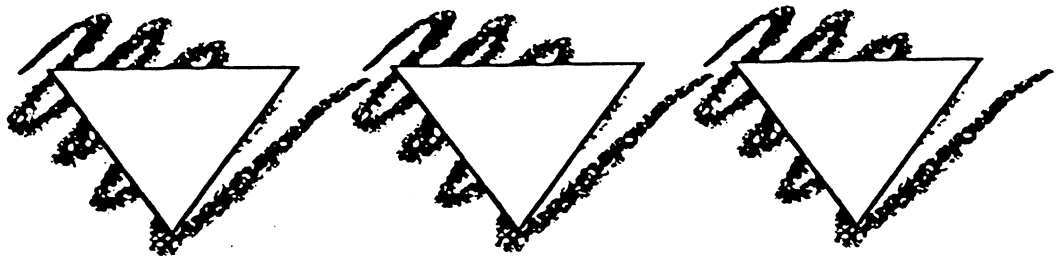
HOUSEHOLD HAZARDOUS WASTE ELEMENT



UNINCORPORATED VENTURA COUNTY

JANUARY 1992

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Unincorporated Area of Ventura County
Household Hazardous Waste (HHW) Element

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EXECUTIVE SUMMARY

This section provides a synopsis of the important components of the Household Hazardous Waste Element. Areas of emphasis are current HHW generation, selected HHW programs and implementation periods, program costs, and quantities of estimated HHW to be collected through implementation of selected programs.

Estimate of Total Generation of HHW

In the waste generation study, total generation is equal to the amount disposed at the landfill plus the amount diverted. In the case of HHWs, however, this equation does not account for all materials that are being stored, or illegally disposed on the ground, sewer, and storm drains. The 1990 data from the waste generation study in combination with the data collected from household surveys indicates that total generation of HHW by the residents of the unincorporated areas is at least 650 tons per year, or 15 pounds per resident per year.

Selected HHW Programs

The County has evaluated and selected a variety of collection, recycling, load checking, and public information and education programs to achieve reductions in the generation and improper disposal of HHW within the community (see Table ES-1). The selected collection programs currently include participation in existing VRSD and City recyclable HHW facilities, continued reliance on VRSD periodic one-day collection programs for the western Ventura County unincorporated areas for the short term, and participation in a subregional mobile collection program in the Eastern Ventura County. For unincorporated communities which are geographically remote from existing or proposed programs, the County will investigate the integration of recyclable HHW collection facilities with proposed solid waste recycling drop-off centers. At all existing and future collection programs and facilities, the County will continue to adhere to the waste reduction hierarchy of feasible reuse and recycling of collected HHW before treatment or disposal is considered. The City also continues to support all existing loadchecking programs at solid waste landfills within the County.

The County will also continue public information and education programs which target schools, residences, and government. School programs will provide the needed curricula to educate students about the impact of hazardous materials on their health and environment. Residential

education programs will focus on encouraging people to buy non-hazardous products whenever possible, to purchase only what is needed, to use up what they have, and give unneeded products to others who can use them. Examples of residential programs include multi-media outreach, distribution of informational materials, development of a solid waste hotline, and a speakers bureau. County governmental programs will focus on supporting or encouraging legislation which enables HHW recycling and collection activities. Governmental programs will also provide the County the opportunity to show residents that non-toxic alternatives can work.

Table ES-1
Summary of Selected HHW Programs
Unincorporated Ventura County

Program	Short-Term	Medium-Term
Recyclables HHW Collection Facility		
West County	■	■
East County	■	■
Periodic Collection for Non-Recyclables		
West County	■	■
East County	■	
Subregional Mobile Collection Facility (East County)	■ (pilot program)	■
Continued Load Checking Support at the Landfills	■	■
Continued Practice of Recycling HHW Collected	■	■
Public Education and Information: Schools	■	■
Public Education and Information: Residential	■	■
Public Education and Information: Governmental	■	■

HHW Program Costs

Capital and annual costs in Table ES-2 have been estimated for each major program area. In this table, costs for specific programs are separated into capital costs, operation and maintenance costs, and staffing expenditures. Implementation of the selected programs over this period will require an annual expenditure ranging from $4,700 to $246,000 annually.

Table ES-2
Household Hazardous Waste Element Implementation Costs (1991-1995)
Unincorporated Ventura County

Programs	Cap. Cost	1991 Costs		1992 Costs		1993 Costs		1994 Costs		1995 Costs	
		O&M	Staff	O&M	Staff	O&M	Staff	O&M	Staff	O&M	Staff
Collection/Recycling/Load Checking		(1% participation)		(6% participation)		(8% participation)		(10% participation)		(12% participation)	
Periodic Collection											
West County/Ojai Valley/SCRV	$0	$600[1]	$500	$3,800[2]	$500	$97,000[3]	$500	$63,100[2]	$500	$146,000[3]	$500
East County	$0	$0	$0	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Recyclable HHW Facility											
West County/Ojai Valley/SCRV	$0	$500	$500	$3,100	$500	$4,200	$500	$5,200	$500	$6,200	$500
East County	(5)	$0	$0	$1,000	$1,000	$1,400	$1,000	$1,700	$1,000	$2,000	$1,000
Mobile Collection Pilot Program East County	$0	$0	$500	$36,500	$12,500	$48,700	$12,500	$60,800	$12,500	$73,000	$12,500
Load Checking Program	$0	no expense to County since landfills are operated by special districts or private entities.									
TOTAL		**$1,100**	**$1,500**	**$44,400**	**$14,500**	**$151,300**	**$14,500**	**$130,800**	**$14,500**	**$227,200**	**$14,500**
Public Information and Education											
School Programs	$0	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]
Residential Programs	$0	$800	$1,250	$2,800	$4,200	$1,300	$1,800	$1,400	$2,100	$1,500	$2,300
Governmental Programs	$0	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]
TOTAL		**$800**	**$1,250**	**$2,800**	**$4,200**	**$1,300**	**$1,800**	**$1,400**	**$2,100**	**$1,500**	**$2,300**
TOTAL FUNDING REQUIRED:		**$1,900**	**$2,750**	**$47,200**	**$18,700**	**$152,600**	**$16,300**	**$132,200**	**$16,600**	**$228,700**	**$16,800**

Table ES-2
Household Hazardous Waste Element Implementation Costs (1991-1995)
Unincorporated Ventura County

Programs	Cap. Cost	1991 Costs		1992 Costs		1993 Costs		1994 Costs		1995 Costs	
		O&M	Staff	O&M	Staff	O&M	Staff	O&M	Staff	O&M	Staff
FUNDING SOURCES											
Solid Waste Fund		$800	$2,750	$40,300	$18,700	$51,400	$16,300	$63,900	$16,600	$76,500	$16,800
VRSD HHW Fee at Bailard		$1,100	$0	$6,900	$0	$101,200	$0	$68,300	$0	$152,200	$0
TOTAL FUNDING SOURCES:		$1,900	$2,750	$47,200	$18,700	$152,600	$16,300	$132,200	$16,600	$228,700	$16,800
ANNUAL PROGRAM COST:			$4,650		$65,900		$168,900		$148,800		$245,500

[1]Collection Day in Ojai Valley and Santa Clara River Valley only.
[2]Collection Day in West County only.
[3]Collection Day in all three areas.
[4]Periodic Collection in the East County will not be pursued if mobile collection is cost effective.
[5]Capital Costs allocation will require future negotiation with applicable cities.
[6]Costs are already included in the SRRE Public Information and Education Component.

Types and Quantities of HHW Collected from Programs

Table ES-3 summarizes the anticipated collection of HHW by program type. Curbside recycling of waste oil was not included since this measure will not be implemented unless recyclables and mobile collection fail to meet anticipated participation objectives.

Table ES-3
Unincorporated Ventura County
Types and Yearly Quantities of HHW Collected from all Programs[1]

Collection Program	Participation Rate	HHW Material Types					
		Motor Oil (gals/yr)	Latex Paint (gals/yr)	Oil Paint/ Flammables (gals/yr)	Antifreeze (gals/yr)	Lead Acid Batteries (lbs/yr)	Lab Packs[2] (gals/yr)
Recyclables Collection	20%	7836.	3387.	0	note 4	note 4	0
Periodic Collection[3]	12%	3789.	1638.	3398.	note 4	note 4	3789.
Mobile Collection	20%	7836.	3387.	5859.	note 4	note 4	6533.
Waste Management Method:		Rerefine/ Fuel	Recycle	Fuel	Recycle	Recycle	Land Disposal

[1]Maximum anticipated collection from each individual program if implemented separately.
[2]Lab packs include pesticides, corrosives, miscellaneous flammables, aerosols, oxidizers.
[3]Quantities collected every other year.
[4]Difficult to determine with existing data.

Education and Public Information Program Summary

Provided in Table ES-4 is a cross reference of all portions of this document which comply with the various regulatory sections identified in the Education and Public Information Section 18751.7 of the HHWE regulations.

Table ES-4
Summary of Compliance with Section 18751.7 of the HHWE Regulations

Regulatory Section No.	Description	HHWE Section/Title
18751.7 (a)	Objectives	Section 2.2 Public Education and Information Programs
18751.7 (b)	Existing Program Description	Section 3.4 Public Education and Information Programs
18751.7 (c)	Identification of Preferred Alternatives	Section 5.4 Identification of Preferred Alternatives for Public Education and Information Programs
18751.7 (d)(1)	Program Implementation: Targeted Audiences	Section 8.4 Targeted Audiences
18751.7 (d)(2)	Program Implementation: Responsibilities	Section 8.1 Agencies Responsible for Implementation
18751.7 (d)(3)	Program Implementation: Identification of Required Tasks	Section 8.3 Implementation Schedule (See Table 8-1)
18751.7 (d)(4)	Program Implementation: Schedules	"
18751.7 (d)(5)	Program Implementation: Identification of Costs/Revenues	Section 8.2 Cost, Revenues, and Revenue Sources
18751.7 (d)(6)	Program Implementation: Promotion of Safe Substitutes	Section 4.4.2 Residential Education Programs
18751.7 (e)(1)	Monitoring and Evaluation: Methods Measuring Achievement	Section 9.1 Selected Monitoring Methods
18751.7 (e)(2)	Monitoring and Evaluation: Program Evaluation Criteria	Section 9.2 Evaluation Criteria for Program Effectiveness
18751.7 (e)(3)	Monitoring and Evaluation: Responsibilities	Section 9.3 Roles and Responsibilities
18751.7 (e)(4)	Monitoring and Evaluation: Identification of Costs/Revenues	Section 9.4 Funding Requirements and Revenue Sources
18751.7 (e)(5)	Monitoring and Evaluation: Contingency Measures	Section 9.6 Contingency Measures for Non-Attainment of Objectives
18751.7 (e)(6)	Monitoring and Evaluation: Monitoring and Reporting Schedule	Section 9.5 Monitoring and Reporting Schedule

HOUSEHOLD HAZARDOUS WASTE ELEMENT
Unincorporated Ventura County

Chapter 1.0

Background

1.0 BACKGROUND

The intent of the Household Hazardous Waste Element (HHWE) is to provide Ventura County with a plan that contains specific policies and programs to safely reduce, collect, recycle, treat, and dispose of household hazardous wastes (HHWs) generated by residents within the unincorporated areas. This element complies with Sections 18750 through 18751.8 of Article 6.3 of Chapter 9, "Planning Guidelines and Procedures for Preparing and Revising Countywide Integrated Waste Management Plans (DRAFT)".

1.1 What Is Household Hazardous Waste (HHW)?

Household hazardous wastes (HHWs) are waste consumer products which contain constituents that exhibit explosive, flammable, corrosive, reactive and/or toxic properties. When these products are discharged into sewers or disposed with household refuse, they pose significant detrimental health effects and environmental damage. Households may be the single largest producers of hazardous waste with an estimated generation rate of 2 to 3 gallons of waste per person per year.[1] Examples of common HHWs include (but are not limited to) motor oil, pesticides, latex and oil-based paints, antifreeze, automotive batteries, and solvents.

What makes household hazardous wastes hazardous? According to the U.S. Environmental Protection Agency (EPA), household hazardous wastes are defined as follows:

> **Household Hazardous Wastes:** Solid Wastes discarded from homes or similar sources as listed in 40 CFR 261.4 (b)(1) that are either hazardous wastes as listed by EPA in 40 CFR, Parts 261.33 (e) or (f) or wastes that exhibit any of the following characteristics as defined in 40 CFR Parts 261.21 through 261.24: ignitability, corrosivity, reactivity, and EP toxicity.

Ignitability refers to the ability of a material to burst into flames spontaneously or by interaction with another substance. The U.S. Department of Transportation classifies a substance as ignitable if it is one of the following types of materials: a) a combustible or flammable liquid, b) a compressed gas, or c) an oxidizer. Combustible liquids have a flashpoint at or above 100°F and less than 140°F while flammable liquids have a flashpoint less than 100°F. (The flashpoint of a liquid is the minimum temperature at which it gives off vapors in sufficient concentrations to form an ignitable mixture with the air in the presence of a flame near the surface of the liquid.)

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[1] Department of Health Services, "Report to the Legislature Regarding Small Volume Hazardous Waste Producers" April 1983.

Corrosivity refers to the ability to destroy living tissue or steel surfaces by chemical actions. A material is classified as corrosive if it has a pH of less than or equal to 2 (acidic) or greater than or equal to 12.5 (caustic), *or* if it corrodes steel at a specified rate as measured by test methods developed by the National Association of Corrosion Engineers. Corrosive materials at the extreme pH levels are very hazardous to human tissue and aquatic life. Corrosive materials can also react with other chemicals resulting in toxic gas emissions.

Reactivity means having unstable and explosive properties which threaten human health or the environment. Pressure sensitive or water reactive materials are included in this category. Water reactive materials will generally remain stable until exposed to moisture. When exposed, these substances may generate dangerous quantities of toxic gases, vapors or fumes.

Toxicity refers to the ability of a material to cause injury, illness, or damage to living organisms. Toxicity can be either acute or chronic in nature. Acute toxicity refers to the ability of a material to cause fatal effects in an organism through a single exposure of short duration. Chronic toxicity, on the other hand, is the ability to cause detrimental effects through prolonged or repeated exposure (or consumption) over extended periods of time. Toxic materials which are classified as chronic typically contain constituents which display persistent bioaccumulative, carcinogenic, mutagenic or teratogenic characteristics.[2]

1.2 Environmental Impacts of HHW

In 1990, it was estimated that the residents of the unincorporated area improperly disposed of approximately 560 tons of HHWs in solid waste landfills.[3] Unaccountable amounts of HHW have also been going down the sewer, into storm drains, or directly onto the ground. Continued improper disposal of these wastes will lead to significant cumulative environmental deterioration, increased risk of public health and safety threats, and increased liability and clean-up costs.

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[2] Purin, Gina et al, Alternatives to Landfilling Household Toxics, Golden Empire Health Planning Center, 1987.

[3] Source: Ventura County Waste Generation Study (1990/91)

1.2.1 IMPACTS ON SOLID WASTE FACILITIES

Although HHW represents only 1 percent of all residential wastes currently being disposed in the landfills servicing the unincorporated areas, there is evidence that leachate from HHWs can contain toxic chemicals in sufficient concentrations to be harmful to the environment. This leachate may migrate into the groundwater causing contamination, vent into the air causing hazardous gas emissions, or accumulate in solid waste landfills hampering biological decomposition of refuse. There have also been a number of documented incidences in which the presence of HHW has physically harmed refuse collectors and landfill operators through direct exposure to acids, toxic gases, or explosions.[4]

1.2.2 IMPACTS ON WASTEWATER TREATMENT FACILITIES

When disposed down the drain, HHWs may adversely impair biological secondary treatment processes at the municipal wastewater treatment plant. This may result in the release of undertreated, or in extreme cases, untreated sewage directly into rivers and oceans. Other dangers to the wastewater treatment works include damage to sewer pipes and treatment plant equipment caused by the disposal of acids and caustics. Wastewater treatment plant field workers and operators are also subject to safety and health hazards by the potential for non-compatible chemicals from HHWs to form toxic gases in the workplace. In rural areas which use septic tanks, HHWs can settle out in these tanks or percolate through drain fields, thereby contaminating local groundwater resources.

Sludge contamination is another danger of disposing HHWs "down the drain". Since municipal wastewater treatment plants are not equipped to treat heavy metals sometimes found in HHWs (e.g. lead, zinc, copper, nickel, mercury, or cadmium), these metals will pass through the treatment plant and settle out in the sewage sludge making this sludge unacceptable for land application uses. In light of the restrictive limits on sludge contaminant levels proposed by the U.S. Environmental Protection Agency (EPA) through 40 CFR Part 503, the contamination due to HHWs could prevent the beneficial use of this sewage sludge as compost and/or soil amendment.

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[4] Golden Empire Health Planning Center, Household Hazardous Waste: Solving the Disposal Dilemma, 1984, pp. 8-10.

1.2.3 IMPACTS ON RESIDENTIAL COMMUNITIES

HHWs stored for long periods of time in residences increase the risk of accidental poisonings, fires, or explosions. In addition, firefighters are concerned about the storage of unexpected "toxics" in homes and garages, such as calcium carbide and picric acid. These chemicals can present serious health risks to unsuspecting firefighters while battling residential fires.

1.2.4 IMPACTS ON THE ENVIRONMENT

HHWs have a demonstrated ability to contaminate the environment through leachate in landfills and discharges from wastewater treatment systems. Storm drains, however, are another viable pathway which can lead to serious contamination problems. Stormwater washing off parking lots, streets, and yards can carry pollutants such as motor oil, antifreeze, and pesticides into storm drains. Residents may periodically dump solvents and paints down storm drains and catch basins which empty directly into local bodies of water. These practices can easily disrupt the ecosystem in the immediate outfall areas and can become health hazards to persons involved with aquatic sports in the vicinity.

1.2.5 CUMULATIVE EFFECTS ON THE ENVIRONMENT

Although much attention is focused on contamination due to small amounts of very toxic or persistent wastes (such as mercury or DDT), more attention needs to be focused on the negative cumulative effects of small amounts of less toxic materials. For example, if every household in the unincorporated area were to discard a cup of thinner twice a year, approximately 3800 gallons of the hazardous solvent could potentially enter the wastewater treatment facilities and disrupt operations.

Hazardous wastes of any kind, or in any amount, can cause problems when improperly disposed because they **do not belong** in the environment. As the population continues to grow and environmental standards become more stringent, the County must aggressively minimize the unsafe disposal of HHWs. The County must maintain programs which effectively reduce the generation of HHWs by encouraging the use of non-hazardous alternatives. For household hazardous wastes which continue to be generated, the County must provide safe recycling and

disposal programs which protect the health and safety of the community, and it must ensure that all programs continue to meet increasingly stringent state and federal regulations.

1.3 Regulatory Issues Addressing HHW

The combination of an increase in public awareness, an increase in public liability for landfill operations (including past and future as well as present operations), and an increase in the number of hazardous substances in the manufacture of household products, has created a sensitivity to the potential adverse impacts from mismanagement HHW. Landfill operators around the state are implementing hazardous waste inspection programs to prevent hazardous constituents from entering their facilities. Bills are continually being introduced to mandate more stringent labeling requirements for those products which are classified as HHWs. The legislature is requiring local government to take a more proactive role in the management of household toxics via hazardous and solid waste management plans. Below is a summary of all federal, state, and local hazardous waste regulations which affect the management of HHWs.

1.3.1 FEDERAL

The Resource Conservation and Recovery Act (RCRA), which is enforced through the U.S. Environmental Protection Agency (EPA), governs the overall management of solid wastes emphasizing the treatment, storage, disposal, generation and transportation of hazardous wastes. The primary goal of RCRA is to protect groundwater supplies by creating a "cradle-to-grave" waste management system. Although one of the objectives of RCRA is to identify what constitutes a hazardous waste, HHWs are exempt from the formal definition found in Subtitle C (40 CFR 261.4(b)(1)), but are covered by Subtitle D of RCRA, a voluntary program for the management of solid wastes. In 1984, RCRA was expanded by the ***Hazardous and Solid Waste Amendment (HSWA)*** which notably called for the phaseout of the disposal of **all untreated liquid hazardous waste "on the land"** in landfills, pits, surface impoundments, or similar facilities by 1992 using a phased approach. Also included in HSWA was a requirement that states have a permit program in place for those solid waste facilities receiving small quantities of HHWs.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 or Superfund was promulgated to assign liability, and provide compensation, cleanup, and

emergency response for hazardous substances released into the environment and for the clean-up of inactive hazardous waste disposal sites. The law provides for creation of a fund to provide the money needed to address clean-ups at abandoned disposal sites and major spill sites. Because Superfund is funded from taxes on the private sector, those funds are not available to governmental agencies for remediation of government owned sites.

The Superfund Amendments and Reauthorization Act of 1986 (SARA) reauthorizes and increases the size of the CERCLA clean-up fund. But due to a concern for the handling of hazardous substances, Congress additionally added provisions for increased regulations in the following areas: developing community right-to-know provisions (Title III); directing the Department of Transportation (DOT) to regulate all CERCLA designated hazardous substances as hazardous materials; expansion of the authority of the Occupational Safety and Health Administration (OSHA) to regulate activities at permitted and uncontrolled hazardous waste sites. For permitted facilities, OSHA promulgated a final rule which required each facility to develop a hazard communication program, a medical surveillance program, a safety and health program, a decontamination procedure to be employed in leaving contaminated areas, and a worker training program consisting of 24 hours of initial training with an 8 hour annual refresher.

The Toxic Substances Control Act (TSCA) provides the EPA with broad authority to regulate all new and existing chemicals (excluding pesticides) to ensure safety before being manufactured and distributed for use. This law bans the manufacture of polychlorinated biphenyls (PCBs) and friable asbestos.

Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) governs the manufacture and use of pesticides. FIFRA requires that all new pesticides be registered with the EPA by the manufacturer. It also requires that all pesticides manufactured before 1972 be re-examined to ensure that they meet current safety standards. FIFRA also allows EPA to evaluate not only environmental effects of a pesticide, but also the economic, social, and health impacts of its use. EPA may impose use restrictions on pesticides judged as unduly hazardous and may also cancel the registration of a pesticide when necessary. Examples of cancelled registration chemicals include DDT, kepone, and ethylene dibromide (EDB).

1.3.2 STATE

State law requires all hazardous wastes, regardless of quantity or origin, to be stored, treated, transported, and disposed of according to the provisions of the Hazardous Waste Control Act, Chapter 6.5 and 6.7 of the Health and Safety Code. Also, AB 1462 (Cortese 1986, Chapter 754) requires that all solid waste management plans include a program, to the extent that the

County determines a need, for the safe management of hazardous wastes (as defined in Section 25117 of the Health and Safety Code), which are generated by households and which should be separated from the solid waste stream.

California's Management of Used Oil Act (SB 86), implemented January 1, 1987, prohibits the disposal of used oil by discharge to sewers, drainage systems, surface or groundwaters, water courses or marine waters, by domestic incineration or burning as a fuel, or by deposit on land, unless otherwise authorized by law. This act also prohibits the use of used oil as a dust suppressant or weed control agent. Finally, in addition to requiring the handling of used oil as a hazardous waste, the law expressly prohibits contaminating used oil with other than minimal amounts of vehicle fuel.

The County Hazardous Waste Management Plan (CHWMP), adopted in 1989, was developed to comply with AB 2948 (Tanner 1986) and requires the following:

- An analysis of Ventura County's hazardous waste stream.
- A description of existing hazardous waste facilities which treat, handle, recycle, and dispose of the hazardous waste produced in the County.
- An analysis of Ventura County's potential to both recycle hazardous waste and reduce its volume at the point of generation.
- An assessment of the County's capacity to manage the small volumes of hazardous waste consistently produced by businesses and households.
- A study to determine the need for additional hazardous waste facilities to properly manage the volume of hazardous waste currently produced, or expected to be produced, during the planning period.
- The identification of hazardous waste facilities that can be expanded to accomodate projected needs; and the general geographic areas, or specific sites for potential hazardous waste facilities.
- A statement of goals, objectives, and policies for the siting of hazardous waste facilities and the general management of hazardous waste through the year 2000.
- A schedule which describes County and city actions necessary to implement the hazardous waste management plan through the year 2000.

The overall objective of the CHWMP is to "ensure that safe, effective, and economical facilities for the management of hazardous wastes are available when they are needed, which protects public health and the environment".[5] The CHWMP also specifically defines programs to safely manage and reduce the generation of household hazardous wastes. This element will strive to ensure consistency with the CHWMP and will reiterate those responsibilities designated in the CHWMP as well as elaborate on the funding mechanism required to execute and expand these programs.

1.3.3 LOCAL

On January 31, 1989, the Board of Supervisors officially adopted the County Hazardous Waste Management Plan (CHWMP). The Board also passed a resolution which adopted policies to carry out all feasible mitigation measures identified in the final EIR of the plan and have determined that there are no other feasible mitigation measure or alternatives within the County's power that would substantially lessen or avoid any significant effect on the environment caused by the adoption of the CHWMP.

The Board of Supervisors has also adopted a resolution that establishes fees for hazardous waste producers' licenses and hazardous waste transport facility licenses. The annual fee for this license is reduced by 75 percent if the entity agrees to accept waste oil from residences. The entity must provide assurance to the Environmental Health Division that he/she will comply with all of the following requirements throughout the entire term of the license:

- Maintain a used oil storage tank or tanks having a capacity of at least 100 gallons.
- Accept up to four gallons of used oil per day per person without charge except when: the used oil storage tanks are filled to capacity; or the operator of the used oil storage tanks need the remaining storage capacity to deposit oil generated at the site before it is emptied.
- Display a prominent sign approved by the Manager of the Environmental Health Division advertising the used oil collection services.

[5] California Health and Safety Code, Chapter 6.5, Division 20, Section 25100 et. seq.

Failure to comply with the any of the requirements at any time throughout the term of the license shall render the license holder immediately liable for payment of the amount by which the fee was reduced.

1.4 CIWMB HHW Categories

The California Integrated Waste Management Board (CIWMB) has developed form CIWMB-303 (1/90) to standardize the types and quantities of HHW that are collected for disposal or diversion through various programs. All programs implemented will be required to provide collection information in the format illustrated in Figure 1-1. The CIWMB has classified HHW in the following major categories: flammables, pesticides, corrosives, oxidizers, and miscellaneous.

1.4.1 FLAMMABLES

Flammables make up the bulk of HHW that is used and disposed by households. This category has been sub-divided into six waste types: used oil, paints, solvents, gasoline/oil, aerosols (excluding pesticides/herbicides), and other flammables.

Used oil is both ignitable and toxic. The toxicity of motor oil is due in part to the chemical additives used in it to increase viscosity, thus enhancing its "coating" ability. During the internal combustion process, used oil will also pick up heavy metal contaminants such as lead, magnesium, copper, and zinc. Nationwide, individuals who change their own oil generated 193 million gallons of used oil.[6] Only 9 percent of this used oil is collected and recycled in an environmentally safe manner. "Do-It-Yourselfers" (DIYs) illegally disposed at least 118 million (or 61 percent of all used oil) down sewers or on the ground; 8 million gallons (or about 4 percent) is burned by the DIYs and the remainder is put in the trash or used in a variety of applications.[7] When oil is collected, it will generally be re-refined or reprocessed. Re-refining oil removes contaminants from used oil and recycles the product as new lubricant. Reprocessors skim and filter used oil and mix the partially cleaned oil with virgin oil. The resulting product is used as heat generating fuel. Although re-refining oil is the preferred alternative, the process is costly and requires used oil which is uncontaminated with other wastes or materials.

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[6] Graham, Janet, "Used Oil: The DIY Dilemma", Household Hazardous Waste Managment, Fall 1989, pp.3,8.

[7] Ibid.

Figure 1-1 Form CIWMB-303 (1/90)

State of California — California Integrated Waste Management Board

HOUSEHOLD HAZARDOUS WASTE COLLECTION INFORMATION

CIWMB-303 (1/90)

Name of Local Agency: Phone:

Address: City: County: State: Zip:

(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					
2. Paints a. Latex					
b. Oil Base					
3. Solvents, thinners, and stains					
4. Gasoline and oil (mixed)					
5. Aerosols (excluding pesticides/ herbicides)					
6. Other					
FLAMMABLE SUBTOTAL					

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	

Figure 1-1 Form CIWMB-303 (1/90) (cont.)

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					
b. Non-Oxidizing					
2. Alkaline					
CORROSIVES SUBTOTAL					
D. Oxidizers					
Excluding acids					
OXIDIZERS SUBTOTAL					
E. Miscellaneous					
1. Car Batteries					
2. Dry Cells					
3. Mercury					
4. Other					
MISC. SUBTOTAL					
TOTAL WASTE COLLECTED					

Paints are generally divided into two classes: latex (water-based) paints and oil-based paints. Latex paint is hazardous because it may contain heavy metals in its pigments or fungicides containing mercury-based compounds as an additive. Oil-based paint is hazardous because it contains organic solvents in addition to hazardous pigments and preservatives. Paints will generally comprise the largest volume of waste collected in a HHW program. Preferred management alternatives include reuse (waste exchange) or recycling of paints. Oil-based paints can be bulked with used oil and burned as a fuel supplement, or incinerated at a permitted facility. If paint must be landfilled, it is preferable to bulk and solidify it, using a binding agent, rather than to lab-pack individual paint cans.

Solvents are targeted because they contain specific problem chemicals such as benzene, methylene chloride, toluene, trichloroethane, trichloroethylene, and tetrachloroethylene. Since these light-weight organic compounds do not normally bind onto soil or other particles, they have the potential to percolate through a landfill and end up in the leachate. Organic solvents may concentrate to hazardous levels in sewer lines, pass untreated through sewage treatment plants, or pass straight through septic tanks and drain fields and migrate into the groundwater. Over-exposure to organic solvents will initially cause dermal and central nervous system effects but it may also casue irreversible damage to a number of body organs. Although the preferred method of management is recycling solvents when possible, most programs currently incinerate or lab-pack solvents for disposal at Class I landfills.

Gasoline is a hydrocarbon mixture consisting of pentane, hexane, heptane, octane, nonane, and decane. Gasoline is insoluble in water and is highly flammable due to its low flashpoint. Health effects include irritation of the respiratory systems, mucous membranes and lungs. Because gasoline brought to collection programs is frequently mixed with oil, it is generally bulked with used oil scheduled for incineration or used as bunker fuel.

Aerosols vary in the degree of hazard depending on the type of product and the chemical constituents contained therein. All aerosols, however, are a physical hazard because they are pressurized and will explode under extreme heat. Management alternatives available for aerosol cans include: using up the material for its intended purpose and disposing of the empty can at a solid waste landfill; or, lab-packing the unused product and incinerating or landfilling it at a Class I facility which will accept this waste.

1.4.2 PESTICIDES

Pesticides include a wide variety of products such as those listed in Table 1-1. Pesticides are classified either as general use pesticides (available to the general public) or as restricted use

pesticides. Restricted use pesticides are only used by licensed pest control operators with very limited over-the-counter availability. Chlordane, for example, became classified as a carcinogen and was, therefore, placed on the restricted use list in 1987.

Table 1-1
Types of Pesticides Commercially Available

Type of Pesticide	Description
Rodenticides	Control rodents and small animals
Insecticides	Control insects, indoor and outdoor
Fungicides	Control mold and mildew
Termiticides	Control termites
Algicides	Control algae blooms in pools, saunas
Acaricides	Controls mites
Herbicides	Control unwanted plant growth, generally weeds
Molluscicides	Control snails, generally in the form of snail bait
Disinfectants	Controls bacterial growth
Wood preservatives	Controls rot
Restricted/Banned Pesticides	DDT, Aldrin, Chlordane, Creosote, Dieldrin, Kepone, Lindane, Mirex, Pentachlorophenol, Silvex, 2,4,5-T Toxaphene

While it is not technically a classification, pesticides can also be categorized as banned. Pesticides are listed as banned when they are found, through studies, to be so injurious to humans, plants, animals, or the environment that they are removed from the marketplace altogether. Pesticides such as Silvex and Pentachlorophenol were banned because they are contaminated with dioxin during the manufacturing process.

Pesticides are harmful because they are easily absorbed through the skin or through inhalation. Some pesticides may be extremely hazardous on inhalation due to their ability to adversely affect the respiratory system or permeate the lungs. Because of the dangerous nature of pesticides, most collection programs will opt to incinerate lab-packed drums at approved incineration facilities. Pesticides which are not restricted or banned may be sent to responsible parties such as the Agricultural Commissioners Office, nurseries, or commercial growers to be used in the manner in which they were intended.

1.4.3 CORROSIVES

As previously stated, corrosive chemicals are legally defined as having a pH less than 2 (acid) or greater than 12.5 (base). A chemical can also be considered corrosive if it can corrode metal even if its pH is not within the specified range. Corrosive chemicals are hazardous because of the damage that they can inflict on the skin. Also, corrosives can be extremely reactive with other chemicals. Once collected in programs, these materials can be neutralized when possible by experienced hazardous waste professionals, or lab-packed for disposal.

1.4.4 OXIDIZERS

In general, oxidizers are defined as chemicals which readily gives up oxygen due to increases in temperature or mechanical friction. While an oxidizer is not in itself combustible, it will support combustion through the release of oxygen. Examples of oxidizers include products such as bleach (chlorine), calcium hypochlorite, hydrogen peroxide, and sodium hypochlorite. Many of these materials are also toxic and may react with other chemicals to release chlorine gas which is very toxic to the respiratory system. Management of these chemicals includes reusing, when possible, or lab-packing for disposal.

1.4.5 MISCELLANEOUS

Other types of HHW which are frequently collected in HHW programs include lead acid (car) batteries, anti-freeze, household batteries (dry cell), and mercury. Other items less frequently collected in programs include pharmaceuticals and low-level radioactive wastes.

Car batteries or wet cell batteries consist of a plastic shell containing a number of inner cells which house lead strips immersed in sulfuric acid. Car batteries are hazards due to the corrosive nature of the sulfuric acid and the substantial amount and highly toxic nature of lead contained in the battery. Improper handling of these batteries can have immediate and long term effects on public health and the environment. Fortunately, old car batteries are recyclable and can be taken to battery recyclers where the lead is smelted and reused.

Antifreeze or ethylene glycol is a moderately biodegradable hazardous waste. It is, however, very toxic to mammals, causing depression followed by respiratory and cardiac failure, and renal

and brain damage. Recycling is the best management option for antifreeze since it is easily accomplished through distillation.

Dry cells or household batteries contain heavy metals such as silver, mercury, lead, lithium, cadmium, manganese, nickel, and zinc. Although their potential hazards are not as severe as wet cell batteries, the long-term effects of improper disposal should not be underestimated. Although household batteries only compose approximately .005 percent by weight of the U.S. waste stream, they account for over 50 percent of the mercury and cadmium found in our trash.[8]

Table 1-2
Household Batteries: Uses and Recyclability

Primary Batteries	Typical Uses	Recycling Facilities
Alkaline-manganese	toys, flashlights, portable electronic equipment	Environmental Pacific Corp. Portland OR (environmental operations questionable)
Carbon-zinc	same as above	Not recyclable.
Mercuric oxide	hearing aids, pacemakers, photographic equipment	Mercury Refining Co., Latham NY
Silver oxide	hearing aids, watches, photographic equipment	Mercury Refining Co., Latham NY ECS Refining, Santa Clara CA
Zinc-air	hearing aids, pacemakers	Not recyclable.
Lithium	computers, calculators, cameras, flashlights	Not recyclable.
Secondary Batteries	**Typical Uses**	**Recycling Facilities**
Nickel-cadmium	photography, power tools, rechargeable flashlights, rechargeable household appliances	Bronx 2000, NY NY (study in progress) Inmetco, Elwood City PA

Household batteries generally fall into two categories: primary or secondary.[9] A primary battery houses active chemicals necessary for its energy source. Once the chemicals are

[8] Reutlinger, Nancy and DeGrassi, Dan, "Household Battery Recycling, Numerous Obstacles, Few Solutions", Resource Recycling, April 1991, pp. 24-29.

[9] Kehoe, Paula, "Battery Reclamation Technologies". Presented at the Northern California HHW Information Exchange, December 12, 1990.

manganese, mercuric oxide button cells, silver oxide button cells, zinc-air button cells, lithium, and carbon-zinc. All of these batteries, with the exception of the lithium, contain some level of mercury. A secondary battery has the ability to be recharged through a power source. A nickel cadmium or Ni-Cad battery can be recharged up to 1000 times before losing its useful life. Table 1-2 outlines the typical uses and recycling potential for each of these batteries. Because there are very few battery recyclers in this country, proper battery management is limited to incineration of collected batteries or disposal in a Class I landfill.

Mercury is generally found in thermometers or barometers and mercury switches. It is also generated during gold mining operations. A less recognized source of mercury waste is fluorescent lights bulbs. Depending on the manufacturer, a four foot fluorescent tube may contain between 20 to 150 mg of liquid metallic mercury, and an eight foot tube can contain 25 to 187.5 mg.[10] Chronic inhalation of mercury produces symptoms including emotional disturbances, unsteadiness, fatigue, memory loss, and kidney damage. Mercury is easily absorbed through the skin and can produce poisoning. As little as 1 gram of mercuric chloride may be a fatal dose if ingested. The best management method for mercury is to locate a mercury reclaimer or a mercury supply company for reclamation. Gold mining operations are also generally willing to reuse mercury.

Pharmaceuticals can be hazardous. The most hazardous pharmaceuticals are the waste chemotherapy drugs. These drugs are of extremely high toxicity and should be treated with extreme caution. Antibiotics or prescription drugs of any kind should be collected in a program and not disposed down the drain. Vitamin supplements, however, are not generally considered hazardous and can be disposed in the trash.

[10] Purin, Gina; Ortung, Judy; Page, Janet, Alternatives to Landfilling Household Toxics, Golden Empire Health Planning Center, 1987.

HOUSEHOLD HAZARDOUS WASTE ELEMENT
Unincorporated Ventura County

Chapter 2.0

Goals and Objectives for Programs

2.0 GOALS AND OBJECTIVES

The overall goal of this element is to develop a comprehensive Household Hazardous Waste (HHW) program which will protect the environment and the general public from the adverse effects of improper handling and disposal of this waste. Formal school environmental education curricula and citizen education are two critical keys in establishing awareness and program participation. By accomplishing specified short-term and medium-term planning objectives aimed toward reducing, reusing, and recycling hazardous materials generated by households, the County of Ventura unincorporated areas will acquire the following long-term benefits:

- Reduce the risks of public and environmental exposure to hazardous substances.
- Enable solid waste processing/disposal facilities and publicly owned treatment works (POTWs) to comply with increasingly stringent disposal requirements and pollutant discharge standards.
- Increase constituent awareness and knowledge in solid and hazardous waste issues which will be vital in making future planning decisions regarding wastes. General information and education will create public confidence in all aspects of HHW management programs.
- Foster an ethic of personal responsibility and pride in preserving and protecting one's community. This attitude can be instilled in youths by promoting local and regional education programs at all grade levels.
- Stimulate communication, involvement, and cooperation between local agencies, community organizations, and the private business sector.

2.1 Collection/Load Checking/Recycling Programs

The following section identifies all the collection, load checking, and recycling programs selected by the County of Ventura for its unincorporated areas. The brief summary examines both short-term and medium-term goals.

2.1.1 SHORT-TERM GOALS AND OBJECTIVES 1991-1995

- Ensure that recyclables collection facilities are available to most unincorporated residents.
- Coordinate with all jurisdictions in providing periodic collections for the unincorporated communities.
- Continue supporting existing load-checking programs.
- Encourage all solid waste facilities to develop load-checking programs.
- Continue current practice of recycling used oil, paint, antifreeze, and car batteries collected by all existing and future programs and facilities. Encourage recycling of HHW at all load-checking programs when feasible.
- Develop and evaluate a pilot mobile collection program for the East County subregional area. This program will work in conjunction with existing recyclables only HHW collection facilities in the vicinity.

2.1.2 MEDIUM-TERM GOALS AND OBJECTIVES 1996-2000

- Continue participation in recyclables only permanent collection facility.
- If cost effective, continue implementing a sub-regional mobile collection program and evaluate the need for a County-wide program.
- Continue to support all load-checking programs.
- Investigate the feasibility of limited curbside collection for the Ojai Valley unincorporated areas.
- Reevaluate the need for a permanent HHW facility.

2.2 Public Education and Information Programs

All public education and information programs are identified in the following section. All short- and medium goals are distinguished in this section.

2.2.1 SHORT-TERM GOALS AND OBJECTIVES 1991-1995

The following selected ***school programs*** will be implemented during the short-term period:

- curriculum supplements
- environmental education curriculum
- display centers
- educational assistance from the solid waste industry
- promotion of environmentally friendly products
- peer teaching
- mobile display vehicle

The following selected ***residential programs*** will be implemented during the short-term period:

- multi-media outreach
- distribution of informational materials
- HHW speakers bureau
- utility bill inserts by the hauler
- conduct non-toxic alternatives products and services campaigns
- County-wide solid waste hotline

The following selected ***governmental programs*** will be implemented during the short-term period:

- legislative support and lobbying
- permanent HHW display at the Government Center

2.2.2 MEDIUM-TERM GOALS AND OBJECTIVES 1996-2000

All selected ***school programs*** will continue during the medium-term implementation period.

The following selected ***residential programs*** will be implemented during the medium-term period:

- public information campaign addressing non-recyclable HHW
- hazard-free "model" community program
- integrated pest management (IPM) program

The following selected ***governmental programs*** will be considered during the medium-term period:

- use of non-hazardous products within the County

HOUSEHOLD HAZARDOUS WASTE ELEMENT
Unincorporated Ventura County

Chapter 3.0

Existing Conditions

3.0 EXISTING CONDITIONS

For the purposes of description and local planning, this element divides the unincorporated areas into regions based on geographical proximity and existing planning boundaries (see Figure 3-1). The county's unincorporated areas are defined into the following regions:

- **East County Unincorporated Areas.** This includes, but is not limited to, the following communities: Santa Rosa Valley, Home Acres, Happy Camp, North Simi, West Simi, Santa Susana, Box Canyon, Bell Canyon, Oak Park, Lake Sherwood, Rolling Oaks, Ventu Park, Kelley Estates, Casa Conejo, Rancho Conejo, Newbury Park, Lynn Ranch, and the Brandeis Institute.

- **North Coast.** This includes, but is not limited to, the following communities: La Conchita, Mussel Shoals, Rincon, Seacliff, and Solimar.

- **North Half.** This includes, but is not limited to: Lockwood Valley, Matilija, and camping areas in the Los Padres National Forest.

- **Ojai Valley.** This includes, but is not limited to: Summit, Ojai Foundation, Ojai Valley School, Happy Valley School, Villanova Preparatory School, East Ojai, Meiners Oaks, Camp Rama, Mira Monte, Oak View, Casitas Springs, Foster Park, Live Oak Acres, Siete Robles, Los Encinos, Casitas Vistas, and West Hill.

- **Santa Clara River Valley.** This includes, but is not limited to: Mission Rock Road, West Santa Paula, Mupu, East Santa Paula, Buckhorn, and Piru.

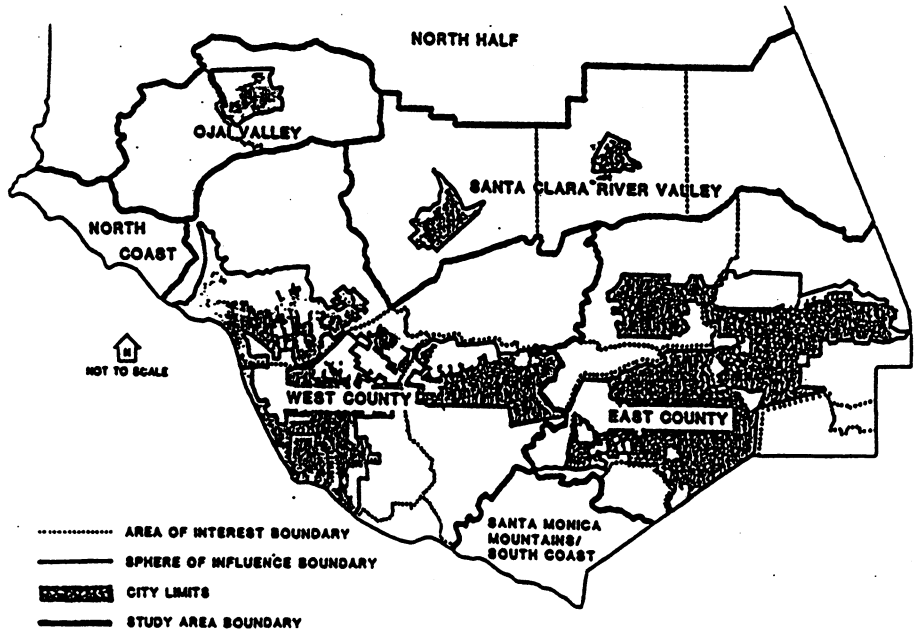
- **Santa Monica Mountains and South Coast.** This includes, but is not limited to: Sycamore Canyon State Park, La Jolla State Beach, Camp Hess Kramer, Gindling Hill Top Camp, Camp Joan Mier, and Solromar.

- **West County Unincorporated Communities (Inland).** The Groves, Somis, Stacy/Terra Bella Lanes, Las Posas Estates, Camarillo Heights, Nyeland Acres, El Rio, Cabrillo Village, Leisure Village, Saticoy Country Club, Foothill, Ventura Avenue and Montalvo.

- **West County Unincorporated Communities (Coastal).** Silver Strand, Channel Islands Beach, and Hollywood by the Sea.

Since many of the unincorporated communities are situated adjacent to a city, these areas have predominantly relied upon existing periodic collection days sponsored by the city or have participated in the recyclable HHW drop-off facilities.

Figure 3-1
Unincorporated Area Household Hazardous Waste Element Study Areas



Source: Ventura County Solid Waste Management Department, 1990

3.1 Periodic Collection Programs

Although no HHW collection events have been sponsored solely for the unincorporated areas of the County, unincorporated communities have participated in the various City/Ventura Regional Sanitation District sponsored events since 1987. Periodic collection events, however, do not collect information which would enable differentiating unincorporated residents from city residents.

3.2 Load Checking Programs

The following landfills provide service to the unincorporated areas of the County: Toland Road, Bailard, Simi Valley, Calabasas Landfill (Los Angeles County), and the Lebec Transfer Station (Kern County). Of these, the Lebec Transfer Station and the Toland Road Landfill did not have

load checking programs in effect during 1990. The Kern County Public Works Department has developed a load checking program which was implemented in early 1991 for the Lebec Transfer Station.

3.2.1 LOAD CHECKING PROGRAM AT THE BAILARD LANDFILL

The Bailard Landfill, which is operated by the Ventura Regional Sanitation District (VRSD), is the primary landfill serving unincorporated communities in the Ojai Valley, North Coast, West County Inland, and the West County Coastal areas. The Regional Water Quality Control Board (RWQCB) requires the landfill to implement a load checking program to minimize the amounts of hazardous waste entering the landfill. Load checks are conducted one day per quarter at the landfill face, and an extensive permitting program to reduce HHW disposal at the landfill was initiated in 1988. If HHW is found and is determined to be recyclable, it is taken to the Santa Clara Recycling Center located adjacent to the landfill. If the generator is identified via correspondence found in the refuse, a letter is mailed to them explaining the hazards of disposing of HHW and the locations and times in which it can be properly disposed or recycled.

Because most of the waste is compacted, minimal amounts of HHW have been found at the face of the landfill since the program was initiated. The personnel at the minimum fee area at the landfill are pulling recyclable HHW and delivering it to the Recycling Center. Although types and quantities of diverted materials were not recorded in 1990, the program will now include quantification of these materials.

3.2.2 LOAD CHECKING PROGRAM AT THE SIMI VALLEY LANDFILL

The Simi Valley Landfill, which is a privately owned and operated facility, is one of the landfills serving unincorporated communities in the East County. When Waste Management Inc., operator of the Simi Valley Landfill, applied for a major modification of their conditional use permit (CUP), the County of Ventura required that they develop a Hazardous Waste Exclusion Program. Although the Simi Valley Landfill has been conducting load-checks since March of 1989, the program outlined by the County requires the operator to submit for review and approval to the County Planning Director, a hazardous waste exclusion program which will consist of the following:

- At least one full-time employee specifically trained in hazardous materials identification. The employee is responsible for inspection of incoming refuse loads for hazardous wastes. The employee must also be located at the working face of the landfill and shall inspect all loads as they are delivered. If hazardous wastes are found, they must be removed and disposed of in accordance with State regulations.

- When average daily refuse tonnages are less than 2,000 tons per day, the hazardous waste trained employee shall randomly select at least five trucks per week for detailed inspection of the contents for hazardous material. When the average daily tonnage exceeds 2,000 tons per day, then ten trucks per week shall be randomly inspected. Logs of these inspections shall be made available as requested by the Planning Director which show the time and date of each inspection, the license number and company name of the truck inspected, and the results of each inspection.

- The operator must develop procedures for record keeping, warnings, notification of appropriate agencies and/or prohibition of access to the landfill for hauling companies or individuals which bring in hazardous wastes to the site.

- Twice a year, the operator must send to all commercial accounts using the landfill a description of the landfill hazardous waste monitoring program as well as a description of the penalties, if any, associated with the program.

- A formal employee training program must include information on the identification, safety measures, and reporting procedures for hazardous material. This information should be re-emphasized on a schedule approved by the Planning Director for all new and existing landfill employees.

Presently, the Ventura County Planning Division has notified Waste Management Inc. that submitting hazardous waste/random load check logs were not required due to their length, and that regular inspection of the logs will be conducted during each quarterly condition compliance site inspection conducted by Planning staff.[1] Table 3-1 shows all materials recovered during the load checking program at the Simi Valley Landfill in 1990.

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[1] Letter from the County of Ventura Planning Division to Waste Management Inc., "Clarification of Conflicting Requirements - Simi Valley Landfill, CUP-3142 (Condition Nos. 16 and 62)", dated May 17, 1991.

Table 3-1
MATERIALS RECOVERED
LOAD CHECKING PROGRAM - SIMI VALLEY LANDFILL (1990)

Waste Category	Gallons	Pounds	Number Containers	Number Drums	Management Method
A. Flammable					
1. Used Oil	51				D
2. Paints					
-latex	120				D
-oil based	60				D
3. Solvents, Thinners, & Stains	7				D
4. Gasoline and Oil (mixed)	7				D
5. Aerosols (w/o pesticides)	0				
6. Other	0				
TOTAL FLAMMABLES	245	0	0	0	
B. Pesticides					
Herbicides, Insecticides, Fungicides	2				D
TOTAL PESTICIDES	2	0	0	0	
C. Corrosives					
1. Acids					D
-Oxidizing	1				
-Non-Oxidizing	0				D
2. Alkaline	2				
TOTAL CORROSIVES	3	0	0	0	
D. Oxidizers					
Excluding Acids	0				
TOTAL OXIDIZERS	0	0	0	0	
E. Miscellaneous					
1. Car Batteries			71		RE
2. Dry Cells					
3. Mercury					
4. Other	41				D
TOTAL MISCELLANEOUS	41	0	71	0	

KEY = REUSED(RU), RECYCLED(RE), BLENDED FUEL(BF), TRANSFER STATION(TR), INCINERATOR(T-1), AQUEOUS TREATMENT(T-2), STABILIZATION(T-3), LAND DISPOSAL(D)

3.2.3 LOAD CHECKING PROGRAM AT THE CALABASAS LANDFILL

The Calabasas Landfill, which is operated by the Sanitation District of Los Angeles County, serves parts of the unincorporated communities in the East County and all of the areas in the Santa Monica Mountains and South Coast. The Regional Water Quality Control Board (RWQCB) required the landfill to implement a load checking program to minimize the amounts of hazardous waste entering the landfill. Although HHW is a concern, the load checking programs at the landfill concentrate on examining commercial and industrial loads. Table 3-2 summarizes tonnages diverted through the load checking program at the Calabasas Landfill.

Table 3-2
MATERIALS RECOVERED
LOAD CHECKING PROGRAM - CALABASAS LANDFILL (1990)

Type of Waste	Tons Searched	Number of Truck Loads	Total Hazardous Tonnage Diverted
Commercial	2227	474	0.23
Residential	1841	297	0.01
Demolition	2449	515	0.30
Yardwaste	401	89	0.0
Hospital	113	27	0.0
TOTALS:	**7,031**	**1,402**	**0.54**

3.3 Recycling Programs

The VRSD has established three permanent Recyclable Household Hazardous Waste Stations in the western end of Ventura County. These stations are located at the Bailard Landfill (Santa Clara Recycling Center) in Oxnard, the Toland Road Landfill in the Santa Clara River Valley, and the Ojai Anti-litter Station in the Ojai Valley. Residents of the unincorporated areas of the county have been participating at both the Santa Clara Recycling Center and the Ojai Anti-Litter Station.

The Santa Clara Recycling Center began accepting used oil, paints, anti-freeze and car batteries in April of 1990. The center is open for the collection of HHWs Monday through Saturday from 7:00 am to 4:00 pm. From January through April of 1991, a total of 23 customers from the unincorporated areas participated in this facility, averaging 6 customers per month. Assuming that each customer represents one household, and that each household uses the station once a year, total yearly participation can be projected as approximately 70 households or 0.2 percent of the total households per year. Tables 3-3 through 3-5 summarize the types and quantities of HHW collected from the unincorporated areas participating in the Santa Clara Recycling Center.

Table 3-3
Types and Quantities Collected at the Santa Clara Recycling Center
West County Unincorporated Areas

Year: (units):	1990[1] (gals)	1990[1] (tons)	1991[2] (gals)	1991[2] (tons)	Avg/mo. (gals)	Management Method
Used Oil	217	0.91	39	0.16	19.7	Blended fuel
Oil-Based Paints	27	0.11	.5	0.00	2.1	Blended fuel
Latex Paint	45.33	0.19	2.5	0.01	3.7	Reuse
Anti-Freeze	0	0.00	0	0.00	0.0	Recycle
Lead Acid Batteries	7 each	0.12	0 each	0.00	18.5 (lbs)	Recycle
TOTAL DIVERTED (tons):		**1.33**		**0.17**		

[1] Based on period from April through December 1990.
[2] Based on period from January through April 1991.
[3] Conversion factor of 8.35 pounds per gallon used.
[4] Batteries are 34 pounds each.

Table 3-4
Types and Quantities Collected at the Santa Clara Recycling Center
Ojai Valley Unincorporated Areas

Year: (units):	1990[1] (gals)	1990[1] (tons)	1991[2] (gals)	1991[2] (tons)	Avg/mo. (gals)	Management Method
Used Oil	149	0.62	34	0.14	14.1	Blended fuel
Oil-Based Paints	2	0.01	0	0.00	0.2	Blended fuel
Latex Paint	9	0.04	0	0.00	0.7	Reuse
Anti-Freeze	5	0.02	0	0.00	0.4	Recycle
Lead Acid Batteries	6 each	0.10	0 each	0.00	15.4 (lbs)	Recycle
TOTAL DIVERTED (tons):		**0.79**		**0.14**		

[1] Based on period from April through December 1990.
[2] Based on period from January through April 1991.
[3] Conversion factor of 8.35 pounds per gallon used.
[4] Batteries are 34 pounds each.

Table 3-5
Types and Quantities Collected at the Santa Clara Recycling Center
East County Unincorporated Areas

Year: (units):	1990[1] (gals)	1990[1] (tons)	1991[2] (gals)	1991[2] (tons)	Avg/mo. (gals)	Management Method
Used Oil	356	1.49	145.5	0.61	38.6	Blended fuel
Oil-Based Paints	74.25	0.31	1	0.00	5.8	Blended fuel
Latex Paint	113	0.47	7.5	0.03	9.3	Reuse
Anti-Freeze	1	0.00	0	0.00	0.1	Recycle
Lead Acid Batteries	1 each	0.02	1 each	0.02	6.2 (lbs)	Recycle
TOTAL DIVERTED (tons):		**2.29**		**0.66**		

[1] Based on period from April through December 1990.
[2] Based on period from January through April 1991.
[3] Conversion factor of 8.35 pounds per gallon used.
[4] Batteries are 34 pounds each.

The Ojai Anti-litter Station began accepting used oil, paints, and car batteries beginning November of 1990. The center is open every Saturday and Sunday from 10:00 am to 4:00 pm. From January through April of 1991, a total of 32 customers from the unincorporated areas of the county have participated, averaging approximately 8 customers per month. Assuming that each customer represents one household, and that each household uses the station once a year, total yearly participation can be projected as approximately 96 households, or 0.3 percent of the total unincorporated households per year. Tables 3-6 and 3-7 summarizes the types and quantities of HHW collected from the participating unincorporated areas.

Table 3-6
Types and Quantities Collected at the Ojai Anti-litter Station
West County Unincorporated Areas

Year: (units):	1990[1] (gals)	1990[1] (tons)	1991[2] (gals)	1991[2] (tons)	Avg/mo. (gals)	Management Method
Used Oil	6	0.03	0	0.00	0.5	Blended fuel
Oil-Based Paints	10	0.04	2	0.01	0.9	Blended fuel
Latex Paint	19	0.08	3	0.01	1.7	Reuse
Anti-Freeze	0	0.00	0	0.00	0.0	Recycle
Lead Acid Batteries	0 each	0.00	0 each	0.00	0.0 (lbs)	Recycle
TOTAL DIVERTED (tons):		**0.15**		**0.02**		

[1] Based on period from November through December 1990.
[2] Based on period from January through April 1991.
[3] Conversion factor of 8.35 pounds per gallon used.
[4] Batteries are 34 pounds each.

Table 3-7
Types and Quantities Collected at the Ojai Anti-litter Station
Ojai Valley Unincorporated Areas

Year: (units):	1990[1] (gals)	1990[1] (tons)	1991[2] (gals)	1991[2] (tons)	Avg/mo. (gals)	Management Method
Used Oil	70	0.29	183	0.76	19.5	Blended fuel
Oil-Based Paints	1	0.00	9	0.04	0.8	Blended fuel
Latex Paint	12	0.05	26	0.11	2.9	Reuse
Anti-Freeze	0	0.00	0	0	0.0	Recycle
Lead Acid Batteries	2 each	0.03	12 each	0.20	35.4 (lbs)	Recycle
TOTAL DIVERTED (tons):		0.37		1.13		

[1] Based on period from November through December 1990.
[2] Based on period from January through April 1991.
[3] Conversion factor of 8.35 pounds per gallon used.
[4] Batteries are 34 pounds each.

3.4 Public Education and Information Programs

Supplemental solid waste education support for the public schools is received from the Ventura County solid Waste Management Department (SWMD), Ventura Regional Sanitation District (VRSD), Ventura County Environmental and Energy Education Council, and several other state and national public and private organizations. The SWMD has assisted in providing environmental education to private schools upon request. The SWMD has also worked with many other agencies in developing current public education and information programs addressing HHW reduction. To date, the County has accomplished the following tasks:

- Ongoing efforts to coordinate with other agencies for the promotion of environmental education which includes HHW. The County SWMD also contributes to the Regional Education Committee which has representatives from all jurisdictions and special districts in the County. There are two subcommittees within the general committee: the Formal Education, and General Public Education and Information Committees. Each of these committees focus on general solid waste issues that include the management of HHW. The County has organized educational speakers from such agencies as the Department

of Toxic Substances Control to present curriculum information and to introduce HHW and other environmental curriculum in the various School Districts.

- Providing HHW informational brochures and pamphlets to the public. Information has been consistently distributed at public information booths at major county-wide events such as the Ventura County Fair, Point Mugu Air Show, and Earth Day, as well as local City events. The County has also sponsored HHW displays at the Government Center lobby and it maintains a self-serve display rack at the Solid Waste Intermediate Processing Center (IPC).

- Working with various school districts to distribute environmental education curriculum. The school districts have received and distributed curriculum from the California Environmental Education Consortium for kindergarten through sixth grades known as "Think Earth". Similar curriculum is being designed for grades 4-6 and are scheduled to be delivered in 1992.

- Providing input to VRSD on the development of the Ventura County Household Hazardous Waste Collection Program Guidance Manual (Nov 1986) which was prepared under contract by the Community Environmental Council, Inc. This document provides a methodology for developing and coordinating one-day collection events, and was the guidance manual used to implement the pilot collection event sponsored by the City of Ventura. The manual provides detailed information on project coordination, financing, publicity and public education, surveys and data collection, state and local contacts, and continuation of programs. Appendices also address issues such as legislation, existing programs, permitting applications, and example programs.

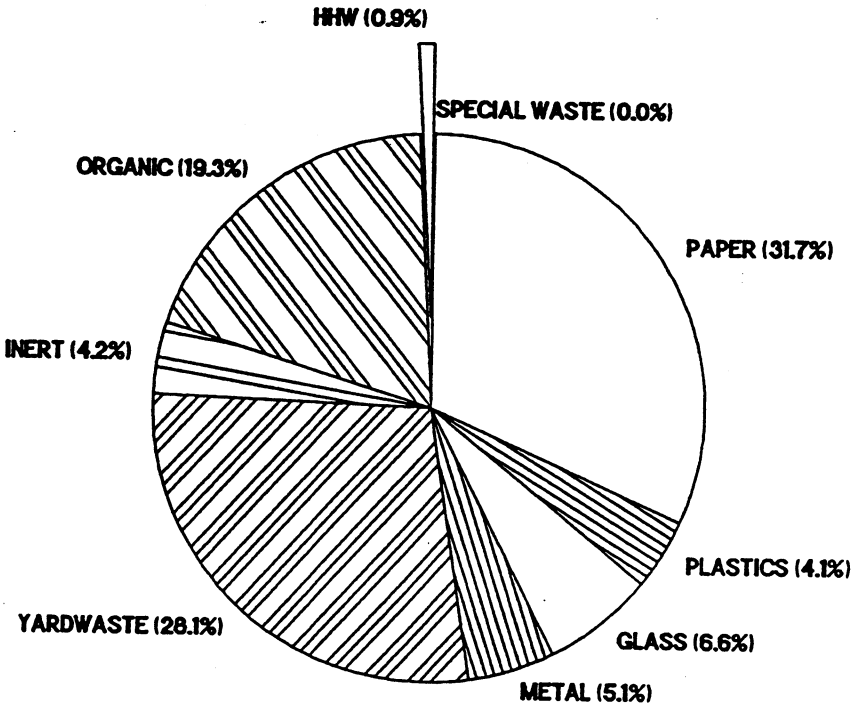
- Co-chairing the Ojai Valley Citizens Advisory Committee which has been instrumental in providing public input for the planning of the Household Hazardous Waste Element for the greater unincorporated Ojai Valley. There are sixteen member organizations on the Committee, ranging from public agencies to service clubs, schools, private business, haulers, and environmental groups. An invaluable exchange of information from the sixteen member organizations has assisted in the formulation of this planning document. Several of these organizations are assisting in arranging for public information distribution, events, and coordination in the Ojai Valley.

- Organizing informative seminars and workshops relating to HHW planning issues including: a County-wide workshop on the relationship between the CIWMP and the County Hazardous Waste Management Plan; a workshop with the state Department of Toxic Substances and Control (DTSC) discussing permitting requirements for recyclable HHW collection centers.

3.5 Estimate of HHW Improperly Disposed

The solid waste generation study indicates that 0.9 percent of all solid wastes disposed by residences in the unincorporated areas are HHWs (Figure 3-2). This translates to a total of 560 tons per year of HHW being being improperly disposed into solid waste landfills by the residential sector. The study also indicates that approximately 250 tons per year of HHW, or 0.6 percent of solid waste disposed by the remaining sectors (commercial, industrial, and other) is also being improperly landfilled. On a County-wide basis, medium density residences will generally dispose the most HHW on a per capita basis, with low and high density generation rates at 67.4 percent and 34.4 percent of medium density disposal rates respectively.[2] This indicates that collection and educational programs should initially focus on the medium density residences during program implementation.

Figure 3-2
Residential Disposal: Unincorporated Ventura County



[2] Ventura County Solid Waste Generation Study (1990/1991). Residential densities are defined as follows: low density is less than 5 dwelling units per acre, medium density is 5 to 9 units to the acre (inclusive), and high density is 9 or more units per acre.

Because the solid waste generation study does not break HHW into the waste categories referenced on CIWMB form 303 (1/90), a follow-up survey was conducted to obtain information on the types of HHW used by residents. This survey also documented the different methods of disposal used for each product identified. The products were broken into four major categories: household cleaning products, automotive products, pool/hobby products, and other products.

Household cleaning products are well-used by the majority of the households surveyed in the unincorporated area. Abrasive cleansers and scouring powders were used by 95% of all households. Persons interviewed indicated that the product was almost always used up. On rare occasions where there was unused residual, the product would be disposed in the trash. Although incidents of illegal disposal for household cleaning products were minimal, products such as abrasive cleaners, bleach, toilet bowl cleaners, and drain cleaners are all draining into the sanitary system from regular use, thereby creating possible cumulative long-term environmental effects which were not considered when the product was initially tested and released by the manufacturer.

For ***automotive products***, the focus of the survey was determining the number of households which perform their own vehicle maintenance. In the unincorporated areas surveyed, approximately 20% of those surveyed claimed that they changed their own oil. Of that 20%, approximately 50% claimed they improperly disposed of their oil in the trash, on the ground, or in storm drains. When projected out, this is equivalent to approximately 84.4 tons per year of illegally disposed used motor oil and filters[3]. With old car batteries, the majority of households exchange their old battery at the place of purchase. Less than 10% of the households surveyed claimed they were either recycling or storing old car batteries. Less than 25% of the households indicated the use of solvents, degreasers, gasoline (other than as fuel for the car), or kerosene. All indicated that these products were generally used up and the empty container disposed.

Pool and hobby product usage averages 15% in the unincorporated areas surveyed. Most residents indicated that they used all the product for its intended purpose.

Paint products, which includes latex and oil-based paint, paint stripper, paint thinner, stains, varnishes and wood preservatives, are being used by 90% of the residents surveyed. Approximately 3% of those surveys indicated that they recycle their paint, while the rest indicated that they either store the unused product, use it up completely, or dry out the paint and

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[3] This was calculated using the following assumptions: 1) oil changed three times per year per car, 2) 5 quarts of used oil generated per change per car, 3) each household changes 1.5 cars on the average, 4) 10% of all households illegally dispose of oil, 5) oil is 8.35 lbs per gallon, 6) used filters weigh 2 lbs

trash the container. None of the sample respondents indicated that they disposed of wet paint in the garbage.

Residential usage of other products is indicated in Table 3-8. Personal care products include items such as nail polish remover, hair spray, shoe polish, etc. Examples of mercury-containing products include thermometers and fluorescent light bulbs. Fire protection devices such as smoke detectors have very low levels of radioactive materials.

The survey also gathered data on the level of current participation in and awareness of HHW programs. Less than one percent of all households surveyed have used existing collection programs to deposit HHWs. This is consistent with the previously tabulated total participation rate of one-half of a percent at the Santa Clara Recycling Center and the Ojai Anti-litter Station. Overall awareness level of the unincorporated areas on safe-substitutes, and environmentally preferred disposal alternatives were low. The residents surveyed, however, were very interested in proper management and disposal of HHWs. Based on their responses, residents can identify the more common products which are considered hazardous, but require more education on appropriate disposal methods and safe substitutes which can be used to reduce HHW generation.

3.6 Estimate of Total Generation

In the waste generation study, total generation is equal to the amount disposed at the landfill plus the amount diverted. In the case of HHWs, however, this equation does not account for all materials that are being stored, *or* illegally disposed on the ground, sewer and storm drains. The 1990 data from the waste generation study and the HHW survey indicates that total generation of HHW by the unincorporated area is at least 650 tons per year from the residential sector. Using the 1990 population of the unincorporated area each person generates at least 15 lbs of HHWs per year.[4]

[4] California Department of Finance, Ventura County Population and Housing Estimates, January 1, 1990. Population for the unincorporated are is 86,873.

Table 3-8
Types of Hazardous Products Used by Unincorporated Ventura County Households

Hazardous Cleaning Products	% Households Using Product
abrasive cleaners and scouring powders	95%
glass/window cleaners	85%
bleach and bleach-based cleaners	70%
disinfectants	65%
ammonia-based cleaners	50%
toiler bowl cleaners	50%
spot removers	40%
rug and upholstery cleaner	40%
oven cleaners	40%
drain cleaners	40%
Automotive Products	**% Households Using Product**
solvents	20%
gasoline	5%
other	5%

Pool and Hobby Products	% Households Using Product
pool chemicals	15%
firearm cleaning solvents	15%
artist/modelling paints and glues	15%
Other Products	**% Households Using Product**
paint products	90%
pesticides	75%
aerosols	65%
personal care	75%
fire protection devices	95%
dry cell batteries	95%
mercury-containing products	70%

HOUSEHOLD HAZARDOUS WASTE ELEMENT
Unincorporated Ventura County

Chapter 4.0

Evaluation of HHW Program Alternatives

4.0 EVALUATION OF HHW COLLECTION PROGRAM ALTERNATIVES

The regulations require that all jurisdictions examine the feasibility of integrating the following activities in the overall HHW program: collection programs; load checking programs; recycling programs targeting waste oils, paints, and batteries; and public education and information programs promoting HHW collection and recycling efforts. This section describes potential programs and evaluates them using the following criteria:

- Potential hazards to public health and environment created by the considered alternative
- Accommodation to changing economic, technological, and social conditions
- Institutional barriers
- Short-term and medium-term implementation
- Needs for new facilities and/or facility expansion
- Consistency with local policies, plans, and ordinances
- Estimation of costs
- Availability of end uses for diverted materials

4.1 Collection Programs

Collection programs have three main objectives: (1) provide communities with a safe disposal alternative for HHWs, (2) increase knowledge and awareness of HHWs, and (3) track information on HHW generation and disposal. Hazardous waste collection programs, most importantly, provide jurisdictions with an opportunity to educate communities on using safe, non-toxic alternatives, thereby reducing the use of hazardous household products. The following types of collection programs will be evaluated in this section: periodic collection, recyclables only permanent collection, permanent collection of all HHW, mobile collection, and curbside collection of all HHW.

4.1.1 PERIODIC COLLECTION PROGRAMS

A HHW periodic or "one-day" collection program provides residents with a specific date, time, and location to deliver their unwanted HHW for reuse, recycling, or proper disposal. The typical duration of a one-day collection is from 4 to 6 hours. This service is generally provided to a community free of charge to ensure maximum participation. Residents from the targeted community are instructed to bring their HHWs to the designated location where these wastes are accepted and segregated into compatible categories by personnel knowledgeable in hazardous waste disposal practices. Collected wastes are recycled when possible (e.g., motor oil, latex paint, automotive batteries, antifreeze) or packaged for transportation to be transformed at an incineration facility or buried in a hazardous waste (Class I) landfill. The Department of Toxic Substances Control (DTSC) requires that all wastes be transported to a treatment, storage, and disposal (TSD) or recycling facility within 144 hours of initial collection. This program benefits the community by increasing community awareness of the potential dangers of improper disposal and promoting the use of safer product alternatives, while providing an environmentally sound disposal option to residents.

Potential Hazards

Because of the sporadic nature of one-day collection programs, residents will tend to bring all materials which they have stockpiled for the last one to five years. This increases the risk of individuals exceeding the Department of Transportation (DOT) limit for unregistered hazardous waste haulers of 50 pounds for solids or 5 gallons for liquids . Most residents are not aware of these hauling restrictions, but even those who are aware will not be inclined to leave any HHWs at home since they cannot be assured of when and where the next collection day will occur. This high volume of incoming wastes also leads to excessive unloading times needed to properly segregate and categorize all materials that are delivered to the site. Typical queueing times at a one-day collection program can range from 1 to 2 hours. Long waiting periods increase the potential for impatience, which may lead to illegal dumping of the wastes. Long lines may also discourage future participation by residents in these events.

Another hazard present at one-day collection programs is the potential for a hazardous release to occur because many homeowners do not know how to handle and containerize the toxic wastes they bring to the site. Some of these wastes can not be properly identified by the homeowner. These problems coupled with the large concentrations of vehicles and persons at the site require that emergency services be on-site and readily available should a release occur. Evacuation procedures must be well defined and methods for adequate crowd control and communication are extremely critical.

Accommodation to Changing Conditions

The strength of one-day collection programs is their flexibility. These programs are easily adapted to changes in HHW regulations, changes in the types of materials that can be collected, and they are flexible in the location where collection can occur. Many of these flexibilities are detailed as follows:

- Changes in regulations can be accommodated by amending the collection contract.
- Capital equipment costs are not necessary to run the program.
- Changes in siting will not confuse homeowners since time lapses between events are fairly significant.
- Program siting can be changed to provide service to previously unpopulated regions.
- Collection program is not at a site long enough to generate complaints from the surrounding communities.
- Types of materials accepted in the program can be changed to accommodate the existing budget that is available for the collection day without much confusion.

Institutional Barriers

No significant institutional barriers to this alternative.

Short-term and Medium-Term Implementation

One-day collection programs take 4 to 6 months to implement and are therefore appropriate for short-term implementation. The two tasks which need significant implementation time are the variance application and the development of the waste disposal contract. The processing time for the variance will typically take six to eight weeks. Developing a waste disposal contract will generally take three months to complete. If funds are not already available for this program, collection of appropriate funds will significantly lengthen the implementation period.

Needs for New Facilities and/or Facilities Expansion

No new facilities or facilities expansions are required for one-day collection programs.

Consistency with Local Policies, Plans, and Ordinances

The Ventura County General Plan has established the following goals, policies, and programs which apply to the proper management of HHW:

- Minimize the negative impacts resulting from the use, transport, treatment, and disposal of all hazardous materials and wastes.

- Hazardous waste and materials shall be managed in such a way, so as to follow the waste hierarchy of reduce, reuse, recycle, and treatment. Disposal shall always be the last resort.

- The County Solid Waste Management Department will maintain a County Hazardous Waste Management Plan (CHWMP) that includes goals, policies, programs and an implementation schedule for management of hazardous waste by the County and the ten cities. Also the County will continue to coordinate with the Ventura Regional Sanitation District (VRSD) and local cities on the HHW program, which involves the collection of unused hazardous household products and pesticides.

The County Hazardous Waste Management Plan (CHWMP) further emphasizes the proper use, storage, and disposal of HHW by establishing the following programs related to one-day collection events:

- Establish regularly scheduled HHW collection days so as to provide access to the majority of citizens in the County.

- Implement a Countywide fee assessment to support the program through residential trash billings.

Estimate of Costs

In Ventura County, costs for one-day collection programs have ranged from $89 per household to as much as $183 per household.[1] Total costs are highly dependent on the number of households participating, the volume of HHW collected, and the types of HHW brought to the collection site. Disposal costs typically account for 70 to 80 percent of the total cost (exclusive of staff time) of a one-day collection program.

Personnel Expenses

Staffing for a one-day collection program will typically require the following personnel:

- The waste disposal contractor provides technical staff for facilities set-up and HHW management. This includes handling, identification, packaging, and disposal of hazardous wastes.

- County staff will site the event, obtain funding, develop the necessary transportation and disposal contracts, submit the variance, and coordinate publicity. The West County unincorporated communities and the Ojai Valley have in the past relied on the Ventura Regional Sanitation District (VRSD) for many of these services.

- Volunteers will assist in event publicity, control traffic flow, obtain survey information, and provide informational materials.

County staff personnel time will range from 100 to 200 hours, depending on the level of familiarity staff has with the implementation process. Contractor costs will be high since compensation significantly exceeds the cost of using public sector employees. However, due to the temporary nature of these programs and the potential hazards which were previously discussed, using an experienced contractor for collection and handling of HHW is more judicious than diverting staff from their normal duties to perform these tasks.

Publicity Costs

Printing and mailing of publicity materials can cost between $2,000 and $6,000 depending on the method of advertising principally used. Typically, newspaper advertisements and well-placed flyers are the most effective means of publicizing the program. Other methods of advertisement

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[1] VRSD Board Letter date January 30, 1991, "City of Camarillo Household Hazardous Waste Collection Day".

include utility bill inserts, hand-outs at school, direct mail, and radio spots. Sources of free publicity include press packets, press conferences, public service announcements, and contacting community organizations to announce upcoming events.

Public Education/Information Costs

Educational materials costs can vary widely depending on the approach used. Designing and printing brochures and handouts can range from $1,000 to $5,000 depending on the degree of participation anticipated at the event. Free educational materials are also available from various state and local agencies. Videotapes and HHW displays are also desirable since they can be reused for subsequent events at no extra cost.

Hazardous Waste Transportation and Disposal Costs

As was mentioned earlier, hazardous waste handling and disposal costs account for 70 to 80 percent of the total costs of a one-day collection program. Waste transportation and disposal costs are also the most difficult to estimate in a collection program since it is highly dependent on the following factors:

- Types and quantities of HHW brought to the program by each household
- Percent of participation anticipated from the community
- Recycling/Disposal costs for each type of material collected

To estimate types and quantities of HHW typically handled by programs, the information in Table 4-1 was compiled to examine programs which have been implemented in 1989 and 1990 in constituent cities and neighboring counties. The jurisdictions in the table represent a variety of socio-economic backgrounds, population sizes, and participation rates. All wastes from these events were generally categorized into five categories: motor oil, latex paint, oil-based paint/flammables, labpacks, and other bulked material. Other bulked material includes chlorinated solvents, anti-freeze, corrosives/oxidizers (to treatment), hazardous waste liquids (solidified) and solids to landfill.

Table 4-1
Periodic Collection Programs
Average Quantities of HHW Collected by Neighboring Jurisdictions[1]
1989/90

City	Participating Households	Motor Oil (gals/HH)	Latex Paint (gals/HH)	Oil-based Paint/Flamm (gals/HH)	Lab Packs (drums/HH)	Other Material (drums/HH)
Santa Barbara	1570	2.32	1.05	2.45	0.13	0.003
Santa Ynez	270	2.59	0.93	2.04	0.15	0.007
San Luis Obispo	825	0.79	0.93	1.73	0.13	0.004
Lompoc	750	4.00	0.80	1.98	0.09	0.004
Redondo Beach	570	1.62	1.05	1.45	0.09	0.004
Santa Paula/Fillmore	401	2.32	1.25	2.88	0.18	0.002
Santa Barbara	1500	2.11	1.04	2.18	0.12	0.003
Camarillo	1228	2.85	1.06	1.52	0.10	0.002
Average/HH:		**2.33**	**1.01**	**2.03**	**0.12**	**0.004**

[1]Data compiled by MSE Environmental, Inc. and submitted to the Solid Waste Management Department on February 12, 1991.

As of January 1, 1990, it was estimated that the unincorporated areas had a total of 30,165 dwelling units.[2] According to the waste generation analysis, the unincorporated areas overall are generating at least 650 tons of HHW yearly, which equals to 43 pounds per household per year. Using a conversion factor of 8.35 pounds per gallon, each household generates approximately 5.15 gallons per year. Table 4-2 distributes the total HHW generated into the various waste types using the average distribution calculated in Table 4-1.

[2] California Department of Finance, Ventura County Population and Housing Estimates as of January 1, 1990.

Table 4-2
Periodic Collection
HHW Generated by Waste Types

Material Type	Average Generation from Neighboring Cities (gals/HH/yr)	Fraction of Total Generated	Average Generation unincorporated areas (gals/HH/yr)
Motor Oil	2.33	0.30	1.55
Latex Paint	1.01	0.13	0.67
Oil-based Paint/Flamm	2.03	0.27	1.39
Lab-Packs	2.28	0.30	1.55
TOTAL GENERATED:	7.65	1.00	5.15

Once an average quantity per household is calculated for each HHW category, these figures can be used to estimate anticipated amounts collected at varying levels of participation for the unincorporated areas. Events held in Ventura County during 1989-1990 indicate that participation can range from 0.5 to 7 percent of the population.[3] With ample publicity prior to the event coupled with an aggressive public education program, participation may range between 5 to 12 percent of the total dwelling units. Since the unincorporated areas are geographically dispersed, periodic collection will at minimum have to be divided into two separate events; one focusing on the major population areas of the Western County and the other focusing on population concentrations on the Eastern end of the County.

If an event were to be centrally located in the western end of the County, areas which could reasonably be expected to participate include the Western County Inland and the Ojai Valley which represents approximately 16,873 dwelling units. At a 5 percent and 12 percent participation rate, approximately 844 and 2025 households, respectively, can be expected to contribute to this event.

If an event were to be centrally located in the eastern end of the County, areas which could reasonably be expected to participate include the East County communities which represents approximately 8,402 dwelling units. At a 5 percent and 12 percent participation rate, approximately 420 and 1008 households, respectively, can be expected to contribute to this event.

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[3] VRSD Board Letter dated January 30, 1991, "City of Camarillo Household Hazardous Waste Collection Day".

With these assumption, ranges of transportation and disposal costs can be estimated for each corresponding scenario (see Table 4-3).

Table 4-3
Periodic Collection Programs
Transportation and Disposal Cost Estimates at Various Levels of Participation

Material Type	Western County Event				Eastern County Event			
	5% Participation		12% Participation		5% Participation		12% Participation	
	gals	costs[1]	gals	costs[1]	gals	costs[1]	gals	costs[1]
Motor Oil	1,308	5,429	3,138	$13,026	651	$2,702	1,563	$6,488
Latex Paint	565	$4,691	1,357	$11,266	281	$2,333	676	$5,612
Oil-Paint/Flamm	1,173	$11,509	2,814	$27,609	584	$5,730	1,401	$13,746
Lab Packs	1,308	$33,044	3,138	$79,276	651	$16,446	1,563	$39,486
TOTAL COSTS:		**$54,673**		**$131,177**		**$27,211**		**$65,332**

[1]Estimated costs for recycling/disposing of materials: motor oil $220/drum; latex paint $440/drum; oil-base paint/flammables (includes aerosols) $520/drum; and lab packs $480/drum. These costs include labor, handling, and transportation. Costs are based on estimates provided by hazardous waste management firms, February 1991.

Cost Summary

Table 4-5 summarizes the total costs needed to implement a one-day collection program. Other costs include: analytical profiling costs for unknowns ($500 to $700 per analysis); facilities set-up charge ($5,000 to $6,000); and drums requiring special handling such as incineration or encapsulation ($600 to $1600 per drum).

Table 4-5
Periodic Collection Programs
Total Implementation Cost: 5% and 12% Participation

Description	Western County Event		Eastern County Event		Notes
	Costs - 5% Participate	Costs - 12% Participate	Costs - 5% Participate	Costs - 12% Participate	
Personnel Expenses	150 hours	150 hours	150 hours	150 hours	County staff hours
Publicity Costs	$5,000	$5,000	$4,000	$4,000	
Public Education	$844	$2,025	$420	$1,008	$1 per participant
Set-up Costs	$6,000	$6,000	$6,000	$6,000	Flat fee
Transportation/Disposal	$54,673	$131,177	$27,211	$65,332	
Analytical Profiling	$5,062	$12,149	$2,521	$6,049	One profile every 100 participants @ $600
Special Handling	$5,624	$13,498	$2,801	$6,722	One drum every 150 participants @ $1000
TOTAL COSTS:	**$77,203**	**$169,849**	**$42,953**	**$89,111**	
COST PER HH:	**$92/HH**	**$84/HH**	**$102/HH**	**$88/HH**	Cost per participating household

Availability of End Uses for Diverted Materials

Waste oil collected during the program can be used in alternative fuel programs, for bunker fuel or can be sent to a re-refiner of oil to be processed and re-marketed as motor oil. Oil-based paints can be blended with waste oil and sent to an alternative fuels program. Waste oil sent to a re-refiner should always be kept segregated from paints and solvents. Latex paints can be bulked and reprocessed at a paint recycling facility. If this option is chosen, the County must make financial arrangements to buy back the blended paint. Useable paints collected at the site could be used by the County for maintenance and upkeep of structures or can be donated to non-profit community organizations. Car batteries can be hauled to a battery smelting service for recycling. The 144-hour time limit permitted at the collection site by the DTSC will limit the amount of waste exchanging and bulking which can be accomplished on-site.

Effectiveness of Reducing Volume/Weight of HHW Generated

This option is moderately effective in reducing HHW. Periodic collection can at most capture HHW disposed by 12 percent of all households. It does not, however, allow time for public information and education for the promotion of safe substitutes and least-toxic solutions to hazardous products.

4.1.2 PERMANENT RECYCLABLE HHW COLLECTION FACILITY

Permanent recyclable HHW facilities provide residents with a reliable and convenient location to recycle wastes. HHW which are considered recyclable include used motor oil, latex paint, car batteries, anti-freeze. Household batteries are recyclable, but very few locations in the U.S. perform this type of recycling (see Table 1-2). Operational hours for these types of facilities range from 1 to 5 days per week, and are located within a reasonable travel distance of the residential users. Daily operations of this facility can range from 4 to 8 hours per day depending on staffing arrangements. This service is provided free of charge to ensure maximum participation.

Some permanent recyclable HHW facilities are extensions of existing treatment, storage and disposal (TSD) facilities, solid waste landfills, or transfer stations. Others are located at fire stations, and city yards and are staffed on a part-time basis by personnel from these operations. Facilities operating under a variance must generally transport all collected wastes to an appropriate TSD facility within a 90-day period.

Currently, the Ventura Regional Sanitation District (VRSD) is operating this type of facility at the Santa Clara Recycling Center (West County Inland), the Ojai Anti-litter Station (Ojai Valley), and the Toland Road Landfill (Santa Clara River Valley). This facility currently accepts paint, used oil, batteries and antifreeze for recycling. These materials are collected and managed as follows:

- Used oil is collected and stored in an aboveground tank and is picked up by a recycler. The facility requires trained personnel to determine whether or not incoming oil is contaminated with halogens. Contaminated oil is stored in a 55-gallon drum and is managed differently by the recycler and requires separate storage from the uncontaminated oil.

- Paint is stored in containers and once per week is bulked. Paints containing no solids are separated into three groups (white, pastel, and dark) and are bulked by color into five-gallon plastic container and given to the public or used by VRSD and other government agencies. The paints with some solids are bulked into 55-gallon drums and sent for recycling. VRSD then either buys back the paint or allows the recycler to market it to other customers at a higher cost to VRSD. The oil-based paint is bulked into 55-gallon drums and is transported to a facility that uses it as an alternative fuel to produce road base and bricks. The aerosol paint cans are stored in a secured container. A carbon absorption paint filter system is used to trap the aerosol repellent and capture the paint. The paint is then bulked and used as an alternative fuel source.

- Car batteries are stored in secure containers and picked-up by recyclers who extract the acid from the batteries and either neutralize it for disposal or recycle it. The lead from the batteries is smelted and reformed into new material.

- Anti-freeze is stored in secured 55-gallon drums and picked up by an anti-freeze recycler. It is filtered and processed into new anti-freeze.

Potential Hazards

A permanent recyclables HHW collection facility may attract illegal drop-off of commercial waste or waste not normally accepted at the facility site. Overnight drop-offs of this type could be potentially dangerous since hazardous materials (or possibly extremely hazardous materials) are generally left outside the secured area of the facility making these wastes accessible to the community. The dropped-off wastes may be difficult or extremely expensive to dispose therefore creating a financial hardship for the facility. Other hazards created by illegal drop-offs include:

- High potential for the person(s) to create a spill during the process of illegally dropping off the hazardous wastes.

- Residents may come in contact with the wastes when illegal drop-offs occur.

- The facility may violate the conditions of its variance permit by accepting wastes not included in the variance permit.

- The facility may violate the 90-day storage limit if hazardous waste illegally dropped-off is difficult to properly dispose.

Accommodation to Changing Conditions

Changes in the following areas may impact a permanent recyclables HHW collection program:

- Changes in regulations may affect the management method or volume of incoming HHWs.
- Changes in the types of HHWs received by the facility will cause confusion, especially if materials which were previously collected are no longer accepted.
- Changes in adjacent communities may generate complaints where there was once support. Influx of more people, addition of schools and day-care centers, and new public recreation areas may force the relocation of the facility.
- Changes in location or hours of operation will require extensive re-education or will result in confusion. Even with proper advertisement, people will leave unattended materials at a former location or during staffed hours.

Institutional Barriers

If sited in a commercial or industrial zoned area or at an existing landfill, institutional barriers would be minimal. If sited near communities, residents may oppose the siting of any facility associated with hazardous waste. An extensive educational process may have to be conducted concurrent to facility siting if the site is in close proximity to a community.

Short-Term and Medium-Term Implementation

Permitting a recyclables HHW facility may take six to eight month. Facility construction may take another 6 to 8 months. If institutional barriers are easily overcome, this option could be considered for the short-term implementation period.

Needs for New Facilities and/or Facilities Expansion

Depending on the location chosen, equipment needs and facility expansion can vary. At minimum, aboveground storage tanks are needed to bulk the waste oil and secondary containment needs to be provided for this option. Adequate space should be provided for receiving, staging, and storing all incoming materials to the facility.

The receiving area should be an impermeable, bermed, concrete pad which is designed to adequately contain any spills which could occur during the unloading process. This area should be accessible yet restrict participants from entering the staging area.

The staging area will consist of bulking materials collected at the facility. The tanks used for storage of bulked liquid wastes must be located within a sealed impermeable concrete bermed area able to provide secondary containment of at least 110 percent containment of the full contents of each tank. For multiple tanks, the bermed area should provide secondary containment equivalent to 150 percent of the largest tank or 10 percent of the aggregate (total of all containers), whichever is greater. Awnings and shelters over these tanks are needed to keep precipitation from collecting in the bermed areas.

The storage area must be an enclosed or semi-enclosed structure. It must also provide secondary containment as well as a means of physically separating incompatible materials within the storage structure. The storage structure must also be well marked with the appropriate signs and placards. Safety equipment accessible within or outside of the structure must include eye-washes, emergency showers, and fire extinguishers. Prefabricated structures which incorporate all of the aforementioned requirements for proper hazardous waste storage are commercially available.

Consistency with Local Policies, Plans, and Ordinances

This type of program is consistent with local policies since the Tanner Advisory Committee recommended that each of the Cities and the County consider siting permanent facilities for the collection of recyclable HHW within their respective jurisdictions.[4] This recommendation was followed with an issue paper that outlined many of the factors that should be considered in establishing a recyclable household hazardous waste facility.

Estimate of Costs

Permanent HHW collection programs allow ample opportunities for reuse and recycling. Variances for facilities handling these materials will allow storage periods for up to 90 days, with the exception of car batteries which is 180 days. These longer detention periods allow implementation of on-site reuse programs such as paint exchanges, as well as allow the bulking

[4] Letter from the Waste Commission to all City Councils dated June 19, 1990, "Recyclable Household Hazardous Waste Collection Facility".

of waste oils and the consolidation of waste paints. Site improvements such as storage tanks and enclosed or semi-enclosed storage areas will be needed.

Capital Equipment Costs. Capital costs may total as much as $55 per square foot which includes facilities construction, storage containers, utilities, and signs.

Oil Recycling. Currently non-contaminated oil is recycled free of charge although some companies will charge $0.15 per gallon to transport the oil. Contaminated oil pick-up is $2.50 per gallon. To prevent contamination, VRSD personnel use a halogen contamination flame test on each container of oil delivered to the recycling facility. The oil recycler also analyzes each load with a Chlor-N-Oil test. This test is $20 per load.

Paint Recycling. Bulking paint takes an average of 20 hours per week, which is approximately $200 of labor hours. If the water-based paints are bulked and reused, labor is the only cost. If the water-based paints are recycled, the cost is $2.83 per gallon or $150 per drum if the jurisdiction agrees to buy back the paint. If a buy-back is not desired, the recycler will accept paints at a cost of $3.83 per gallon or $203 per drum. Oil-based paints will average from $300 per drum to $600 per drum depending on the amount of solids.

Batteries. The existence of an established recycling markets for car batteries indicates that recycling these batteries could be profitable. These batteries can be sold for approximately $1 a piece to local metal recyclers.

Antifreeze. Currently, the company which recycles the oil also recycles the antifreeze at a cost of $20 per 55-gallons drum.

Availability of End Uses for Diverted Materials

Waste oil collected during the program should be re-refined, whenever possible, along with filters and containers previously contaminated with waste oil. Waste oil sent to a re-refiner should always be kept segregated from contaminants. Using waste oil in an alternative fuels program for bunker fuel should be a lower priority. Latex paints can be bulked and mixed on-site for use in local paint exchanges or building maintenance. Useable paints collected at the site could be used by the County for maintenance and upkeep of structures, or can be donated to non-profit community organizations. Paint exchanges could be arranged enabling residents to select reusable paints in a color of their choice. Lead acid batteries can be sent by hauler to a battery smelter for lead recovery and recycling. The longer storage periods will generally increase overall reuse and recycling of collected materials.

Effectiveness of Reducing Volume/Weight of HHW Generated

This option is very effective in reducing the overall weight of HHW unsafely disposed since recyclable HHW may typically consist of 60 percent of the wastestream collected in HHW programs. Since the facility is available to residents on a permanent basis, participation will be much higher than periodic collection, therefore allowing the capture of more HHW. The permanent site also allows time for the promotion of safe substitutes and least-toxic solutions thereby allowing additional source reduction to occur.

4.1.3 PERMANENT HHW FACILITIES

Permanent HHW facilities provide residents with a reliable disposal/recycling alternative for HHW generated. These facilities will accept all HHWs with the exception of radioactive wastes, pressurized gas cylinders, explosives, and certain water reactives. These types of facilities are typically open 2 to 6 days per week and are located within a reasonable travel distance of the residential users. Daily operations of such a facility can range from 4 to 8 hours per day depending on staffing arrangements. Typically, this service is provided free of charge to ensure maximum participation.

Some permanent facilities are extensions of existing treatment, storage and disposal (TSD) facilities, solid waste landfills, or transfer stations. Others are located at fire stations, and city yards and are staffed on a part-time basis by personnel from these operations. Permanent collection facilities which operate under a TSD facility permit, can store hazardous wastes in excess of 90 days. Facilities operating under a variance must generally transport all collected wastes to an appropriate TSD facility within a 90-day period.

Although permanent facilities have not been established in the County of Ventura, other counties such as San Bernardino, San Diego, and San Francisco have been successful in establishing such programs.

Potential Hazards

A permanent collection facility may attract illegal drop-off of commercial waste at the facility site. Overnight drop-offs of this type could be potentially dangerous since hazardous materials (or possibly extremely hazardous materials) are generally left outside the secured area of the facility making these wastes accessible to the community. The dropped-off wastes may be

difficult or extremely expensive to dispose therefore creating a financial hardship for the facility. Other hazards created by illegal drop-offs include:

- High potential for the person(s) to create a spill during the process of illegally dropping off the hazardous wastes.
- Residents may come in contact with the wastes when illegal drop-offs occur.
- The facility may violate the conditions of its variance/TSD permit by storing wastes not included in the variance/TSD permit.
- The facility may violate the 90-day storage limit, if the illegal hazardous waste dropped-off is difficult to properly dispose.

Another hazard to siting permanent collection facilities is the liability associated with the storage of hazardous wastes for extended periods of time prior to collection and disposal. Because these facilities are located in proximity to communities, toxic releases may potentially contaminate nearby groundwater sources or above-ground recreational waters. However, with an aggressive spill prevention program and well-trained personnel on contingency planning, the occurrences of toxic releases will be minimized.

Accommodation to Changing Conditions

Due to the rigorous permitting requirements involved with a permanent facility, changes in location and/or operation of the facility are difficult. Changes in the following areas may adversely impact a permanent collection program:

- Changes in regulations may affect the management method or volume of incoming HHWs. For example, wastes which were previously considered non-hazardous someday, could be considered hazardous and therefore must be collected at the facility. These types of changes may necessitate purchasing additional capital equipment (such as additional storage sheds), increase disposal costs, or require additional staffing at the facility.
- Changes in the types of HHWs received by the facility could cause confusion, especially if materials which were previously collected are no longer accepted. Adding additional materials to the permanent collection program could also require modifications in the existing permits or variances.

- Changes in adjacent communities may generate complaints where there was once support. Influx of more people, addition of schools and day-care centers, and new public recreation areas may force the relocation of the facility.

- Changes in location or hours of operation will require extensive re-education or will result in confusion. Even with proper advertisement, people will leave unattended materials at a former location or during unstaffed hours.

- Addition of other permanent sites to service previously unpopulated regions would have to go through the same siting and land use planning process.

Institutional Barriers

A permanent facility must meet the full siting requirements of a major hazardous waste TSD facility. This involves a very costly and cumbersome permitting process carrying with it all the adverse connotations of a hazardous waste disposal facility which could limit facility siting and create confusion on the part of the residents.

Short-Term and Medium-Term Implementation

In the unincorporated areas, any site selected for a permanent facility would require a conditional use permit (CUP). The application of this permit will then subject this type of project to the local land use process for siting new hazardous waste facilities (Health and Safety Code, Sections 25199. to 25199.14). Figure 4-1 outlines this process in more detail. From the date in which the Notice of Intent is filed with the Office of Permit Assistance (OPA), this process will take at least one and one-half years to reach the local agency for action on the project. When considering implementation schedules for the site selection process, facility design, requests for proposals for construction/operations, and actual construction, total implementation periods can easily take up to five years and should therefore be considered for medium-term implementation.

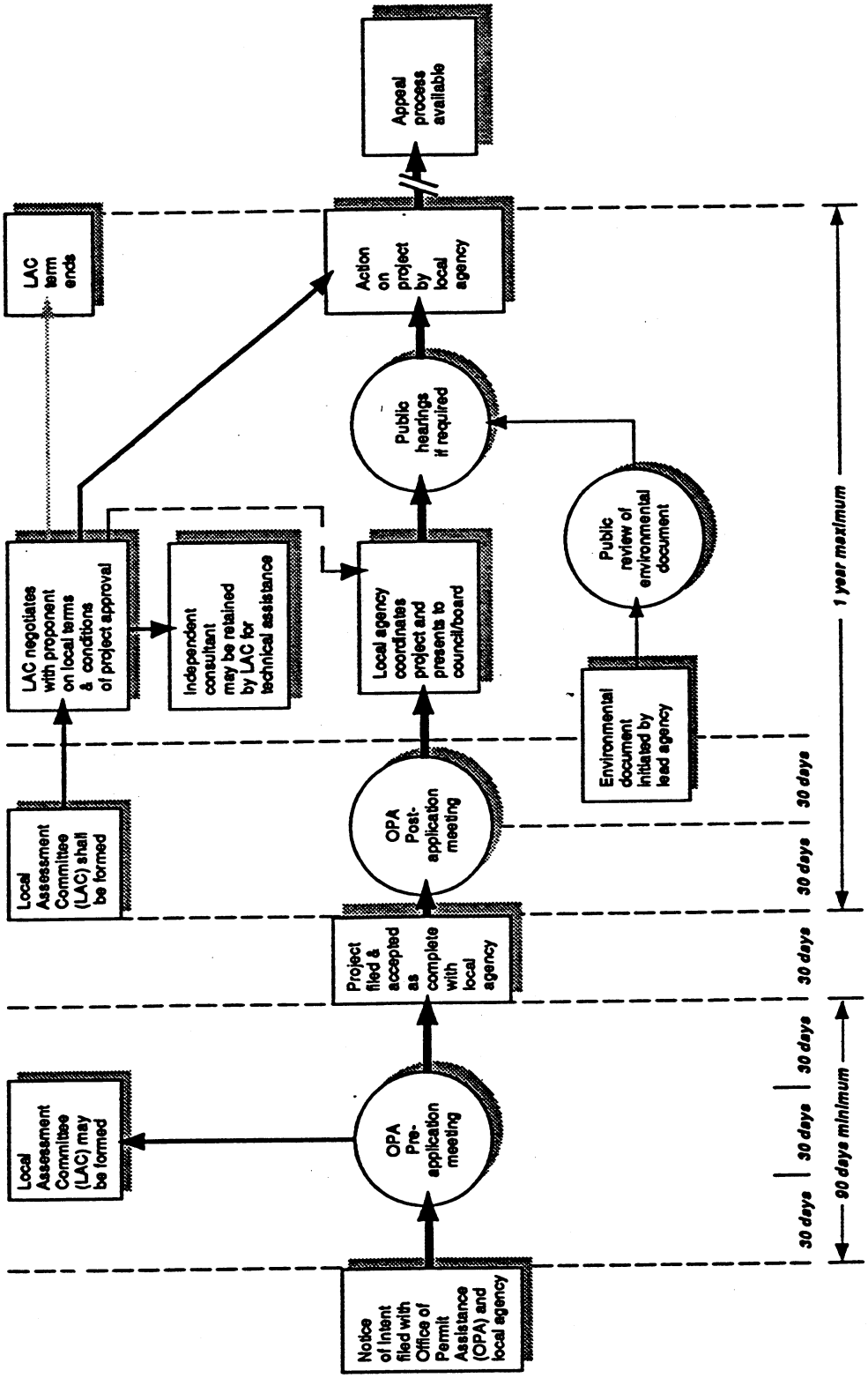
Needs for New Facilities and/or Facilities Expansion

A permanent facility should be designed to safely identify, pack, and store hazardous materials which come to the facility. Typically this facility will consist of a receiving area, a staging area where materials are bulked and lab-packed, and a hazardous waste storage area. The perimeter of area must be fenced, secure, and well-lit.

Figure 4-1

Specified Hazardous Waste Facility Decision Flow Chart

Local Land Use Process



The receiving area should be an impermeable, bermed, concrete pad which is designed to adequately contain any spills which could occur during the unloading process. This area should be accessible yet restrict participants from entering the staging area.

The staging area will consist of bulking and lab-packing of hazardous materials collected at the facility. The tanks used for storage of bulked liquid wastes must be located within a sealed impermeable concrete bermed area able to provide secondary containment of at least 110 percent containment of the full contents of each tank. For multiple tanks, the bermed area should provide secondary containment equivalent to 150 percent of the largest tank or 10 percent of the aggregate (total of all containers), whichever is greater. Awnings and shelters over these tanks are needed to keep precipitation from collecting in the bermed areas. The lab-packing area should also be bermed and impermeable with adequate ventilation for workers at all times.

The storage area must be an enclosed or semi-enclosed structure. It must also provide secondary containment, as well as a means of physically separating incompatible materials within the storage structure. The storage structure must be well marked with the appropriate signs and placards. Safety equipment accessible, within or outside of the structure, must include eye-washes, emergency showers, and fire extinguishers. Prefabricated structures which incorporate all of the aforementioned requirements for proper hazardous waste storage are commercially available.

In addition, a permanent facility should have facilities or access to facilities which can identify all unmarked wastes. Unidentified wastes must be identified by a chemist or a trained individual familiar with chemical incompatibilities before materials are lab packed for transport. Other safety equipment required on-site include: respirators, SCBAs, absorbent materials, eye protection, and safety clothing.

Consistency with Local Policies, Plans, and Ordinances

The County Hazardous Waste Management Plan (CHWMP) supports the implementation of multiple permanent facilities for HHW. The CHWMP considers the option of establishing two or more sites within the County to serve the western and eastern wastesheds. One of the tasks includes creating an inventory of potential sites for permanent facilities which meet the siting criteria outlined in Table 11A, Chapter 11 of the CHWMP. To summarize the criteria, the following types of areas are excluded from consideration as a permanent facility site:

- natural resource protection overlay zones
- areas within a 1,000-foot radius of schools, hospitals, or extended care facilities

- areas of potentially serious geologic hazards (i.e., Alquist-Priolo special study zones)
- areas subject to inundation by 100-year floods

The CHWMP also states that "a site could be established which is not in compliance with all the siting criteria, as long as it is shown by the proponent that public health, safety, and the environment will be protected."

In October of 1989, the Tanner Plan Subcommittee initiated a county-wide survey to implement this task. The intent of the survey was to screen out sites unable to meet the basic siting criteria outlined in the CHWMP. The Planning Division responded to this survey and indicated that there were very few sites that would meet the criteria and still provide convenient service to residents. Other comments from the survey included:

- Such a facility would be conditionally permitted in the following zones: AE, OS, RA, RE, and M3.
- A conditional use permit for the project would have to be approved by the Planning Commission and possibly the Board of Supervisors.

Estimate of Costs

Permanent collection facilities provide ample opportunities for reuse, recycling and materials consolidation which significantly lowers disposal costs. This savings is due to the longer HHW storage periods allowed at a permanent facility. Typically, variances will allow a storage period of up to 90 days (a TSD facility permit will allow storage beyond 90-days). These longer detention periods allow implementation of on-site reuse programs such as paint exchanges, as well as allow facility operators to insure that full-drums are being manifested for disposal. In addition, permanent facilities provide the operator with the opportunity to dispose of each hazardous waste type by competitive bid, thereby decreasing overall disposal costs.

Personnel Expenses

Staffing for a permanent collection facility will typically consist of the following personnel:

- One chemist or qualified hazardous material specialist must be present at the facility to supervise all waste handling and acceptance activities. This person must have at least three years of responsible experience in environmental health, industrial hygiene, chemistry, toxicology or epidemiological work. This person must also be knowledgeable

in the laws, regulations, and ordinances which govern hazardous materials and hazardous waste management.

- One or more technicians trained in general hazard category identification for HHW, emergency response procedures, proper lab-packing procedures, and hazardous waste storage and transport procedures.

- Volunteers/extra-help to assist in distributing publicity materials, obtaining survey information, and providing informational materials.

If County personnel were to staff the facility, costs would range from $35 to $50 per hour (including benefits) for the supervisory staff person and $20 to $30 per hour for each trained waste handler. Hazardous waste site operations training required under OSHA 29 CFR Part 1910.120 would cost $500 to $900 per person for the initial 40-hour course and $100 to $200 per person for the annual 8-hour review and update. If private contractors are used to run a facility, costs would range from $45 to $55 per hour for the supervisory staff person and $35 to $40 per hour for the technicians (these costs include overhead and training).

Publicity Costs

Since the facility will be open on a permanent basis, less costly methods of advertisement can be used. Local newspaper advertisements and free sources of publicity such as press packets, press conferences, public service announcements, and community organization announcements should be relied upon to reduce costs. Dedicated phone lines can also be used to provide facility hours operation and types of materials accepted. Other more costly methods of advertisement such as utility bill inserts, direct mail, and radio spots should only be used as funds permit. A publicity budget of $2,000 for the first year should be adequate.

Public Education/Information Costs

Educational material costs can vary widely depending on the approach used. Designing and printing brochures and handouts can vary from $1,000 to $5,000. Free educational materials are also available from various state and local agencies. Methods of education such as videotapes and HHW displays are also desirable since they can be reused without additional cost.

Capital Equipment and Facilities Costs

A permanent facility will require a concrete pad for the receiving and staging area, storage tanks with secondary containment for storing bulked wastes, and an enclosed structure to safely store and adequately segregate all lab-packed materials. Other capital expenses required in the operation of a permanent facility include office structures, spill and safety equipment, and

personal protective equipment. Table 4-6 provides unit costs for each of these capital and operating expenses. Total costs will depend on the amount of waste collected at the site and the degree of facilities expansion required at the selected site.

Table 4-6
Capital Equipment Costs for a Permanent Collection Facility

Type of Equipment	Description	Unit Cost
Safety Equipment	fire extinguishers	$80 each
Personal Protective Equipment	suits, eye protection, respirators, gloves, footgear, first aid, etc.	$1000 per person
HazCat ID Kit	chemical ID kit	$1,000 per kit
Spill Equipment	absorbent berms and powder, non-spark tools	$3,500 per site
Building Security	fencing, security lighting	$6,000 per site
Lab-pack/Labelling	drums, DOT labels, vermiculite, drum tops	$3,500 per 50 drums
HHW Storage Structure	storage structure w/secondary containment, fire suppression system, chemical resistant flooring, eyewash station, shelving, sump, ventilation system	$20,000 per 10 drums stored
Aboveground Tanks	tank w/secondary containment pallets	$1,500 per tank
Misc Equipment	carts, dollies, carriers, shelving, awnings	$3,000 per site
Concrete Pad	bermed concrete pad with sealant	$15,000 per site
Office Structure	structure, office equipment, restroom, utilities	$30,000 per site

Hazardous Waste Transportation and Disposal Costs

Waste transportation and disposal costs are very difficult to estimate in a collection program since it is highly dependent on the following factors:

- types and quantities of HHW brought to the program by each household
- percent of participation anticipated from the community
- recycling/disposal costs for each type of material collected

With an aggressive public education program, participation for this type of facility may range between 10 to 20 percent of the total dwelling units. As in the periodic collection scenario, the geographic dispersion of the unincorporated area would necessitate addressing at least two

permanent collection sites, one in the western end of the County and the other in the eastern end.

If a facility was to be centrally located in the western end of the County, areas which could reasonably be expected to participate include the Western County Inland and the Ojai Valley which represents approximately 16,873 dwelling units. At a 10 percent and 20 percent participation rate, approximately 1,687 and 3,375 households, respectively, can be expected to use this facility.

If a facility was to be centrally located in the eastern end of the County, areas which could reasonably be expected to participate include the East County communities which represents approximately 8,402 dwelling units. At a 10 percent and 20 percent participation rate, approximately 840 and 1,680 households, respectively, can be expected to contribute to use this facility. With these assumptions, ranges of transportation and disposal costs can be estimated for each corresponding facility (see Table 4-7).

Table 4-7
Permanent HHW Facilities
Transportation and Disposal Cost Estimates at Different Levels of Participation

Material Type	HHW (gals/yr)	Western County Facility				Eastern County Facility			
		10% Participation		20% Participation		10% Participation		20% Participation	
		gals	costs[1]	gals	costs[1]	gals	costs[1]	gals	costs[1]
Motor Oil	1.55	2,615	$392	5,231	$785	1,302	$195	2,605	$391
Latex Paint	0.67	1,130	$0	2,261	$0	563	$0	1,126	$0
Oil-Paint/ Flamm	1.39	2,345	$13,495	4,691	$26,995	1,168	$6,721	2,336	$13,443
Lab Packs	1.55	2,615	$44,730	5,231	$89,478	1,302	$22,271	2,605	$44,559
TOTALS:	**5.16**	8,705	**$58,617**	17,414	**$117,258**	4,335	**$29,187**	8,672	**$58,393**

[1]Estimated costs for recycling/disposing of materials: motor oil, $0.15/gallon; latex paint, no charge; oil-base paint/flammables, $305/drum @ 53 gallons/drum; lab packs, $325/drum @ 19 gallons/drum. These costs include transportation and recycling/disposal, no labor or handling. Costs are based on estimates provided by hazardous waste management firms, June 1990.

Cost Summary

Table 4-8 summarizes the total costs needed to construct and operate a permanent HHW collection facility. Costs for capital equipment could be as much as 50 percent less if the selected site had an existing concrete pad and an office structure. Also, if this program were implemented on a multi-jurisdictional basis, construction costs and personnel costs could be shared, further lowering overall costs. Personnel costs were calculated assuming that the County would establish a contract with a hazardous waste management firm to staff the facility for 20 hours of operation per week. Analytical profiling needed at a lab will be reduced due to the availability of a lab at the facility. Drums requiring special handling, such as incineration or encapsulation, have also been calculated at a rate of one in every 300 households.

Table 4-8
Permanent Collection Programs
Total Implementation Cost: 10% and 20% Participation

Description	Western County Facility		Eastern County Facility		Notes
	Costs - 10% Participate	Costs - 20% Participate	Costs - 10% Participate	Costs - 20% Participate	
Personnel Expenses	65,000	130,000	65,000	65,000	Assumes 1 to 2 techs and .5 to 1 chemist 20 hrs/wk
Publicity Costs	$2,000	$2,000	$2,000	$2,000	
Public Education	$1,687	$3,375	$840	$1,680	$1 per participant
Transportation/Disposal	$58,617	$117,258	$29,187	$58,393	
Analytical Profiling	$2,025	$4,050	$1,008	$2,016	One profile every 500 participants @ $600
Special Handling	$5,624	$11,249	$2,801	$5,601	One drum every 300 participants @ $1000
TOTAL COSTS:	**$134,953**	**$267,932**	**$100,836**	**$134,690**	
YEARLY OPERATIONS COST PER HOUSEHOLD:	**$80/HH**	**$79/HH**	**$120/HH**	**$80/HH**	Cost per participating household
CAPITAL EQUIPMENT COST:	**$123,900**	**$183,900**	**$103,900**	**$123,900**	Assumes no existing facility

Availability of End Uses for Diverted Materials

Waste oil collected during the program should be re-refined, whenever possible, along with filters and containers previously contaminated with waste oil. Waste oil sent to a re-refiner should always be kept segregated from paints and solvents. Using waste oil in an alternative fuels program should be a lower priority. Oil-based paints can be blended with waste oil and sent to an alternative fuels program. Latex paints can be bulked and reprocessed at a paint recycling facility. If this option is chosen, the County may make financial arrangements to buy back the blended paint. Useable paints collected at the site could be used by the County for maintenance and upkeep of structures or can be donated to non-profit community organizations. Paint exchanges can also be arranged for private parties to select paints they desire. Lead acid batteries can be sent by hauler to a battery smelter for lead recovery and recycling. The longer storage periods will generally increase overall reuse and recycling of collected materials.

Effectiveness of Reducing Volume/Weight of HHW Generated

This option is very effective in reducing the overall weight of HHW unsafely disposed since non-recyclable HHW can consist of up to 40% of the total wastestream. Since the facility is available to residents on a permanent basis, participation will be much higher than periodic collection, therefore allowing the capture of more HHW. The permanent site also allows time for the promotion of safe substitutes and least-toxic products thereby allowing additional source reduction to occur.

4.1.4 MOBILE COLLECTION PROGRAMS

A mobile collection program is a transportable HHW collection "vehicle" which rotates its collection sites within a jurisdiction. A mobile HHW collection facility will typically consist of a specially designed storage building which can be mounted on a semi-truck trailer for ease of transport. Mobile collection units will typically stay at one location for a period of 2 to 4 weeks before moving to the next collection site. This service is generally provided to a community free of charge to ensure maximum participation. Residents from the targeted community are instructed to bring their HHWs to the designated location where these wastes are accepted and segregated into compatible categories by personnel who are knowledgeable in hazardous waste disposal practices. Collected wastes are recycled when possible or transported to an incineration or disposal facility. This type of program will typically be implemented as a sub-regional or regional program.

Potential Hazards

A mobile collection facility has many of the same hazards concerning illegal drop-off as permanent collection facilities. An additional complication is that many people may be unfamiliar with the operational hours hence, they may leave items unattended outside the facility. Although waiting times for mobile collection programs are typically less than periodic collection programs, some traffic congestion will occur and can present some evacuation hazards should an incident occur. The potential for a release to occur is also greater than a permanent facility since a mobile collection program handles more participants per day.

Accommodation to Changing Conditions

Mobile collection facilities retain much of the flexibilities inherent in a one-day collection program. However, changes in the following areas may impact a mobile collection program:

- Changes in regulations may affect the management method or volume of incoming HHWs. For example, wastes which were previously considered non-hazardous someday, could be considered hazardous and therefore must be collected at the facility. These types of changes may necessitate purchasing additional capital equipment (such as additional storage sheds), increase disposal costs, or require additional staffing at the facility.

- Changes in the types of HHWs received by the facility can be accommodated without much confusion. Mobile collection centers remain at one location long enough for the residents to remember the site but not long enough for people to remember the types of materials that were allowed. Heavy education on materials changes will alleviate much of this confusion if changes are necessary.

- Changes in adjacent communities may generate complaints where there was once support. If this should happen, a new temporary site can be selected without delaying or halting the program. Influx of more people, addition of schools and day-care centers, and new public recreation areas may force the relocation of the collection site.

- Changes in location of a temporary site will require extensive re-education or will result in confusion. Changes in the hours of operation, however, is not as critical since most participants will not remember the hours from the previous collection round.

- Addition of other permanent sites to service previously unpopulated regions is not difficult, as long as adequate time is allowed for transport between sites.

Institutional Barriers

Since mobile collection programs do not require that a site be permanently dedicated for collection of HHW, institutional barriers such as public acceptance and permitting are not significant due to the flexibility of the program.

Short-Term and Medium-Term Implementation

The implementation process can take up to 15 months. This process includes the variance application, site selection, requests for proposals for equipment and/or facility staffing, and the development of memorandums of understanding for joint project implementation. This option should therefore be considered for the short-term implementation period.

Needs for New Facilities and/or Facilities Expansion

Because of the temporary nature of a mobile collection unit, the site which it is operating on cannot be permanently modified in any way or form to impede it from its normal operations. Therefore, sites which are selected should already have adequate access, security, lighting, and a paved, impermeable surface to work on. The major items of acquisition would be the storage unit, staff mobile offices, equipment van, vehicle, and portable sanitary facilities.

The storage unit must be an enclosed self-contained structure. It must provide adequate secondary containment and separation of incompatible materials within the storage structure. The storage structure must also be well marked with the appropriate signs and placards. Safety equipment accessible within or outside of the structure must include eye-washes, emergency showers, and fire extinguishers. Prefabricated structures which incorporate all of the aforementioned requirements for proper hazardous waste storage are commercially available. These structures must also be transportable from site to site.

Like a permanent facility, a mobile collection unit should have facilities or access to facilities which can identify all unmarked wastes. These wastes must be identified by a chemist or a trained individual, familiar with chemical incompatibilities before materials are lab-packed for transport. Other safety equipment required in this type of collection program include:

respirators, self-contained breathing apparatus (SCBAs), absorbent materials, eye protection, and safety clothing.

Consistency with Local Policies, Plans, and Ordinances

The County Hazardous Waste Management Plan (CHWMP) encourages programs which provide residents with environmentally sound disposal options for HHWs. Although the CHWMP does not specifically address mobile collection programs, this concept is consistent with the intent of the County-wide plan.

Estimate of Costs

Mobile collection programs allow ample opportunities for reuse, recycling and materials consolidation which significantly lowers disposal costs. This savings is due to the longer HHW storage periods allowed at a mobile collection center. Typically, variances will allow a storage period of up to 90 days. These longer detention periods allow implementation of on-site reuse programs such as paint exchanges, as well as allow facility operators to insure that full-drums are being manifested for disposal. Collection areas would have to be identified and minimum improvements made, such as temporary berm areas, site security, and traffic arrangements. This option would also offer flexibility both in the hours and the location of services offered, and require a smaller initial investment in money and services.

Personnel Expenses

Staffing for a mobile collection facility will typically consist of the following personnel:

- One chemist or qualified hazardous material specialist must be present at the facility to supervise all waste handling and acceptance activities. This person must have at least three years of responsible experience in environmental health, industrial hygiene, chemistry, toxicology or epidemiological work. This person must also be knowledgeable in the laws, regulations, and ordinances which govern hazardous materials and hazardous waste management.

- One or more technicians trained in general hazard category identification for HHW, emergency response procedures, proper lab-packing procedures, and hazardous waste storage and transport procedures.

- Volunteers/extra-help to assist in distributing publicity materials, obtaining survey information, and providing informational materials.

If County personnel were to staff the facility, costs would range from $35 to $50 per hour (including benefits) for the supervisory staff person and $20 to $30 per hour for each trained waste handler. Hazardous waste site operations training required under OSHA 29 CFR Part 1910.120 would cost $500 to $900 per person for the initial 40-hour course and $100 to $200 per person for the annual 8-hour review and update. If private contractors are used to run a facility, costs would range from $45 to $55 per hour for the supervisory staff person and $35 to $40 per hour for the technicians (these costs include overhead and training).

Publicity Costs

Since the mobile collection unit will move from three to four designated locations over the course of a year, a strong publicity program is needed to inform residents when it will be in their area. Continual newspaper advertisements and direct mail should be used to remind residents current and future locations of the mobile collection units. A "hotline number" should also be established to provide continual updated information on the current location and duration of the unit. Free sources of publicity such as press packets, press conferences, public service announcements, and community organization announcements should also be relied upon to reduce costs. A yearly publicity budget of approximately $6,000 would be required to adequately inform residents.

Public Education/Information Costs

Educational material costs can vary widely depending on the approach used. Designing and printing brochures and handouts can vary from $1,000 to $5,000. Free educational materials are also available from various state and local agencies. Methods of education such as videotapes and HHW displays are also desirable since they can be reused without additional cost.

Capital Equipment and Facilities Costs

A mobile collection program will require a storage unit, mobile offices, equipment van, and portable sanitary facilities. Other capital expenses required include spill and safety equipment, and personal protective equipment. Table 4-9 provides unit costs for each of these capital and operating expenses.

Hazardous Waste Transportation and Disposal Costs

Waste transportation and disposal costs are very difficult to estimate in a mobile collection program since it is highly dependent on the following factors:

- types and quantities of HHW brought to the program by each household
- percent of participation anticipated from the community
- recycling/Disposal costs for each type of material collected

Transportation and disposal costs will be very similar to costs outlined in Table 4-7. Participation rates will remain relatively the same as the permanent facility since the shorter time durations will be equalized by the accessibility of the mobile units to more communities within the unincorporated area.

Table 4-9
Capital Equipment Costs for a Mobile Collection Program

Type of Equipment	Description	Unit Cost
Safety Equipment	fire extinguishers	$80 each
Personal Protective Equipment	suits, eye protection, respirators, gloves, footgear, first aid, etc.	$1000 per person
HazCat ID Kit	chemical ID kit	$1,000 per kit
Spill Equipment	absorbent berms and powder, non-spark tools	$3,500 per site
Lab-pack/Labelling	drums, DOT labels, vermiculite, drum tops	$3,500 per 50 drums
HHW Storage Structure	storage structure w/secondary containment, fire suppression system, chemical resistant flooring, eyewash station, shelving, sump, ventilation system	$20,000 per 10 drums stored
Aboveground Tanks	tank w/secondary containment pallets	$1,500 per tank
Misc Equipment	carts, dollies, carriers, shelving, awnings	$2,500
Misc Structures	portable restroom/shower facilities	$5,000 each
Office Structure	structure, office equipment, generator	$15,000

Cost Summary

Table 4-10 summarizes the total costs needed to operate a mobile collection unit. For this cost summary, it was assumed that the facility would rotate to three different locations within the County and be open for 24 hours per location with a 4 hour set-up time allocated for each location. Personnel costs were calculated assuming that the County would establish a contract with a hazardous waste management firm to staff the facility with three to five people for each

location. Drums requiring special handling, such as incineration or encapsulation ($600 to $1600 per drum), were also included in the cost summary.

Costs savings could be achieved if the sites selected had existing office spaces which could be shared by mobile collection unit staff. Also, if this program were implemented on a multi-jurisdictional basis, many of the fixed equipment and labor costs could be shared with a number of jurisdictions, significantly lowering overall costs. Other short-term cost saving strategies that can be used include renting equipment instead of purchasing equipment.

Table 4-10
Mobile Collection Programs
Total Implementation Cost: 10% and 20% Participation

Description	Western County Facility		Eastern County Facility		Notes
	Costs - 10% Participate	Costs - 20% Participate	Costs - 10% Participate	Costs - 20% Participate	
Personnel Expenses	14,280	21,000	10,920	14,280	Assumes 1 to 2 techs and .5 to 1 chemist 20 hrs/wk
Publicity Costs	$2,000	$2,000	$2,000	$2,000	
Public Education	$1,687	$3,375	$840	$1,680	$1 per participant
Transportation/Disposal	$58,617	$117,258	$29,187	$58,393	
Analytical/Profiling	$2,025	$4,050	$1,008	$2,016	One profile every 500 participants @ $600
Special Handling	$5,624	$11,249	$2,801	$5,601	One drum every 300 participants @ $1000
TOTAL COSTS:	**$84,233**	**$158,932**	**$46,756**	**$83,970**	
YEARLY OPERATIONS COST PER HOUSEHOLD:	**$50/HH**	**$47/HH**	**$56/HH**	**$50/HH**	Cost per participating household
CAPITAL EQUIPMENT COST:	**$109,700**	**$182,200**	**$85,200**	**$109,700**	Assumes no existing facility

Availability of End Uses for Diverted Materials

Waste oil collected during the program should be re-refined, whenever possible, along with filters and containers previously contaminated with waste oil. Waste oil sent to a re-refiner should always be kept segregated from paints and solvents. Using waste oil in an alternative fuels program for bunker fuel should be a lower priority. Oil-based paints can be blended with waste oil and sent to an alternative fuels program. Latex paints can be bulked and mixed on-site for use in local paint exchanges or building maintenance. Useable paints collected at the site could be used by the County for upkeep of structures, or can be donated to non-profit community organizations. Paint exchanges could be arranged enabling residents to select reusable paints in a color of their choice. Car batteries can be sent by hauler to a battery smelter for lead recovery and recycling.

Effectiveness of Reducing Volume/Weight of HHW Generated

This option is very effective in reducing the overall weight of HHW unsafely disposed since it provides a reliable outlet for non-recyclable HHW which consists of up to 40 percent of the total wastestream. Since the facility is available to residents on a semi-permanent rotating basis, participation will be much higher than periodic collection, therefore allowing the capture of more HHW. The extended stay at the site also allows time for the promotion of safe substitutes and least-toxic products thereby allowing additional source reduction to occur.

4.1.5 CURBSIDE COLLECTION PROGRAMS

In a curbside collection program, residents set their HHWs at the curb on specially designated days throughout the year. Specially equipped trucks staffed by trained workers would then collect these wastes directly from the curb. The wastes are classified on-site according to compatibility. Wastes are then bulked or lab-packed and transported to an interim permitted facility for storage up to 90 days. Once sufficient quantities are collected, they are sent off for recycling or disposal. This type of program is typically implemented in conjunction with existing garbage or curbside recycling collection.

Potential Hazards

The potential for the mixing of incompatible materials is high since the collection vehicle may not be large enough to provide absolute separation of incompatible materials at all times. Also liquids such as waste oil or anti-freeze could spill onto the sidewalk or street causing hazards to both children and pets. Wastes set out on the curb are also relatively unprotected and very accessible and vulnerable to weather and passing vehicles. Safely collecting, identifying, packing, and transporting wastes within the vehicle is difficult due to the limitations in space and the short length of time allowed per stop in curbside programs.

Accommodation to Changing Conditions

Curbside HHW collection programs retain much of the flexibilities inherent in a mobile collection program. Changes in the following areas may impact this type of curbside program:

- Changes in regulations may affect the management method or volume of incoming HHWs. For example, wastes which were previously considered non-hazardous someday, could be considered hazardous and must be added to the list of collected materials. These types of changes may necessitate purchasing additional capital equipment (more trucks to accommodate increases in material), increase disposal costs, or require additional staffing to operate additional vehicles.

- Changes in the types of HHWs picked up by the program will create much confusion and require an extensive re-education process.

- Days of pick-up will have to be consistent with garbage and/or recycling collection days in each community. Using other days will cause confusion and low participation in the program.

- Addition of other communities can be accommodated by modifying existing routes or adding new service routes.

Institutional Barriers

In order to implement this type of program, the existing residential haulers would need to cooperate and agree to provide modified vehicles to accept the waste. This would require modifications in existing franchises or contracts to compensate the hauler for the pick-up of additional materials. If all types of HHW are picked up in this program, hazardous waste

hauling permits and EPA identification numbers may be needed by the haulers. The hauling company would also need to train their personnel in hazardous waste handling and operations as required by OSHA. The County and the hauler would also have to come to an agreement on liability and responsibility should an incident occur while pick-up service is being provided. Establishing a central location to temporarily store the collected materials will also require modification of existing permits or additional variances.

Short-Term and Medium-Term Implementation

If all institutional barriers can be overcome, this option can be implemented during the short-term implementation period.

Needs for New Facilities and/or Facilities Expansion

This program will require modification of existing refuse collection vehicles or purchase of new vehicles. This program will also need to establish and permit an interim facility to store materials until they can be properly disposed or recycled. If HHW collection is concurrent with recyclables collection, this temporary storage facility should preferably be established at the same location as recyclables processing. This will require additional coordination with the operator of this facility.

Consistency with Local Policies, Plans, and Ordinances

The County Hazardous Waste Management Plan (CHWMP) encourages programs which provide residents with environmentally sound disposal options for HHWs. Although the CHWMP does not specifically address curbside collection of HHWs, the concept is consistent with the intent of the County-wide plan.

Estimate of Costs

Costs incurred in this type of program will depend on the willingness of the refuse collection hauler to retrofit existing equipment to accommodate the program. To implement this program, the County must also establish a temporary storage facility with a staging and storage area similar to the requirement of the permanent collection facility.

Collection Costs

Collection costs could be minimized if collection is carried out by residential refuse haulers already serving the unincorporated areas. Currently, recyclables collection costs are an additional $1.50 to $2.00 per household per month. If HHWs were to be collected, additional costs may be another $2.00 to $3.00 per household per month to offset additions and modifications of equipment, as well as refuse collection staff training.

Publicity Costs

Since curbside collection could occur in conjunction with refuse and recyclables collection, utility bill inserts can be used to remind residents of the HHW collection days. Local newspaper advertisements and free sources of publicity such as press packets, press conferences, public service announcements, and community organization announcements should be relied upon to reduce costs. A publicity budget of $1,000 for the inserts and $1,000 for newspaper advertisements for the first year should be adequate.

Public Education/Information Costs

The ability to distribute educational materials is limited due to the time constraints imposed on the collection staff. Educational materials may be best distributed through concurrent public information and education programs.

Capital Equipment and Facilities Costs

In addition to vehicle modifications and collection staffing, a facility would be needed for receiving and storing wastes unloaded from the collection vehicles. As mentioned earlier, this facility will most preferably be located at the recyclables processing facility. This temporary storage area would require an enclosed storage structure to safely store and adequately segregate all lab-packed and bulked materials. Other capital expenses required for this storage area include spill and safety equipment, and personal protective equipment. Table 4-11 provides unit costs for each of these capital and operating expenses. Total costs will depend on the amount of waste collected at the site and the degree of facilities expansion required at the selected site.

Table 4-11
Capital Equipment Costs for a Temporary Storage Area for Curbside Collection

Type of Equipment	Description	Unit Cost
Personal Protective Equipment	suits, eye protection, respirators, gloves, footgear, first aid, etc.	$1,000 per person
HazCat ID Kit	chemical ID kit	$1,000 per kit
Spill Equipment	absorbent berms and powder, non-spark tools	$3,500 per site
Lab-pack/Labelling	drums, DOT labels, vermiculite, drum tops	$3,500 per 50 drums
HHW Storage Structure	storage structure w/secondary containment, fire suppression system, chemical resistant flooring, eyewash station, shelving, sump, ventilation system	$20,000 per 10 drums stored
Misc Equipment	carts, dollies, carriers, shelving, awnings	$3,000 per site

Hazardous Waste Transportation and Disposal Costs

Waste transportation and disposal costs are very difficult to estimate in a collection program since it is highly dependent on the following factors:

- types and quantities of HHW brought to the program by each household
- percent of participation anticipated from the community
- recycling/disposal costs for each type of material collected

Considering the convenience of this type of program, high participation rates of 75 percent would not be unreasonable. At these participation rates, Western County participation will approximately amount to 12,654 households and Eastern County participation will amount to 6,301 households. Table 4-12 totals the ranges of transportation and disposal costs for a 75 percent participation scenario.

Table 4-12
Transfer and Disposal Cost Estimates for Curbside Collection Program

Material Type	Generation per Household (gals/yr)	West County		East County	
		75% Participation		75% Participation	
		gals/yr	costs[1]/yr	gals/yr	costs[1]/yr
Motor Oil	1.55	19,615	$2,942	9,767	1,465
Latex Paint	0.67	8,479	$0	4,222	$0
Oil-Paint/Flammables	1.39	17,590	$101,225	8,759	50,405
Lab Packs	1.55	19,615	$335,520	9,767	167,067
TOTALS:	**5.16**	65,299	**$439,687**	32,515	**$218,937**

[1]Estimated costs for recycling/disposing of materials: motor oil, $0.15/gallon; latex paint, no charge; oil-base paint/flammables, $305/drum @ 53 gallons/drum; lab packs, $325/drum @ 19 gallons/drum. These costs include packing material, transportation and recycling/disposal, no labor or handling. Costs are based on estimates provided by hazardous waste management firms, June 1990.

Cost Summary

Table 4-13 summarizes the total costs needed to implement a curbside collection program for HHWs. For this cost summary, it was assumed that the current hauler would provide the collection services for the various unincorporated areas for an additional increase in fees. Personnel costs were calculated assuming that the County would establish a contract with a hazardous waste management firm to staff the temporary storage location with one chemist and two to four technicians at 40 hours per week. Analytical profiling needed at a lab will be reduced due to the availability of a lab at the facility. Drums requiring special handling, such as incineration or encapsulation, have also been calculated at a rate of one in every 300 households.

Table 4-13
Curbside Collection Programs Total Implementation Cost

Description	Western Co. Program Costs - 75% Participate	Eastern Co. Program Costs - 75% Participate	Notes
Personnel Expenses	$420,000	$340,000	Assumes 3 or 4 techs and 1 chemist 40 hrs/wk
Publicity Costs	$2,000	$2,000	
Public Education	$12,655	$6,302	$1 per participant
Transportation/Disposal	$439,687	$218,937	
Analytical Profiling	$15,186	$7,562	One profile every 500 participants @ $600
Special Handling	$42,183	$21,005	One drum every 300 participants @ $1000
TOTAL COSTS:	**$931,711**	**$595,806**	
YEARLY OPERATIONS COST PER HOUSEHOLD:	**$74/HH**	**$95/HH**	Cost per participating household
CAPITAL EQUIPMENT COST:	**$583,900**	**$323,900**	Assumes no existing facility

Availability of End Uses for Diverted Materials

Waste oil collected during the program should be re-refined, whenever possible, along with filters and containers previously contaminated with waste oil. Waste oil sent to a re-refiner should always be kept segregated from paints and solvents. Using waste oil in an alternative fuels program for bunker fuel should be a lower priority. Oil-based paints can be blended with waste oil and sent to an alternative fuels program. Latex paints can be bulked and mixed on-site for use in local paint exchanges or building maintenance. Useable paints collected at the site could be used by the County for maintenance and upkeep of structures, or can be donated to non-profit community organizations. Paint exchanges could be arranged enabling residents to select reuseable paints in a color of their choice. Lead acid batteries can be sent by hauler to a battery smelter for lead recovery and recycling. The longer storage periods will generally increase overall reuse and recycling of collected materials.

Effectiveness of Reducing Volume/Weight of HHW Generated

This option is very effective in reducing the overall weight of HHW unsafely disposed. Because the convenience of this program will motivate 80% of all residents to participate, more HHW will be collected and properly disposed through curbside collection. Curbside collection also provides a mechanism in which informational brochures can be left at each household. It does not, however, provide a forum for residents to ask questions about safe substitutes and least-toxic products.

4.2 Load Checking Programs

A load checking program is designed to protect solid waste landfills from improper disposal of hazardous wastes through implementation of the following tasks:

- identify and remove hazardous wastes that have entered the solid waste stream
- encourage the proper disposal of hazardous, or prohibited waste to solid waste landfills
- ensure proper management of hazardous wastes that are delivered to solid waste facilities
- identify generators who place hazardous wastes in the solid waste stream and require them to assume responsibility for proper waste management

The basic elements of this program includes site security and surveillance, identification of permissible and nonpermissible wastes, public education and training of collection and solid waste facility personnel, cooperation from customers, and proper identification, packaging and storing of hazardous wastes found in the solid waste stream. Meeting these goals would require the joint efforts of haulers, landfill operators, and public agencies charged with enforcement responsibilities. A successful program depends on the availability of environmentally sound alternatives of hazardous waste disposal and public awareness of the laws restricting hazardous waste disposal.

4.2.1 EXISTING LOAD CHECKING PROGRAMS AT LANDFILLS

As was mentioned in Section 3.2, Load Checking Programs, the following facilities currently have operational load checking programs: Bailard Landfill, Simi Valley Landfill, Calabasas Landfill (Los Angeles County) and the Lebec Transfer Station (Kern County).

Potential Hazards

This program may discourage haulers from bringing potentially hazardous wastes to the landfill. They may be inclined to illegally dispose of suspect loads. Other hazards include landfill workers risk of exposure to hazardous wastes during the load-checking inspection process through handling of hazardous wastes.

Accommodation to Changing Conditions

The program is flexible in that it can be made more aggressive by adding additional staff if required by public agencies. Additional HHW can be collected through this program through minimal training at the landfill.

Institutional Barriers

There are no significant institutional barriers. This program is required by the Regional Water Quality Control Board (RWQCB).

Short-Term and Medium-Term Implementation

This option is currently being implemented.

Needs for New Facilities and/or Facilities Expansion

No new facilities are necessary since this option is currently being implemented.

Consistency with Local Policies, Plans, and Ordinances

The RWQCB requires most landfills to conduct a load checking program. The County Hazardous Waste Management Plan (CHWMP) encourages programs which ensure the safe disposal of all hazardous materials. Although the CHWMP does not specifically address load checking programs, the concept is consistent with the intent of the County-wide plan.

Estimate of Costs

The costs vary depending on the sophistication of the program, the frequency of landfill load checking and the amounts and types of wastes diverted through the program. The costs are usually included in landfill operations and environmental monitoring budgets.

Availability of End Uses for Diverted Materials

All materials collected in loadchecking programs are recycled when possible or disposed in a Class I landfill.

Effectiveness of Reducing Volume/Weight of HHW Generated

This option is not very effective in reducing the overall weight of HHW illegally disposed in the trash. When front loader vehicles are used, the force of compaction frequently causes containers holding HHW to leak. The liquids then become absorbed in the surrounding material making loadchecking and removal of this waste virtually impossible. Much of the hazardous waste recovered from loadchecking programs are also illegal disposals from the commercial and industrial sectors. Providing residential education and information is very limited since the violating household cannot be traced.

4.2.2 LOAD CHECKING AT FACILITIES WITHOUT PROGRAMS

The following facilities currently do not have load checking programs: Ojai Anti-Litter Station, and the Toland Road Landfill.

Potential Hazards

This program may discourage haulers from bringing potentially hazardous wastes to the landfill. They may be inclined to illegally dispose of suspect loads. Other hazards include landfill workers risk of exposure to hazardous wastes during the load-checking inspection process through handling of hazardous wastes.

Accommodation to Changing Conditions

The program is flexible and can become more stringent by adding additional staff if required by public agencies.

Institutional Barriers

No significant institutional barriers.

Short-Term and Medium-Term Implementation

This program can be implemented in the short-term implementation period.

Needs for New Facilities and/or Facilities Expansion

No new facilities are necessary. Additional labor may be necessary to provide inspections and document diverted materials.

Consistency with Local Policies, Plans, and Ordinances

The RWQCB requires most landfills to conduct a load checking program. The County Hazardous Waste Management Plan (CHWMP) encourages programs which ensure the safe disposal of all hazardous materials. Although the CHWMP does not specifically address load checking programs, the concept is consistent with the intent of the County-wide plan.

Estimate of Costs

The costs vary depending on the sophistication of the program, the frequency of landfill load checking and the amounts and types of wastes diverted through the program. The costs are usually included in landfill operations and environmental monitoring budgets.

Availability of End Uses for Diverted Materials

All materials collected in loadchecking programs are recycled when possible or disposed in a Class I landfill.

Effectiveness of Reducing Volume/Weight of HHW Generated

This option is not very effective in reducing the overall weight of HHW illegally disposed in the trash. When front loader vehicles are used, the force of compaction frequently causes containers holding HHW to leak. The liquids then become absorbed in the surrounding material making loadchecking and removal of this waste virtually impossible. Much of the hazardous waste recovered from loadchecking programs are also illegal disposals from the commercial and industrial sectors. Providing residential education and information is very limited since the violating household cannot be traced.

4.3 Recycling Programs

Over 40 percent of the HHW generated by the unincorporated areas is considered recyclable. Integrating recycling and/or reuse into collection programs will reduce overall disposal costs as well as the amount of newly manufactured hazardous materials needed to create new products. Recycling also includes the purchase of products which contain previously recycled material, such as re-refined oil. Through recycling and reuse, the unincorporated areas can preserve existing resources, reduce the purchase of new products by reusing unwanted products, and reduce the costs of HHW disposal.

4.3.1 INTEGRATING RECYCLING INTO COLLECTION PROGRAMS

Periodic and permanent collection facilities should consider recycling HHW whenever feasible. The two recyclable HHW facilities which are used by the unincorporated areas have been very effective in diverting and reducing the amount of HHW requiring disposal (see section 3.3, Recycling Programs). The periodic collection programs which serviced the unincorporated areas (see section 3.1 Periodic Collection Programs) also recycled latex paint, car batteries, and anti-freeze. Used oil, although not re-refined, was used as an alternative fuel source.

Potential Hazards

Recycling waste oil, paints, and anti-freeze usually involves consolidation of these materials into tanks or drums. This increases the risk of spills, fires, leaks, or explosions when the material is either improperly handled or stored. Proper management of these materials and effective health and safety training programs will usually mitigate these hazards.

Accommodation to Changing Conditions

Incorporating recycling into collection programs are very flexible. In periodic and mobile collection programs, recycling can be accomplished to the extent feasible given existing staffing and time constraints. The remainder of the material unable to be recycled can be properly disposed either through incineration or landfilling. In recyclables only collection programs, however, all materials collected must be recycled.

Institutional Barriers

There are no significant institutional barriers. The Department of Toxic Substances Control (DTSC) no longer requires a hazardous waste permit to hold a "Recycle Only Day" if the collection event is limited to the following HHWs: latex paint, used oil, anti-freeze, car batteries, and household batteries.

Short-Term and Medium-Term Implementation

This option is currently being implemented when possible.

Needs for New Facilities and/or Facilities Expansion

No new facilities are necessary since this option is currently being implemented at the recyclable HHW facilities and is practiced in periodic collection events.

Consistency with Local Policies, Plans, and Ordinances

The County Hazardous Waste Management Plan (CHWMP) encourages source reduction and recycling of HHWs. The CHWMP specifically supports the development of recyclables only collection days and waste exchange programs.

Estimate of Costs

Recycling HHW will reduce the costs of any type of collection program. In periodic programs, consolidation of paint and waste oil may require additional staff. Permanent and mobile collection alternatives evaluated in the previous sections included the cost savings of recycling waste oil, paint, anti-freeze, and car batteries.

Availability of End Uses for Diverted Materials

The following end-uses for diverted materials should be considered when integrating recycling into HHW collection programs:

- Waste oil collected for recycling should be re-refined, whenever possible. Using waste oil in an alternative fuels program should be a lower priority.
- Markets also exist for the recycling of drained waste oil filters. Oil filters need to be drained of all free-flowing oil or crushed to remove the residual oil. DTSC recommends a 24-hour drain period to insure that the filter is empty.
- Oil-based paints can be blended with waste oil and sent to an alternative fuels program.
- Latex paints can be bulked on-site and reprocessed at a paint recycling facility. If this option is chosen, the City may have to make financial arrangements to buy-back the blended paint. Useable paint collected at the site could be used for maintenance and upkeep of city structures or can be donated to non-profit community organizations. Paint exchanges can also be arranged for private parties to select paints they desire.

- Lead acid batteries can be sent by hauler to a battery smelter for lead recovery and remanufacture into new batteries.

- Empty paint and/or aerosol cans may be sent to recycling facilities as long as they are classified as non-hazardous solid wastes.

Effectiveness of Reducing Volume/Weight of HHW Generated

This option is very effective in reducing the overall weight of HHW landfilled. Recycling and reuse prevents the manufacture of more hazardous products by ensuring that wastes generated are properly used.

4.3.2 CURBSIDE WASTE OIL RECYCLING

In a curbside waste oil collection program, residents set their HHWs at the curb on specially designated days throughout the year. Specially equipped trucks staffed by trained workers would then collect oil directly from the curb. Wastes are then bulked on the truck or placed in racks and later transferred to a holding tank at a centralized location. Once sufficient quantities are collected, they are sent off for recycling or disposal. This type of program is typically implemented in conjunction with existing garbage or curbside recycling collection.

Potential Hazards

Waste oil could spill onto the sidewalk or street causing hazards. Wastes set out on the curb are also relatively unprotected and accessible to weather and passing vehicles. Safely bulking the oil within the vehicle is difficult due to the limitations in space and the short length of time allowed per stop in curbside programs.

Accommodation to Changing Conditions

Changes in the following areas may impact curbside waste oil recycling programs:

- Days of pick-up will have to be consistent with garbage and/or recycling collection days in each community. Using other days will cause confusion and low participation in the program.

- Addition of other communities can be accommodated by modifying existing routes or adding new service routes.

Institutional Barriers

The Department of Toxic Substances Control (DTSC) no longer requires a hazardous waste permit for any person who receives used oil from consumers or other used oil generators so long as the following conditions are met:

- No more than 20 gallons of used oil are received at a time from any one generator
- The container(s) are no more than 5 gallons each
- The used oil is transported by the generator

Implementation of this program will depend on the willingness of the existing residential haulers to cooperate and agree to provide modified vehicles to accept the waste. This may require modifications in existing franchises or contracts to compensate the hauler for the pick-up of additional materials.

Short-Term and Medium-Term Implementation

If institutional barriers can be overcome, this option can be implemented during the short-term implementation period.

Needs for New Facilities and/or Facilities Expansion

No new facilities or expansion of existing facilities are necessary.

Consistency with Local Policies, Plans, and Ordinances

The County Hazardous Waste Management Plan (CHWMP), which was adopted by the City, encourages source reduction and recycling of HHWs. The CHWMP specifically supports the development of recyclables only collection days and waste exchange programs.

Estimate of Costs

Costs will vary depending on the vehicle modification required and the willingness of the hauler to collect this material at minimal cost. Currently, the County of Santa Barbara is running a similar program as part of their existing curbside program with no increase in refuse collection or recycling costs.

Availability of End Uses for Diverted Materials

Waste oil collected for recycling should be re-refined, whenever possible. Using waste oil in an alternative fuels program should be a lower priority. Markets also exist for the recycling of drained waste oil filters. Oil filters need to be drained of all free-flowing oil or crushed to remove the residual oil. DTSC recommends a 24-hour drain period to insure that the filter is empty.

Effectiveness of Reducing Volume/Weight of HHW Generated

This option is very effective in reducing the overall weight of waste oil unsafely disposed. Because the convenience of this program will motivate 80% of all residents to participate, more oil will be collected and properly disposed through curbside collection. Curbside collection also provides a mechanism in which informational brochures can be left at each household.

4.4 Public Education and Information Programs

Public education and information programs will be key components of HHW collection programs. The success of selected HHW collection programs will rely upon the active participation of informed residents. Educating residents in recognizing HHWs, knowing hazardous properties of products commonly used, and using alternative management methods which are environmentally sound will modify attitudes and consumer behavior which will curtail the usage of hazardous products. Public education and information can be divided into three distinct focus groups: schools, residences, and government. Programs addressing each of these focus groups will be individually discussed in this section.

4.4.1 SCHOOL PROGRAMS

These programs provide schools with needed curricula to educate students about the impact of hazardous materials on their health and environment. This program will target students of all grade levels and will focus on recognition of hazardous products and responsible management of hazardous wastes. Types of educational methods which can be incorporated into this program include curriculum supplements, environmental education curriculum, display centers, speakers and presentations, peer teaching concepts, educational assistance from the solid waste industry, promotion of environmentally friendly products, and a mobile display vehicle. Many of these programs can be implemented in conjunction with source reduction and recycling educational programs.

Curriculum supplements may include private or public sources of materials. The California Integrated Waste Management Board (CIWMB) distributes pamphlets about HHW which would be appropriate for middle and high school students. The Department of Toxic Substances Control (DTSC) has finalized the following educational products in the Fall of 1991 and has provided these materials at no cost to local governments within California:

- Youth Activity Books which address environmental topics for youth groups such as 4-H, Girls and Boy Scouts

- An interactive computer game which allows students to make decisions regarding disposal options and environmental repercussions of household chemicals

Environmental education curriculum addressing recycling and HHW reduction is also available from many private and public sources. The DTSC has finalized the Environmental Anthology curriculum in the Fall of 1991 and has been distributing these materials directly to school districts in the state. The DTSC also provides (at no cost to the City) on-site training which assists teachers in incorporating this information into daily activities and lesson plans. These training sessions are designed to take no more than 2 hours. This extensive curriculum addresses grades K through 12 and addresses natural resources, solid waste reduction, and hazardous waste management. The Local Government Commission, Inc. has also developed a one week curriculum called "Toxics In My Home? You Bet!". This series is designed for all grades and promotes the use of safer alternatives. The cost for the curriculum is $16.00 per grade level.

Display centers can be used as a centralized resource area and community bulletin board on environmental issues including HHW. This display center can hold a variety of specialized videotapes, books, and teacher's resource materials.

Speakers and presentations for classes and school assemblies will provide greater awareness about HHW management. The DTSC will provide presentations for students ranging from K through 12 grade levels which address chemicals, natural resources, recycling, and reduction of HHW. With this approach, students will be able to interact with the spokesperson and bridge the gap from specific environmental issues to present day application of HHW management.

Peer teaching programs will educate fellow youths through students who will have undergone a training session at the school. The students who are trained will have demonstrated environmental leadership skills and a desire to promote sound environmental practices to their peers.

Educational assistance from the solid waste industry will assist in HHW education. In both the public and private sector, facility operators for landfills, anti-litter stations, intermediate processing centers, and haulers have a vested interest in ensuring that HHWs do not become a hazard for their operations. The students and educator will be able to view on-going operations and understand what these entities do to keep HHW out of their operations.

Promotion of environmentally friendly products in schools will greatly enhance students knowledge of their purchasing habits and need for change. Presentations or supplemental courses about environmentally-wise buying habits can be integrated in environmental, home economics, or civic classes. The presentations/courses would address the full environmental impacts associated with hazardous products.

Mobile display vehicles (MDV) will provide exhibitions on HHW alternatives and other solid waste management issues to different schools. The mobility and versatility of the displays will be the key feature of the program. This vehicle could also be used at general public information and education events as well as during the summer months. Depending on available funding, the MDV could be either a trailer fitted to accept the necessary exhibitions or a carry-all van. Displays may be changed and updated on a yearly basis. Props and attire can also be used enhance the display.

Potential Hazards

No potential hazards are associated with this alternative. Information on toxicity and safe substitutes, however, must be continually updated to avoid presenting incorrect information to residents.

Accommodation to Changing Conditions

The program is flexible and adaptable to changing conditions, new research, and new collection programs in operation.

Institutional Barriers

There are no significant institutional barriers. The County fully supports a well-informed public.

Short-Term and Medium-Term Implementation

School programs will be implemented throughout the short- and medium-terms.

Needs for New Facilities and/or Facilities Expansion

No new facilities are necessary for most options. Existing school facilities may be used to implements the programs. If the MDV is pursued, a trailer will need to be purchased.

Consistency with Local Policies, Plans, and Ordinances

Formal education programs promoting HHW reduction are consistent with current local policies and plans. The County Hazardous Waste Management Plan (CHWMP) supports the initiation of a public education campaign to inform residents about HHW and hazardous materials. The CHWMP suggests various methods to accomplish this task which include coordinating with appropriate educational groups.

Estimate of Costs

Each of the educational methods described will vary in materials costs and staff time. Program costs are estimated as follows:

Curriculum supplements can be obtained free from the respective state agencies. Copying privileges are allowed for some materials.

Environmental education curriculum developed by the DTSC has been distributed state-wide to school districts in mid-August. The DTSC will also provide personnel to train teachers on the content of the curriculum and help incorporate this curriculum into daily lesson plans. The Ventura Regional Sanitation District (VRSD) has paid sponsorship fees of $25,000 for the "Think Earth" curriculum. Teacher workshop development is expected to cost $1,000 for materials, and $600 for staff time. Distribution costs for each of the four modules will be approximately $160 for each school. The Ventura County Supplement will be distributed at the teacher workshop and is expected to cost $750 to publish.

Display centers will cost approximately $700 per unit. This includes all educational materials and a rack to house the material. Total costs to the unincorporated areas will depend on the range of distribution of these units to schools and/or libraries in the County. Costs per units can be shared with neighboring jurisdictions. Minimal staff time by the County will be required to update and maintain the unit.

Speakers and presentations will involve eight to ten hours of staff time to coordinate each event. Speakers from the DTSC can initially make presentations and provide informational materials at no cost to the County. After the program format has been established, staff may continue these presentations using, at most, five hours per presentation.

Peer teaching programs will require staff time to develop, implement, and maintain this programs. Eight hours per week of staff time will be required in the short-term, increasing to approximately fifteen to twenty hours per week to coordinate and support on-going efforts.

Educational assistance from the solid waste industry will require eight to ten hours of staff time to coordinate presentations, tours, and necessary logistical support for each school that will participate in this program. Facility operators and haulers may provide staff time to coordinate presentations at no cost to the County.

Promotion of environmentally friendly products in schools will average five to ten hours per week of staff time in the short-term. During the medium term, presentations and curriculum development and modification, may require 30 hours per week of staff time. Staff for curriculum development can be provided by VRSD through contract. Grants from foundations and public sources may also be used to offset these costs.

The Mobile Display Vehicle (MDV) will require one staff member approximately 20 hours per week through 1993 to 60 hours per week to design, construct, deliver, and coordinate this program. Capital costs for the vehicle and materials will range from $38,000 to $80,000 depending on the degree of mobility required. Yearly operational costs will depend upon the number of different displays developed throughout the year, and the different schools visited within the County.

Availability of End Uses for Diverted Material

Not applicable to this program.

Effectiveness of Reducing Volume/Weight of HHW Generated

This option is very effective in promoting source reduction of HHW. It will educate youths in recognizing hazardous products and help them to make educated decisions which will reduce the generation of HHW in the future. The volume or weight of HHW reduced, however, is not easily quantified in such programs.

4.4.2 RESIDENTIAL EDUCATION PROGRAMS

Residential education programs shall focus on encouraging residents to buy non-hazardous or less hazardous products when available. Residents will also be encouraged to purchase only what is needed, use up what they have, and give unneeded products to others who can use them. Understanding the environmental and financial ramifications of the improper disposal of HHW will help citizens modify their lifestyles and become less dependent upon these materials. Methods which can be incorporated into this program are described in more detail below.

Multi-media outreach such as public service announcements (PSAs), newspaper articles, broadcasts of HHW videos on local public access stations, video loan library through the public library system, and a display outlining safe substitutes and alternatives will increase awareness about household hazardous waste. The following resources may also be used to enhance this program:

- Feature Column. The County may work with the local papers to develop a regular column addressing HHW issues. The column may be structured using a question/answer format or may provide current information on existing collection programs.

- HHW Videos. League of Women Voters has produced two new video projects called "Cleaning Up Toxics At Home" and "Cleaning Up Toxics in Business". These videos are available through the Countywide Recycling Consortium (CRC).

- Interactive Computer Kiosk. The University of Minnesota Telecommunications Development Center has developed an interactive touchscreen computer kiosk which will allow users to access audio and visual information on the dangers of HHW and safe

substitutes which can be used. These kiosk may be permanently displayed in public centers such as the County Government Center, or transported to special events for display throughout the County.

Distribution of informational material before and during collection programs will provide residents with information on identifying hazardous products, properly transporting HHW for recycling or disposal, and reducing the use of hazardous products in the future. Educational materials translated for non-English speaking residents will also be provided. The following state agencies have published brochures which are available to the City at no cost.

- The DTSC has published a brochure titled "A Guide to the Disposal of Hazardous Household Products and the Use of Non-Hazardous Alternative". This brochure provides safe alternatives in an easy to read fold-out format.

- The CIWMB has developed information sheets for the car batteries, oil-based paint, latex paint, used oil, aerosols, and anti-freeze. Each sheet describes the hazards of each waste type and provides information on the management options available. These hand-outs are available in English or Spanish.

- The League of Women Voters provides a comprehensive manual on alternatives to household hazardous materials. This manual is provided free upon request.

Videos and/or displays may also be used at the collection facility to inform residents on safe substitutes.

A HHW speakers bureau will be used by the County to address community organizations and service clubs to raise awareness and answer specific questions that individuals may have regarding HHW. Examples of organizations which may be addressed include homeowners' associations, PTAs, and youth clubs. The DTSC will provide speakers, seminar and conference assistance, and brochures and handouts to the City free of charge.

Utility bill inserts distributed by the hauler will provide instructions to residents on how to properly recycle or dispose of HHW. Inserts may be bi-lingual where appropriate.

Proper disposal of non-recyclable hazardous products which do not have safe alternatives will be encouraged through a public information campaign. This campaign will target such materials as household batteries, pharmaceuticals, smoke alarms (low levels radioactive wastes), and mercury containing products (fluorescent lights, thermometers). The information may be best distributed through utility bill.

A solid waste hotline will provide residents with 24-hour access to information on a variety of solid waste programs including the management of HHW. Hours of operation of permanent facilities, upcoming collection days, and additional information on safe substitutes will be provided through the hotline. The County is developing a county-wide hotline through the CRC.

An Integrated Pest Management (IPM) program will minimize the use of synthetic pesticides and encourage biological, horticultural, physical, and least-toxic chemical control of pests. The County will provide residents with displays and pamphlets which demonstrate alternative methods of pest control. Displays and pamphlets may be placed in local gardening centers or grocery stores for maximum exposure.

A hazard-free community program, modeled after the program established in the City of Kirkland in Washington State, will raise the awareness of a selected community within the County and educate residents on reducing the use of hazardous products. This program will help existing local organizations to take the lead in educating their community in hazardous waste reduction. The program will initially involve residents signing a hazard-free pledge as a show of commitment to the program. The City and the local organization will jointly provide workshops on alternative products and IPM methods, maximize participation in collection programs, conduct residential waste audits, develop youth groups to raise awareness, and work with local retail stores to create consumer incentives to purchase environmentally sound products. This program may branch out into other unincorporated communities within the County depending on the success of the program at the initial site.

Potential Hazards

No potential hazards are associated with this alternative. Information on toxicity and safe substitutes, however, must be continually updated to avoid presenting incorrect information to residents.

Accommodation to Changing Conditions

The program is flexible and adaptable to changing conditions, new research, and new collection programs in operation.

Institutional Barriers

There are no significant institutional barriers. The County fully supports a well-informed public.

Short-Term and Medium-Term Implementation

Residential programs will be implemented throughout the short- and medium-terms.

Needs for New Facilities and/or Facilities Expansion

No new facilities are necessary for residential programs.

Consistency with Local Policies, Plans, and Ordinances

Residential programs promoting HHW reduction are consistent with current local policies and plans. The County Hazardous Waste Management Plan (CHWMP) supports the initiation of a public education campaign to inform residents about HHW and hazardous materials.

Estimate of Costs

Each of the methods described will vary in material costs and staff time. Program costs are outlined below.

Multi-media outreach costs will depend on the amount of free services which may be obtained from the available media sources. Total hours required by staff to implement a multi-media outreach program may range from one to three months of project development and three to five hours per week of program maintenance. Other potential costs are outlined as follows:

- Pre-recorded PSA costs range from $100 to $500 for a 60 second commercial. Professionally produced PSA costs for a 30-second spot may range from $2,000 to over $30,000. Costs can be reduced substantially through the use of in-house resources where possible. Television and radio stations may be willing to provide free PSA air time to the County.

- The local public access channel may provide multiple showings of HHW video programs, while local newspapers may provide advertising for these showings as a public service to the community. Videos are available through the CRC.

- The interactive computer kiosk will cost up to $4500 per unit. This cost includes computer hardware and security housing for the unit. The software is available at no charge if the County provides their own disks for copying.

Distribution of informational material at collection facilities is currently being accomplished through the VRSD at the existing recyclables HHW facility. Distributing the free brochures at these sites may be available at no additional cost. Costs for duplicating the CIWMB brochures will range from five to ten cents per page. Display costs will vary from $200 for a simple laminated banner to $5000 for an interactive computer kiosk. Coordination time for a display may range from 20 hours to three months.

A HHW speakers bureau will require approximately two to ten hours per week for coordinating on-going presentations. County staff may use speakers from the DTSC for general information on HHW or may develop specific presentations addressing different special interest groups within the County. Custom presentations will require ten to fifteen hours per presentation to develop.

Utility bill inserts distributed by the hauler may be reproduced and distributed by the hauler at no cost to the County. The County, however, may have to develop the design of the insert. Each insert design will cost approximately $50 to $100. Staff time required to coordinate this effort will vary from ten to fifteen hours per insert designed.

A public information campaign addressing the proper disposal of non-recyclable hazardous products may also be distributed through the utility bill or through the collection facility. Costs for developing an insert and informational brochure will range from $200 to $400, depending on the amount of artwork required.

A solid waste hotline with an automated system may cost $5000 to $10,000 for initial equipment and installation costs depending on the sophistication of the system.

Integrated Pest Management (IPM) program costs will vary depending on the type and number of displays and brochures developed. Existing brochures on pest and weed control are available through such organizations as the Environmental Health Coalition or the Bio-Integral Resource Center for a nominal fee to obtain a camera-ready copy. Display costs will vary from $100 for a simple wire display rack to $500 for a customized booth. Staff coordination time will be 30 hours per site and four hours per month of continued maintenance at each site.

Hazard-free community program costs will depend on the number of volunteers and in-kind services available to the County. Staff time for developing and coordinating this project for the first year may range from 15 to 30 hours per week. Material costs will depend on the extent of education required for the targeted community.

Availability of End Uses for Diverted Material

Not applicable to this program.

Effectiveness of Reducing Volume/Weight of HHW Generated

This option is very effective in promoting source reduction of HHW. It will educate residents in recognizing hazardous products and help them to purchase or use non-hazardous alternatives whenever feasible. The volume or weight of HHW reduced, however, is not easily quantified in such programs.

4.4.3 GOVERNMENTAL PROGRAMS

Governmental programs shall serve as a model to all residents that shifting from hazardous to non-hazardous products will work. The County shall also focus on supporting legislation which supports HHW programs. Projects which can be incorporated into this program are described in more detail below.

Legislative support and lobbying will promote the reduction of hazardous products and facilitates the collection of HHW from residents. Local organizations and the public could provide additional momentum in support from awareness campaigns.

A permanent HHW Display at the Government Center will provide the public with basic information on HHW management and reduction. This display can also highlight all HHW programs on-going within the County and provide an update on goals achieved and milestones accomplished. Displays may be rotated on a quarterly basis and continuously updated.

Use of non-hazardous products whenever feasible will provide the County with the integrity of practicing what is preached. This program will include identifying all hazardous household products used by the County, developing performance specifications for tasks in which these

products are used, and testing non-hazardous alternatives to identify which ones meet the specifications. In cases where a non-toxic alternative meets the specifications but is more expensive than its hazardous counterpart, the County may provide a price preference that favors procurement of the non-hazardous product.

Potential Hazards

No potential hazards are associated with this alternative. When providing recommendations for safe substitutes, the County must ensure that these substitutes do not create other hazards in the workplace.

Accommodation to Changing Conditions

The program is flexible and adaptable to changing conditions, new research, and new collection programs in operation.

Institutional Barriers

There are no significant institutional barriers when supporting legislation and displays. Product substitution, however, may receive some resistance since it may affect the way in which individuals perform their duties.

Short-Term and Medium-Term Implementation

Governmental programs will be implemented throughout the short- and medium-terms.

Needs for New Facilities and/or Facilities Expansion

No new facilities are necessary for residential programs.

Consistency with Local Policies, Plans, and Ordinances

Governmental programs promoting HHW reduction are consistent with current local policies and plans. The County Hazardous Waste Management Plan (CHWMP), which was adopted by the unincorporated areas, specifically calls for the support of labeling legislation requiring manufacturers to indicate proper methods of disposal on product labels.

Estimate of Costs

Each of the governmental projects will vary in material costs and staff time. Costs are outlined below.

Legislative support and lobbying of bills affecting HHW programs will require staff to monitor and inform the City council on the impacts of the bill to the overall HHW program. Monitoring and response times will range from 8 to 40 hours per month depending on the degree of legislative activities.

A permanent HHW Display at the Government Center will range in cost depending on the types of materials used and the availability of in-house expertise which can be used to design the display. Approximately 80 hours of staff time will be needed to initially develop and coordinate this display. Once established, the display will require 10 to 20 hours each quarter to update and maintain the display.

Use of non-hazardous products will require six months of staff time to research, develop specifications, and test all proposed safe substitutes. Testing times may be shortened by using existing test data available from other agencies. Materials and procurement costs will have to be determined once the initial research is complete.

Availability of End Uses for Diverted Material

Not applicable to this program.

Effectiveness of Reducing Volume/Weight of HHW Generated

This option is very effective in promoting source reduction of HHW. The volume or weight of HHW reduced, however, is not easily quantified in such programs.

HOUSEHOLD HAZARDOUS WASTE ELEMENT
Unincorporated Ventura County

Chapter 5.0

Selection of Program Alternatives

5.0 SELECTION OF HHW PROGRAMS

The regulations require that all jurisdictions identify and describe the alternatives selected for their HHW program. Selected programs may include existing programs, expansion of existing programs, and new alternatives which will be implemented to meet the goals and objectives of the element. The program description must include the following:

- Reason why the alternatives were selected
- Recycling and/or reuse programs selected
- Multi-jurisdictional programs selected
- Public education and information programs selected
- Availability of end-uses for diverted HHW
- Handling and disposal methods
- Types and quantities of HHW anticipated to be collected, recycled or disposed

5.1 Identification of Selected Collection Programs

Residents must have access to collection programs which will provide them with environmentally sound alternatives to managing HHW. Table 5-1 summarizes all collection alternatives evaluated and their associated costs. Also noted on Table 5-1 are special circumstances or assumptions which must be taken into consideration before final selection of a program is made. Details on selected collection programs and the rationale for selection are provided in the following sections for the short- and medium-term.

5.1.1 SHORT-TERM IMPLEMENTATION PERIOD

The following collection programs were selected for the short-term planning period:

- ***Recyclables only permanent collection facility.*** As demonstrated in Table 5-1, recyclable collection facilities are the least cost solution to handling a large percentage

of the HHW (40 to 70 percent). These types of facilities will be implemented wherever feasible on a County-wide basis.

In the Western County, participation at the existing VRSD facilities will continue. The Santa Clara Recycling Center will provide service to the West County unincorporated communities while the Ojai Anti-Litter Station will continue to serve the greater Ojai Valley. The Toland Road Landfill is also available to the Santa Clara River Valley residents. The County will concentrate staff efforts on increasing the publicity of these facilities to increase participation from less than 1 percent to 12 percent in the short-term period.

In the Eastern County, participation of unincorporated residents at existing and proposed recyclable facilities in Simi Valley and Thousand Oaks will be negotiated between those cities and the County. Since most of the East County unincorporated communities are isolated pockets situated adjacent to cities, use of existing and proposed City facilities will assist both the County and the City in reducing capital construction and operational costs.

In the City of Thousand Oaks, proposed capital costs of their recyclables only facility is $20,000 with an estimated cost per participating household of $2. Currently, the unincorporated population adjacent to Thousand Oaks, including Oak Park, consists of approximately 72% of the total unincorporated residences in the East County Unincorporated region. If 10% participation is targeted for the Thousand Oaks recyclables facility, approximately 600 households would participate, making the total unincorporated share of operating costs equal to $1,200 per year. A memorandum of understanding between the County and the City will need to be established which delineates equitable program operational cost allocation and waste tracking mechanisms for the participating unincorporated communities.

In the City of Simi Valley, proposed capital costs of their recyclables only facility is $40,000 with an estimated cost per participating household of $3. The unincorporated population adjacent to Simi Valley consists of approximately 18% of the total population in the East County Unincorporated region. If 10% participation is targeted for the Simi Valley facility, approximately 150 households would participate, equating to $450 per year of operating costs attributed to the unincorporated sector. A memorandum of understanding will also have to be developed between the County and the City of Simi Valley delineating operational cost allocation and tracking systems for the unincorporated regions.

For unincorporated communities which are geographically out of the range of current existing and proposed facilities, the County will investigate the integration of recyclable

HHW collection facilities with proposed solid waste recycling drop-off centers. Consolidation of capital costs, siting, and staffing for these facilities will reduce overall costs.

Table 5-1
Unincorporated Ventura County
Collection Alternatives Summary

Alternative	Estimated Participation (%)	Total Yearly Operations Cost	Cost per Participating Household	Capital Costs	Notes
West County (Inland), Ojai Valley					
Periodic Collection	12%	$169,849	$84 + staff time	$0	Collection day once a year. Includes all HHW.
	12%	$145,557	$72 + staff time	$0	Collection day once a year. Includes non-recyclable HHW only.
Permanent Facility	20%	$267,932	$79	$183,900	Siting issues a problem. Long implementation period (at least 5 years). Includes all HHW.
Mobile Collection	20%	$158,932	$47	$182,200	Service 3 times a year. Includes all HHW.
	20%	$158,147	$47	$182,200	Service 3 times a year. Includes non-recyclable only.
Curbside Collection	75%	$931,711	$74	$583,900	Dependent on cooperation of the hauler and recycling center operators. Includes all HHW.
Recyclables Facility	20%	$10,400	$3	0	Currently on-going VRSD operation. Includes recyclable HHW only.

Table 5-1
Unincorporated Ventura County
Collection Alternatives Summary

Alternative	Estimated Participation (%)	Total Yearly Operations Cost	Cost per Participating Household	Capital Costs	Notes
East County Unincorporated Areas					
Periodic Collection	12%	$89,111	$88 + staff time	$0	Collection day once a year. Includes all HHW.
	12%	$77,011	$76 + staff time	$0	Collection day once a year. Includes non-recyclable HHW only.
Permanent Facility	20%	$134,690	$80	$123,900	Siting issues a problem. Long implementation period (at least 5 years). Includes all HHW.
Mobile Collection	20%	$83,970	$50	$109,700	Service 3 times a year. Includes all HHW.
	20%	$83,579	$50	$109,700	Service 3 times a year. Includes non-recyclable only.
Curbside Collection	75%	$595,806	$95	$323,900	Dependent on cooperation of the hauler and recycling center operators. Includes all HHW.
Recyclables Facility	20%	$5,040	$3	$6,000	Includes recyclable HHW only.

- ***Periodic collection programs.*** Continue participation in annual and biennial one-day collections for non-recyclables until a more accessible collection method is developed. These programs also provide a relatively low cost option with no capital expenditures. The residents of the unincorporated areas, however, have indicated that a more dependable and convenient program than periodic collections should be investigated for the proper disposal of non-recyclable HHW in the community.

In the Western County, continue participating in the existing VRSD periodic collection events. Collection events for Oxnard, Ventura, and Camarillo will be scheduled on an annual basis. Events at the Ojai Valley and the Santa Clara River Valley are scheduled biennially by the VRSD. SWMD will insure maximum participation at these events by the unincorporated areas surrounding all of these areas.

In the Eastern County, work closely with the Cities of Moorpark, Simi Valley, and Thousand Oaks to coordinate biennial periodic collection events. Because the residents in the East County Unincorporated regions have indicated that a more dependable and convenient program than periodic collections should be investigated for the proper disposal of non-recyclable HHW in the community, mobile collection will be investigated as a pilot project in this region. If mobile collection is determined to be cost effective, this program will replace periodic collection programs in this region.

For unincorporated communites which are geographically separated from major cities, periodic collection events will not be feasible since these populations are sparse therefore making this type of event uneconomical.

- ***Mobile collection program.*** Develop a sub-regional mobile collection facility to work in conjunction with recyclables only permanent collection facility. Mobile collection appears to be a viable option since yearly operational costs are comparable to the periodic collection option. The benefit in the mobile collection alternative is that for the same operational costs, more households are provided service, therefore higher participation rates are anticipated than the periodic option. This is reflected in the decreased cost per household. The only additional expense of this program is the initial capital costs required to purchase equipment. This cost burden can be alleviated by conducting this program on a multi-jurisdictional basis, thereby allowing all jurisdictions to share initial capital costs. Unlike the permanent collection option, the mobile unit can be located in multiple jurisdictions thus increasing the possibilities of significantly reducing overall costs.

  Table 5-1 reflects costs incurred if the County implemented mobile collection on its own. If a subregional East County approach to mobile collection is taken, costs (especially capital costs) can be shared by the participating jurisdictions, thereby reducing or eliminating initial capital costs for this project. For the short term, this program will be further investigated by developing a pilot project in FY 1992/1993 which will service the East County Cities and surrounding unincorporated communities. Cities which have expressed much interest include: Moorpark, Simi Valley, and Thousand Oaks. In order to eliminate capital expenditures, the mobile collection option may be contracted out using a full-service turn-key approach. Each jurisdiction will host the mobile collection facility twice, each time providing the community with up to six full days of service.

All participating jurisdictions will collectively develop a memorandum of understanding to delineate all responsibilities, division of program costs, and liability issues. The mobile collection facility will also allow jurisdictions to share costs when providing public information materials such as multi-lingual brochures on safe substitutes and proper disposal practices. Since capital costs will be eliminated and a full-service approach used, total operational costs, assuming a pilot 6% participation rate, are estimated at $36,500 per year for the County.

5.1.2 MEDIUM-TERM IMPLEMENTATION PERIOD

The following collection programs were selected for the medium-term planning period:

- ***Recyclables only permanent collection facility.*** Continue operation of the existing facilities because of its demonstrated cost effectiveness.

- ***Mobile collection program.*** If the pilot project proves mobile collection as a feasible alternative, move towards expanding this program to service other unincorporated areas such as the North Coast and the West County Coastal areas. The County can also expand this program to include the unincorporated areas of the Ojai Valley and the Santa Clara River Valley on the years that periodic collections are not provided. The County will also work with VRSD to reassess the feasibility of the mobile collection facility on a County-wide basis.

- ***Periodic collection.*** In the West County, periodic collection will continue through the medium term period. In the East County, if mobile collection proves to be more cost effective, periodic collection will be phased out.

- ***Limited curbside collection program for the Ojai Valley.*** Although curbside pick-up of HHW provides residents with the most convenient service, this option is not feasible because it is highly dependent on the cooperation of the haulers and their willingness to assume liabilities associated with acting as registered hazardous waste haulers. This option also requires a solid waste facility operator to allocate space for temporary storage of the HHW collected. Curbside collection is also not feasible because the revenue required to support such a program is not available to the County. Through surveys in the Ojai Valley, residents expressed a need for at least a very limited curbside or "door-to-door" collection program servicing disabled and/or elderly households. This program will be investigated and possibly developed in conjunction with the mobile collection program.

- ***Reevaluate the need for a permanent HHW facility.*** Although a permanent facility would provide convenience to the community, the lengthy permitting process and the potential opposition of nearby residents to any facility associated with hazardous waste may make this alternative unfeasible. Also the yearly operational cost of a permanent facility is very high since staff must be on-site throughout the year. Opportunities to lessen both operational and capital costs by sharing costs with multiple jurisdictions are limited since a central location may prove to be geographically removed from many residents. If, however, the pilot project for mobile collection is not successful in reducing overall costs, the County will reevaluate the use of permanent facilities on a sub-regional basis.

5.2 Identification of Selected Load-Checking Programs

Because load checking programs prevent hazardous wastes from being improperly landfilled, all existing programs should be continued throughout the short- and medium-term implementation periods. All identified facilities which currently do not have a load-checking program will investigate the feasibility of developing programs in the short term.

5.3 Identification of Selected Recycling and Reuse Programs

Integrating recycling and reuse into collection programs whenever feasible will be beneficial because it eliminates the high cost of disposal and reduces the amount of new hazardous products which need to be purchased. Recycling and reuse also reinforces the hierarchy of waste management which must be followed.

5.3.1 SHORT-TERM IMPLEMENTATION PERIOD

The following recycling and reuse programs were selected for the short-term planning period:

- ***Integrating recycling into collection programs.*** Continue current practice of recycling used oil, paint, antifreeze, and car batteries collected at all existing and future programs and facilities.

- ***Investigate curbside waste oil program in the Ojai Valley.*** Investigate the feasibility of implementing a curbside waste oil program through the hauler. The residential survey indicates that improper disposal of waste oil is a significant problem in the Ojai Valley. If increased publicity of the existing recyclables HHW facility does not significantly increase participation, curbside pick-up of waste oil may provide the residents with a more convenient method of disposing this oil. In order to implement this option, the County will need to coordinate with the hauler and determine if this service could be included as part of the existing curbside program.

5.3.2 MEDIUM-TERM IMPLEMENTATION PERIOD

The following recycling and reuse programs were selected for the medium-term planning period:

- ***Integrating recycling into collection programs.*** Continue practice of recycling used oil, paint, antifreeze, and car batteries collected at all existing and future programs and facilities.

- ***Curbside waste oil program in the Ojai Valley.*** Implement a curbside waste oil program through the hauler if feasible and necessary.

5.4 Identification of Selected Public Education and Informtion Programs

All public education and information programs addressing schools, residents, and the County government will be selected and implemented throughout the short- and medium-term implementation periods. These programs will provide the following needed changes which will ensure the overall success of the HHW program:

- Inform and educate the public in all aspects of HHW management and instill public support for these programs.

- Promote local and regional educational programs and encourage community support at all levels.

- Provide students and parents with information on hazardous wastes which will influence future reduction and proper management of HHW.

- Educate the public in the environmental and financial ramifications of improperly disposing HHW.

- Focus upon common individual waste management practices and develop new habits or behavioral changes that will produce the results necessary to eliminate improper disposal of household hazardous wastes.

5.4.1 SHORT-TERM IMPLEMENTATION PERIOD

The following selected ***school programs*** will be implemented during the short-term implementation period:

- curriculum supplements
- environmental education curriculum
- display centers
- educational assistance
- promotion of environmentally friendly products
- peer teaching
- mobile display vehicle

The following selected ***residential programs*** will be implemented during the short-term period:

- multi-media outreach
- distribution of informational materials
- HHW speakers bureau
- utility bill inserts by the hauler
- conduct non-toxic alternative products and services campaigns
- County-wide solid waste hotline

The following selected ***governmental programs*** will be implemented during the short-term period:

- legislative support and lobbying
- permanent HHW display at the Government Center

5.4.2 MEDIUM-TERM IMPLEMENTATION PERIOD

All ***school programs*** identified for the short-term implementation period will continue into the medium-term implementation period.

The following selected ***residential programs*** will be implemented during the medium-term period:

- public information campaign addressing non-recyclable HHW
- integrated pest management (IPM) program
- hazard-free model community program

The following selected ***governmental programs*** will be implemented during the medium-term period:

- use of non-hazardous products within the County government

5.5 Identification of Multijurisdictional HHW Programs

The County of Ventura is considering a multi-jurisdictional cooperative approach to many of its identified programs because it will provide substantial economic benefits. The County will work cooperatively on programs via the County-Wide Recycling Consortium (CRC) or in cooperation with the East County Cities. The following section identifies all short- and medium-term multijurisdictional programs proposed by the County.

5.5.1 SHORT-TERM IMPLEMENTATION PERIOD

The following selected ***collection programs*** will be implemented on a multijurisdictional basis during the short-term period:

- Recyclables facility - For the West County unincorporated communities, this program is currently being implemented by the VRSD. For the East County unincorporated

communities, the County will work with the Cities of Simi Valley and Thousand Oaks in expanding their proposed facilities to include the unincorporated communities near their jurisdictions.

- Periodic collection - For the West County unincorporated communities, this program is currently being implemented by the VRSD. For the East County unincorporated communities, the County will work with the Cities of Moorpark, Simi Valley, and Thousand Oaks in coordinating future events.

- Mobile collection facility - This program will be implemented as a joint effort between the County and the East County Cities of Moorpark, Simi Valley, and Thousand Oaks via the Countywide Recycling Consortium.

The following selected ***load checking programs*** will be implemented on a multi-jurisdictional basis during the short-term period:

- Existing load checking program will continue to be implemented by the operator of each respective facility.

- Proposed load checking programs will be investigated by the appropriate operators of each facility.

The following selected ***public education and information programs*** will be implemented on a multijurisdictional basis during the short-term period:

- School programs - All of these programs will be conducted in cooperation with the Regional Educational Committee and the school districts.

- Solid waste hotline (residential program) - This service will be coordinated through the Countywide Recycling Consortium.

5.5.2 MEDIUM-TERM IMPLEMENTATION PERIOD

The following selected ***collection programs*** will be implemented on a multi-jurisdictional basis during the medium-term period:

- Recyclables facility - This program will continue being implemented as a joint effort between the jurisdictions specified in the short-term implementation period.

- Mobile collection facility - This program will be implemented as a joint effort between the jurisdictions specified in the short-term implementation period.

The following selected ***load checking programs*** will be implemented on a multi-jurisdictional basis during the medium-term period:

- Continued load checking program at all public and private facilities. These programs will be coordinated by the appropriate operator of each facility.

The following selected ***public education and information programs*** will be implemented on a multi-jurisdictional basis during the medium-term period:

- Continued school programs - All of these programs will be conducted in cooperation with the Regional Educational Committee and the school districts.

- Solid waste hotline (residential education program) - This service will continue to be coordinated through the CRC.

5.6 Availability of End Uses for Diverted Materials

The following end-uses for all diverted materials from all collection and recycling programs shall be considered:

- Waste oil collected for recycling should be re-refined, whenever possible. Using waste oil in an alternative fuels program should be a lower priority.

- Markets also exist for the recycling of drained waste oil filters. Oil filters need to be drained of all free-flowing oil or crushed to remove the residual oil. DHS recommends a 24-hour drain period to insure that the filter is empty.

- Oil-based paints can be blended with waste oil and sent to an alternative fuels program.

- Lead acid batteries can be sent by hauler to a battery smelter for lead recovery and remanufacture into new batteries.

- Latex paints can be bulked on-site and reprocessed at a paint recycling facility. If this option is chosen, the County may have to make financial arrangements to buy-back the

blended paint. Useable paint collected at the site could be used for maintenance and upkeep of city structures or can be donated to non-profit community organizations. Paint exchanges can also be arranged for private parties to select paints they desire.

- Empty paint and/or aerosol cans may be sent to recycling facilities as long as they are classified as non-hazardous solid wastes.

5.7 Handling and Disposal Methods

All collection and recycling programs shall follow proper handling and disposal methods defined by state and federal regulations. All existing and future collection programs are staffed by personnel with the appropriate background and training required to identify and handle hazardous materials. All HHW designated as hazardous wastes will be properly handled, packed, labelled, manifested, stored, and disposed.

5.8 Facilities Needed for Implementation

The mobile collection program will require the acquisition of a storage unit, staff mobile offices, equipment van, vehicle, and portable sanitary facilities. The storage unit must be an enclosed self-contained structure. It must provide adequate secondary containment and separation of incompatible materials within the storage structure. The storage structure must also be well marked with the appropriate signs and placards. Safety equipment accessible within or outside of the structure must include eye-washes, emergency showers, and fire extinguishers. Prefabricated structures which incorporate all of the aforementioned requirements for proper hazardous waste storage are commercially available. These structures must also be transportable from site to site.

5.9 Types and Quantities of HHW to be Collected from All Programs

Table 5-2 summarizes the anticipated annual collection of HHW for the County. Curbside recycling of waste oil was not included since this measure will not be implemented unless recyclables and mobile collection fail to meet anticipated participation objectives.

Table 5-2
Unincorporated Ventura County
Types and Yearly Quantities of HHW Collected from all Programs[1]

Collection Program	Participation Rate	HHW Material Types					
		Motor Oil (gals/yr)	Latex Paint (gals/yr)	Oil Paint/ Flammables (gals/yr)	Antifreeze (gals/yr)	Lead Acid Batteries (lbs/yr)	Lab Packs[2] (gals/yr)
Recyclables Collection	20%	7836.	3387.	0	note 4	note 4	0
Periodic Collection[3]	12%	3789.	1638.	3398.	note 4	note 4	3789.
Mobile Collection	20%	7836.	3387.	5859.	note 4	note 4	6533.
Waste Management Method:		Rerefine/ Fuel	Recycle	Fuel	Recycle	Recycle	Land Disposal

[1]Maximum anticipated collection from each individual program if implemented separately.
[2]Lab packs include pesticides, corrosives, miscellaneous flammables, aerosols, oxidizers.
[3]Quantities collected every other year.
[4]Difficult to determine with existing data.

HOUSEHOLD HAZARDOUS WASTE ELEMENT
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Chapter 6.0

Implementation of Collection/Load Checking/Recycling Programs

6.0 IMPLEMENTATION OF COLLECTION/LOAD CHECKING/RECYCLING PROGRAMS

This section identifies the agencies responsible for implementation, the tasks required to implement collection, load checking, and recycling programs, and the implementation schedule, and costs associated with each program. Implementation of public education and information programs is addressed in Chapter 8.0.

6.1 Agencies Responsible for Implementation

The County Solid Waste Management Department (SWMD) will be responsible for implementation of the recommended programs. The SWMD may consider contracting with private or public agencies to implement specific projects. The County may also get assistance through established citizen groups and special districts in the unincorporated areas.

6.2 Cost, Revenues, and Revenue Sources

Implementation costs for the short term planning period are estimated to include the funding of two full time staff positions. During the medium-term planning period, this may increase to three full time staff positions, depending on the types of programs selected for implementation.

The SWMD will use the following resources to provide revenues for education and public information program implementation. All funds will be deposited into a single account for developing and implementing HHW programs.

- Solid Waste Fund
- Grants From Private or Government Sources
- Foundation or Sponsorship Funds
- Solid Waste Management/Refuse Collection - Contracts
- Waste Management Fees
- Grant funds available through the California Integrated Waste Management Board
- VRSD Member-Contracted Services or Reciprocal Agreements

6.3 Implementation Schedule

Table 6-1 summarizes implementation dates for the selected collection, load checking, and recycling programs.

Table 6-1
Implementation Schedule for Selected HHW Programs
1990-2000

Implementation Tasks	Start	Finish	Responsible Entities
Collection Programs			
Recyclables Collection Facility (West County) continue existing program	ongoing	ongoing	VRSD
Recyclables Collection Facility (East County) Determine funding source Develop memorandum of understanding with partner cities Develop equitable funding arrangement Determine staffing requirements Carry out publicity campaign Monitoring and Evaluation	 1/92 3/92 3/92 9/92 11/92 11/92	 3/92 9/92 9/92 11/92 ongoing ongoing	SWMD, City of Simi Valley, City of Thousand Oaks
Periodic Collection (West County) Continue participation in existing programs	Ongoing	Ongoing	VRSD
Periodic Collection (East County) Determine need for program. Determine funding. Select Site(s) and date. Receive Board Approval. Issue RFP for contractor. Obtain required variances and permits. Carry out publicity campaign. Hold event. Submit a summary. Continue program biennially.	 12/93 1/93 3/93 4/93 5/92 6/92 8/92 9/92 9/92 Ongoing	 1/93 3/93 4/93 5/93 7/92 8/92 9/92 9/92 10/92 Ongoing	SWMD

Table 6-1
Implementation Schedule for Selected HHW Programs
1990-2000

Implementation Tasks	Start	Finish	Responsible Entities
Mobile Collection (pilot program)			
Determine funding	10/91	12/91	SWMD; Cities of
Identify site(s) for collection	10/91	1/92	Simi Valley,
Finalize schedule and logistics for collection	11/91	2/92	Moorpark,
Develop MOU	11/91	2/92	Thousand Oaks
Issue RFP for contractor	10/91	2/92	
Obtain required variances and permits	10/91	3/92	
Design facility	2/92	5/92	
Construct facility	5/92	7/92	
Develop promotional materials and distribute	10/91	8/92	
Begin operation	8/92	7/93	
Monitor, evaluate and adjust	7/92	8/93	
Continue to medium term if cost effective	8/93	Ongoing	
Reevaluate the need for permanent HHW facility			
Determine effectiveness of existing programs	9/95	10/95	SWMD
Evaluate potential site	10/95	1/96	
Determine feasibility	1/96	3/96	
Develop report	3/96	4/96	
Load Checking Programs			
Load Checking Programs	ongoing	ongoing	VRSD, Private
Continue existing program.			Operators
Load Checking at Ojai Anti-Litter Station			
Evaluate need for program.	12/91	3/92	VRSD
Develop load checking procedures (if neccessary).	3/92	6/92	
Determine staffing requirements.	6/92	9/92	
Implement program.	9/92	ongoing	
Load Checking at Toland Road Landfill			
Evaluate need for program.	12/91	3/92	VRSD
Develop load checking procedures (if neccessary).	3/92	6/92	
Determine staffing requirements.	6/92	9/92	
Implement program.	9/92	ongoing	
Recycling Reuse Programs			
Integrate Recycling/Reuse In All Collection Programs	ongoing	ongoing	SWMD, VRSD
Continue for all collection programs.			

Table 6-1
Implementation Schedule for Selected HHW Programs
1990-2000

Implementation Tasks	Start	Finish	Responsible Entities
Curbside Waste Oil Program			
Evaluate need for program.	1/94	6/94	SWMD
Negotiate contract with hauler.	9/94	12/94	
Determine storage requirementsfor waste oil.	1/95	3/95	
Determine truck/container requirements.	1/95	3/95	
Determine routing of trucks.	3/95	6/95	
Develop promotional materials and distribute.	6/95	9/95	
Distribute containers/begin collection.	9/95	10/95	
Monitor, evaluate and adjust.	10/95	ongoing	

HOUSEHOLD HAZARDOUS WASTE ELEMENT
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Chapter 7.0

Monitoring and Evaluation of Collection/Load Checking/Recycling Programs

7.0 MONITORING AND EVALUATION OF COLLECTION/LOAD CHECKING/RECYCLING PROGRAMS

7.1 Selected Monitoring Methods

To quantify the success of the selected programs, the County will use the following methods of monitoring the various programs:

- Use documented disposal from the waste generation study, current documented diversion of HHW, and current estimates of improper disposal to set the baseline total generation of HHW for the County unincorporated areas.

- Continue source sampling of all residences to extrapolate the total amount of HHW being disposed of in the landfills.

- Continue random household surveys to note improvements in HHW disposal, and monitor changes in the purchase of hazardous products.

- Document the quantities of HHW diverted through each collection/recycling programs and the number of participants. CIWMB Form 303 should be used to document these quantities.

- Document the quantities of HHW diverted through load checking programs. CIWMB Form 303 should be used to document these quantities.

- Require local facilities which accept used oil (i.e., gas stations, lube facilities) to track the number of Do-It-Yourselfers which use their facility for waste oil disposal. Have the local facility document the area of residence and the quantity of waste oil brought in by the resident.

7.2 Evaluation Criteria for Program Effectiveness

The following criteria will be used to evaluate the effectiveness of each program:

- Did the program achieve the objectives set forth in this element?
- Did the per capita rates of HHW disposal decrease? How much did it decrease?
- Did the program achieve the anticipated participation and diversion rates?
- Did the program recycle or reuse all recyclable HHW collected?
- Was the program implemented in a timely and efficient manner?
- Is the program cost-effective? Did it adhere to its budget?
- Were there adequate markets for the recyclable/reusable HHW collected?
- Were there any other unforeseen problems?

7.3 Roles and Responsibilities

The Ventura County Solid Waste Management Department will be responsible for the monitoring, evaluating and reporting on the success of implementation.

7.4 Funding Requirements and Revenue Sources

The County will be responsible for monitoring, evaluating, and reporting the success of the collection programs. The estimated costs for the County to perform monitoring, evaluation and reporting will be approximately 5 percent of one full-time staff person. The County may consider working with agencies such as the VRSD, the Countywide Recycling Consortium, and the Regional Educational Committee to provide these services for multi-jurisdictional programs. Staff duties will include:

- Recordkeeping
- Monitoring participation at the various facilities

- Using established criteria to track effectiveness
- Developing quarterly summaries of reuse and recycling attributed towards each program

The County will use the following resources to provide revenues for collection program implementation. All funds will be deposited into a single account for developing and implementing all HHW programs.

- Solid Waste Fund
- Grants From Private or Government Sources
- Foundation or Sponsorship Funds
- Solid Waste Management/Refuse Collection - Contracts
- Waste Management Fees
- Grant funds through California Integrated Waste Management Board
- VRSD Member Contracted Services or Reciprocal Agreements

7.5 Contingency Measures for Non-Attainment of Objectives

If there is a shortfall in attaining the short- and medium-term goals and objectives, it will be necessary to examine the reasonableness of the objectives and determine what program areas need to be modified in order to realize the objectives. Quarterly program monitoring reports will assist in early detection of problems.

If anticipated ***participation levels are not attained*** by the collection programs, the County will consider implementing the following measures:

- Increase the level of publicity and overall public education and information.
- Extend the hours of operation of the collection facilities.

If the ***collection program*** is delayed due to unforeseen problems, such as zoning issues or lack of sufficient funding, the County may consider implementing the following measures:

- Revise the implementation schedule and modify overall objectives.
- Add programs which will enable the County to meet specified goals.
- Consider joint implementation of programs with other jurisdictions to decrease costs.

If all these contingency measures fail to enable the County to meet its specified goals, the County may want to consider passing an ordinance which imposes fines upon homeowners who improperly dispose of HHW. The ordinance may be enforced through random garbage sorts throughout the County.

HOUSEHOLD HAZARDOUS WASTE ELEMENT
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Chapter 8.0

Implementation of Public Education and Information Programs

8.0 IMPLEMENTATION OF PUBLIC EDUCATION AND INFORMATION PROGRAMS

This section identifies the following for implementing public education and information programs: agencies responsible; tasks required to implement programs; costs for program implementation; and schedule for implementation.

8.1 Agencies Responsible for Implementation

Initially the County will be responsible for implementation of the recommended programs. There is, however, the opportunity to contract the implementation out to private or public entities. The County may also seek assistance through citizen groups.

8.2 Cost, Revenues, and Revenue Sources

Implementation staffing for the short-term planning period is estimated to be 50 percent of one full-time staff person. During the medium-term planning period this will increase to 75 percent of one full-time staff person if all programs are implemented. Implementation tasks may be contracted out to private or public entities.

The County will use the following resources to provide revenues for education and public information program implementation. All funds will be deposited into a single account for developing and implementing HHW programs.

- Solid Waste Fund
- Grants From Private or Government Sources
- Foundation or Sponsorship Funds
- Solid Waste Management/Refuse Collection - Contracts
- Waste Management Fees
- Grant funds available through the California Integrated Waste Management Board

- VRSD Member Contracted Services or Reciprocal Agreement

8.3 Implementation Schedule for Short- and Medium-Term

Table 8-1 summarizes implementation dates for the selected public education and information programs.

Table 8-1
Implementation Schedule for Selected Education Programs
1990-2000

Implementation Tasks	Start Quarter	Finish Quarter	Responsible Entities
Schools			
Curriculum Supplements			
Designate responsible staff person.	1st/92	1st/92	SWMD
Contact organizations and place orders.	1st/92	ongoing	
Distribution of materials.	2nd/92	ongoing	
Continuation of program into the medium term.	1st/96	ongoing	
Display Centers			
Design requirements for prototype center.	1st/92	1st/92	SWMD, Regional
Development, materials purchase and construction of display.	1st/92	2nd/92	Education Committee
Presentations and delivery to selected locations (including City Hall, fairs, community events).	2nd/92	2000	
Maintenance, updating, and replacement of material.	2nd/92	ongoing	
Continuance and expansion of program into medium-term; Solicit outside sponsorship and funding.	1st/96	ongoing	
Speakers and Presentations			
Scheduling and coordination with school officials for selected schools, events, presentations, and tours.	1st/92	ongoing	SWMD, VRSD, local schools
School assemblies/classroom presentations.	1st/92	ongoing	
Continuation with any program modifications, repeat sessions, expansion to accommodate schools.	1st/96	ongoing	
Environmental Education Curriculum			
Distribution of K-3 units	3rd/91	ongoing	Regional Education
Optional teacher workshops	3rd/91	ongoing	Committee
Distribution of 4-6 units	1st/92	ongoing	
Peer Teaching			
Regional Education Committee to develop concepts and formulate implementation schedule with local schools.	3rd/91	ongoing	SWMD, Regional Education Committee, local schools
Training and support services.	1st/93	ongoing	
Transition to individual school direction.	1st/96	ongoing	

Table 8-1
Implementation Schedule for Selected Education Programs
1990-2000

Implementation Tasks	Start Quarter	Finish Quarter	Responsible Entities
Educational Assistance and Cooperation From Facilities Operators and Hauling Companies.			
Establish agreements or arrangements with agency, company or facility operator.	1st/92	ongoing	SWMD, local haulers, local schools
Notify local schools of logistical support and tours.	1st/92	ongoing	
Maintain perfunctory coordinative or referral role.	3rd/92	ongoing	
Review and evaluate participation and continued County involvement.	1st/96	ongoing	
Continue program with any necessary adjustments or modifications.	3rd/96	ongoing	
Promotion of Environmentally Friendly Products.			
Assignment of staff to project.	1st/92	1st/92	SWMD, Regional Education Committee
Development of initial goals.	1st/92	4th/92	
Development of curriculum and presentation materials.	1st/93	ongoing	
Review by school administrations.	4th/94	ongoing	
Inception of program.	1st/95	ongoing	
Mobile Display Vehicle (MDV)			
Assign staff to project.	1st/92	1st/92	Countywide multiagency effort (SWMD, Regional Education Committee)
Determine funding sources, sponsorship, and available budget.	1st/92	2nd/92	
Determine MDV presentation mode.	2nd/92	3rd/92	
RFP for display vehicle consultants/manufacturers.	3rd/92	1st/93	
Select consultant.	1st/93	2nd/93	
Staff/consultant meetings regarding vehicle design and display hardware construction.	2nd/93	2nd/94	
Final staff suggestions and recommendations.	1st/94	3rd/95	
Delivery of vehicle and coordinated reception; First year exhibitions.	4th/95	3rd/96	
Continuation of program; Modifications where necessary; Evaluations of presentation and receptions.	4th/96	1st/97	
Consideration of program expansion and additional sponsorship.	1st/97	2000	
Residential Programs			
Multimedia Outreach			
Monthly newspaper column.	1st/92	ongoing	SWMD
County newsletter article three times per year.	1st/92	ongoing	
General news releases/brochure distribution on HHW events. PSA development (radio & cable TV).	4th/91	ongoing	
HHW video broadcasts.	1st/92	ongoing	
Interactive computer kiosk.	1st/92	2nd/92	
Continuance of program into medium-term.	1st/96	2000	
Non-toxic Alternatives Products and Services Campaign			
Design requirements for display area.	2/93	3/93	SWMD
Development, materials purchase and construction of display.	3/93	4/93	
Presentations and delivery to selected locations (including City Hall, fairs, community events).	5/93	6/93	
Maintenance, updating, and replacement of material.	6/93	ongoing	

Table 8-1
Implementation Schedule for Selected Education Programs
1990-2000

Implementation Tasks	Start Quarter	Finish Quarter	Responsible Entities
Hazard Free Community Program			
General meeting with Citizens Advisory Committee to develop strategy.	1st/95	1st/95	
Identify relevant organizations and groups for additional volunteers.	1st/95	1st/95	SWMD
Select initial community.	1st/95	2nd/95	
Organize the signing of the hazard free pledge.	2nd/95	4th/95	
Develop and hold workshops on HHW reduction.	3rd/95	ongoing	
Develop youth groups.	3rd/95	ongoing	
Work with retail stores to create consumer incentives.	4th/95	ongoing	
Maintain and coordinate communication with volunteers; conduct regular meetings; distribute informational material on forthcoming events.	1st/96	2000	
Utility Bill Inserts by Hauler			
Coordinate with haulers for educational and promotional opportunities;	1st/92	ongoing	SWMD, local haulers
Continue information inserts into bills and city mailings.	1st/92	2000	
Solid Waste Hotline			
Negotiate with service provider.	1st/92	1st/92	SWMD, CRC
Inception of program.	1st/92	ongoing	
Continuance of program and upgrading when necessary.	ongoing	2000	
Distribution of HHW Informational Materials			
Research, brochure(s) development.	3rd/91	ongoing	SWMD
Distribution.	2nd/92	ongoing	
HHW Speakers Bureau			
Establish contacts with available speakers.	4th/91	1st/92	SWMD,
Develop organizations to target.	1st/92	ongoing	
Prepare speech and handouts.	2nd/92	ongoing	
Modification, update of program.	1st/92	ongoing	
Public Information Campaign Addressing Non-recyclable HHW			
Research information for safe disposal.	3rd/94	3rd/95	SWMD
Prepare brochures and information packets.	4th/95	ongoing	
Distribute.	4th/95	ongoing	
Update periodically.	4th/96	ongoing	
Integrated Pest Management (IPM) Program			
Research information for safe disposal.	3rd/95	3rd/96	SWMD
Prepare brochures and information packets.	4th/96	ongoing	
Distribute.	4th/96	ongoing	
Update periodically.	4th/97	ongoing	

Table 8-1
Implementation Schedule for Selected Education Programs
1990-2000

Implementation Tasks	Start Quarter	Finish Quarter	Responsible Entities
County Government			
Permanent HHW Display at Government Center			
Select location for the display.	4th/91	1st/92	SWMD
Research information to be presented on display.	2nd/92	2nd/92	
Design and develop display.	3rd/92	3rd/92	
Quarterly update of display.	3rd/92	ongoing	
Use of Non-Hazardous Products Within County Government			
Identify household hazardous products used by the County.	3rd/95	1st/96	SWMD, CRC
Develop performance specifications.	1st/96	3rd/96	
Product testing.	3rd/96	4th/96	
Institute price preference policy.	4th/96	1st/97	
Designate department representatives.	1st/97	2nd/97	
Develop educational program for departments.	2nd/97	3rd/97	
Monitor program through purchasing.	3rd/97	ongoing	
Legislative Support and Lobbying			
Ongoing activities; Public awareness campaigns.	4th/91	ongoing	SWMD, Waste
Continuation of program.	1995	2000	Commission

8.4 Targeted Audiences

All public education and information programs for HHW are targeted for the residential sector. Outreach programs will primarily use schools, direct contact at home, and the governmental structure. Schools are significant because information on proper disposal and safe substitutes will be incorporated into other environmental education programs that address source reduction, recycling, and composting.

The degree of success in HHW programs, is measured by the level of participation or the change in behavioral patterns and is directly proportional to the quantity and quality of information disseminated and education given to the public. Clearly defined goals, monitoring and accurate measurements are needed to adequately evaluate the results of promoting diversion programs.

HOUSEHOLD HAZARDOUS WASTE ELEMENT
Unincorporated Ventura County

Chapter 9.0

Monitoring and Evaluation of Public Education and Information Programs

9.0 MONITORING AND EVALUATION OF PUBLIC EDUCATION AND INFORMATION PROGRAMS

This section describes the methods in which the County of Ventura will monitor the effectiveness of public education and information programs addressing HHW. This section establishes evaluative criteria for determining program effectiveness; indicates responsible entities for continued program monitoring and evaluation; delineates funding requirements and sources to implement all monitoring and evaluation measures; and establishes contingency measures needed to ensure attainment of overall goals and objectives.

9.1 Selected Monitoring Methods

To effectively quantify the success of the education and public information programs, monitoring programs will have to be developed for each of the identified program areas.

School programs will require the cooperation of the faculty and administrators to successfully monitor programs. Effectiveness of curriculum supplements will be tracked through continued feedback from local schools, and close monitoring of individual school requests for supplements. Environmental education curriculum will be monitored through a pre-test and post-test designed to measure the environmental literacy of students. Effectiveness of a display center and/or mobile display vehicle will be monitored through sign-up sheets for the various resources available through these programs, and supplemented by surveys which indicate popularity and usefulness among students and faculty. All speakers, presentations, and industry tours will be monitored through an evaluation form filled out by the class instructor which assesses the quality of the presentation, applicability, and assimilation by students of the concepts discussed. Peer teaching programs will use surveys to provide feedback from the schools involved with implementation of the program.

Residential education programs will be monitored through continued yearly random household surveys to note improvements in HHW disposal, and monitor changes in the purchase of hazardous products. These surveys will test the level of knowledge in the area of proper HHW management and will measure the awareness of existing programs provided by the County.

Governmental programs such as legislative support will be monitored through the passage of legislation supporting HHW programs. Public displays will be monitored through suggestion/comment boxes at the display site. Purchase of non-hazardous products by the County will be tracked through quarterly monitoring of the procurement system.

9.2 Evaluation Criteria for Program Effectiveness

The following criteria will be used to evaluate the overall effectiveness of each program:

- Did the program achieve the objectives set forth in this element?
- Were residential generators in the unincorporated County aware of the household hazardous waste programs available to them?
- Has the County or responsible agencies executed tasks required in public education or information programs as outlined?
- Was the program implemented in a timely and efficient manner?
- Is the program cost-effective? Did it adhere to its budget?
- Were there any other unforeseen problems?
- Have the monitoring tasks been performed at the regular intervals mentioned?

The relative effectiveness between various residential programs will be measured through surveys based on random contacts made to residents in the unincorporated County. These surveys will address awareness and participation in existing programs. The responses will be evaluated using the rating system developed in Table 9-1. Low awareness and low participation would indicate ineffective public education and information programs. Conversely, inverse combinations of awareness and participation may point to other program needs such as convenience, motivation or better information guides.

9.3 Roles and Responsibilities

The County Solid Waste Management Department will be responsible for the monitoring, evaluating and reporting on the success of public education and information programs.

Table 9-1
Rating System Used to Evaluate Program Effectiveness

Program Evaluation Area	Range of Positive Responses	Program Assessment
Awareness	0% to 25%	Ineffective
	26% to 49%	Somewhat Effective
	50% to 75%	Effective
	76% to 100%	Very Effective
Participation	0% to 25%	Ineffective
	26% to 49%	Somewhat Effective
	50% to 75%	Effective
	76% to 100%	Very Effective

9.4 Funding Requirements and Revenue Sources

The estimated time commitment for monitoring public education and information programs is less than five percent of one full-time staff person per year. The County may consider using other resources such as the Countywide Recycling Consortium and the Regional Educational Committee to provide these services for multijurisdictional programs. Staff duties will include:

- Record keeping
- Conducting quarterly surveys to monitor progress
- Reviewing data and determining individual and cumulative program effectiveness using established criteria
- Developing quarterly summaries of events and developing an annual report summarizing the progress toward the stated objectives

The County will use the following resources to provide revenues for education and public information program implementation. All funds will be deposited into a single account for developing and implementing HHW programs.

- Solid Waste Fund
- Grants From Private or Government Sources
- Foundation or Sponsorship Funds
- Solid Waste Management/Refuse Collection - Contracts
- Waste Management Fees
- Grant funds available through the California Integrated Waste Management Board
- VRSD Member Contracted Services or Reciprocal Agreements

9.5 Monitoring and Reporting Schedule

All continuing public education and information programs will be monitored on a quarterly basis. All special events and presentations will be evaluated immediately following the event.

The County will provide a quarterly report summarizing all continuing and special event programs which will have been implemented. This report will also include an assessment of progress made towards achieving public education and information goals and objectives.

9.6 Contingency Measures for Non-Attainment of Objectives

If there is a shortfall in attaining the short- and medium-term goals and objectives, it will be necessary to examine the reasonableness of the objectives, and then determine what program areas need to be modified in order to realize the goals. Quarterly program monitoring reports will assist in pinpointing problems early.

If the anticipated ***levels of public awareness are not attained***, the County will consider implementing the following:

- Improvise, modify, or increase the level of effort of the program to offset the deficiency identified through the monitoring program.
- Review the effectiveness of selected public education techniques and programs.

- Re-evaluate, modify and expand appropriate public education program efforts.

If the ***required tasks are not executed*** by responsible departments or delegated agencies, the County will consider implementing the following:

- Re-evaluate staff adequacy.
- Review task assignments and concurrent responsibilities for staff.
- Revise job and task descriptions accordingly for employees and agencies involved in public education.
- Reconsider personnel or agencies involved in the education programs.

If ***tasks are not implemented according to schedule***, the County will consider the following actions:

- Re-evaluate public education staff adequacy.
- Revise or modify current job and task descriptions of employees involved in public education.
- Assess, revise and expand schedules to reflect changing needs identified by the monitoring program.

HOUSEHOLD HAZARDOUS WASTE ELEMENT
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Chapter 10.0

Overall HHW Program Funding

10.0 OVERALL HHW PROGRAM FUNDING

Existing law and regulations require that each jurisdiction identify the costs and sources of revenue for implementing its Household Hazardous Waste Element. The purpose of the funding chapter is to demonstrate that the County has sufficient funding available for ongoing program planning and development, and for the implementation of selected HHW programs. This chapter must provide cost estimates for programs scheduled for implementation in the short-term (1991-1995) planning period. Revenue sources sufficient to support these programs must be identified, along with sources of contingency funding.

This section addresses four major areas: (1) the current mechanisms used to fund solid waste programs for the County, (2) estimated costs for the HHW programs scheduled for implementation in the short-term planning period, (3) additional staff resources required for program administration and implementation, (4) revenue sources to support these programs, and (5) contingency funding sources.

10.1 Current Funding Mechanisms

Solid waste programs in the unincorporated area of Ventura County are administered through the Solid Waste Management Department. The Department currently administers refuse collection and recycling contracts with private companies; regulates landfill operations through operational contracts; develops local and countywide planning documents; conducts CEQA reviews for solid waste impacts; and implements waste reduction, recycling, and HHW programs.

HHW services for unincorporated County residents are provided by SWMD and are financed through residential and commercial collection agreements. VRSD also imposes an HHW surcharge at the Bailard Landfill to provide periodic HHW collection for member jurisdictions, including the unincorporated areas which use the landfill.

10.2 Estimated Program Cost

Table 10-1 summarizes the estimated costs for program administration and implementation over the short-term planning period. Implementation of the selected programs over this period will require an annual expenditure ranging from $4,700 to $246,000 annually. Annual O&M costs include collection, transportation, operation and maintenance, services, and miscellaneous materials costs. Staff costs include program planning and administration hours.

Table 10-1
Household Hazardous Waste Element Implementation Costs (1991-1995)

Programs	Cap. Cost	1991 Costs		1992 Costs		1993 Costs		1994 Costs		1995 Costs	
		O&M	Staff	O&M	Staff	O&M	Staff	O&M	Staff	O&M	Staff
Collection/Recycling/Load Checking		(1% participation)		(6% participation)		(8% participation)		(10% participation)		(12% participation)	
Periodic Collection											
West County/Ojai											
Valley/SCRV	$0	$600[1]	$500	$3,800[2]	$500	$97,000[3]	$500	$63,100[2]	$500	$146,000[3]	$500
East County	$0	$0	$0	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Recyclable HHW Facility											
West County/Ojai											
Valley/SCRV	$0	$500	$500	$3,100	$500	$4,200	$500	$5,200	$500	$6,200	$500
East County	(5)	$0	$0	$1,000	$1,000	$1,400	$1,000	$1,700	$1,000	$2,000	$1,000
Mobile Collection Pilot Program East County	$0	$0	$500	$36,500	$12,500	$48,700	$12,500	$60,800	$12,500	$73,000	$12,500
Load Checking Program	$0	no expense to County since landfills are operated by special districts or private entities.									
TOTAL		**$1,100**	**$1,500**	**$44,400**	**$14,500**	**$151,300**	**$14,500**	**$130,800**	**$14,500**	**$227,200**	**$14,500**
Public Information and Education											
School Programs	$0	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]
Residential Programs	$0	$800	$1,250	$2,800	$4,200	$1,300	$1,800	$1,400	$2,100	$1,500	$2,300
Governmental Programs	$0	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]	SRRE[6]
TOTAL		**$800**	**$1,250**	**$2,800**	**$4,200**	**$1,300**	**$1,800**	**$1,400**	**$2,100**	**$1,500**	**$2,300**
TOTAL FUNDING REQUIRED:		**$1,900**	**$2,750**	**$47,200**	**$18,700**	**$152,600**	**$16,300**	**$132,200**	**$16,600**	**$228,700**	**$16,800**

Table 10-1
Household Hazardous Waste Element Implementation Costs (1991-1995)

Programs	Cap. Cost	1991 Costs		1992 Costs		1993 Costs		1994 Costs		1995 Costs	
		O&M	Staff	O&M	Staff	O&M	Staff	O&M	Staff	O&M	Staff
FUNDING SOURCES											
Waste Management Fee		$800	$2,750	$40,300	$18,700	$51,400	$16,300	$63,900	$16,600	$76,500	$16,800
VRSD HHW Fee at Bailard		$1,100	$0	$6,900	$0	$101,200	$0	$68,300	$0	$152,200	$0
TOTAL FUNDING SOURCES:		**$1,900**	**$2,750**	**$47,200**	**$18,700**	**$152,600**	**$16,300**	**$132,200**	**$16,600**	**$228,700**	**$16,800**
ANNUAL PROGRAM COST:			**$4,650**		**$65,900**		**$168,900**		**$148,800**		**$245,500**

[1]Collection Day in Ojai Valley and Santa Clara River Valley only.
[2]Collection Day in West County only.
[3]Collection Day in all three areas.
[4]Periodic Collection in the East County will not be pursued if mobile collection is cost effective.
[5]Capital Costs allocation will require future negotiation with applicable cities.
[6]Costs are already included in the SRRE Public Information and Education Component.

10.3 Additional Staff Resources

The County will need one-half of a staff person devoted solely to HHW program administration, coordination, and monitoring in the short term. The County is currently hiring three additional staff people to implement programs selected in the Source Reduction and Recycling Element and the HHWE.

10.4 Revenue Sources for Selected Programs

The County will use a combination of the current established funding mechanisms to provide revenues for HHW program implementation. To the extent feasible, the County will rely on the VRSD to use funds collected from the HHW surcharge at the Bailard Landfill to provide HHW collection events for the Western County unincorporated areas. This source of funding, however, is highly dependent on the number of collection events scheduled for the year and the amount of funds available after each scheduled event. For the Eastern County unincorporated areas, the County will rely on funding programs through the following sources:

- Solid Waste Fund
- Grants From Private or Government Sources
- Foundation or Sponsorship Funds
- Solid Waste Management/Refuse Collection - Contracts
- Waste Management Fees
- VRSD Member Contracted Services or Reciprocal Agreement
- Grant funds available through the CIWMB

The Household Hazardous Waste Element anticipates that subregional programs for the collection of HHW will be pursued jointly by the cities of Thousand Oaks, Moorpark, Simi Valley, and the County of Ventura. The County will work with the appropriate jurisdictions to investigate the feasibility of developing an equitable funding mechanism for HHW programs through the development of a memorandum of understanding (MOU). The actual cost of these

facilities for the County will depend upon future program siting decisions, operational hours of the facility, financing agreements, and the determination of fair-share contributions by local jurisdictions.

10.5 Contingency Funding Sources

Other funding mechanisms that could be explored for contingency funding for the County include:

- Regional Program Funding. Certain programs, such as education and public information, may be more relevant and cost-effective if implemented on a county wide or regional basis. With the concurrence of the Ventura County Waste Commission, a tipping fee surcharge could be placed on all County disposal facilities to fund selected interjurisdictional programs for joint element implementation.

- Development Mitigation Fees. Large residential or commercial developments which intensify use create potentially significant project and cumulative impacts on the capacity of existing solid waste facilities and associated programs. Impacts which cannot be reduced to a less than significant level through available source reduction and recycling measures may be mitigated by the imposition of developer fees to fund Household Hazardous Waste Element implementation. Revenues collected from mitigation or offset fees would be deposited in a separate fund or account, and the use of such monies restricted to HHW education, reduction, recycling, and collection programs in the appropriate area of benefit.

- State Subventions. Recent amendments to AB 939 required the California Integrated Waste Management Board to develop model legislation which provides for the assessment of fees which reflect the true cost of disposal on manufactured products of specific content. Advanced disposal fee legislation may provide for the return of monies directly to local jurisdictions to finance recycling planning, implementation, and public education.

Table 10-2
Funding Alternatives for Facility Construction

Funding Mechanism	Examples
Public Financing Vehicles	
Tax Based Financing	• Special Assessment Bonds • General Obligation Bonds • Tax-Exempt Municipal Bonds • Sales Tax
Revenue Based Financing	• Revenue Bonds • User Fees and Surcharges
Grants	• Water/Waste Disposal Systems for Rural Communities • Community Development Block Grants (CDBG) • CDBG/Small Cities Programs • Solid Waste Disposal Research
Other Financing Options	• Capital Outlay • Certificates of Participation • Lease Revenue Bonds • Municipal Lease-Purchase Contracts • Mello-Roos Community Facility Districts • Joint Powers Authority • Nonprofit Public Corporation • Multi-agency Cooperatives
Private Financing Vehicles	
Term Loans	• Term Loans
Bonds	• Mortgage Bonds • Debentures • Subordinated Debentures
Preferred and/or Common Stock	
Leasing	• Sale and Leaseback • Operating Leases • Capital Leases
Partnerships	
Public-Private Partnerships	
Privately Owned and Operated Facilities	• Private Activity Bonds (PABs) • Letters of Credit
Publicly Owned, Privately Operated Facilities	• All Public Financing Vehicles • Letters of Credit
Profit Sharing	