

FINAL

HOUSEHOLD HAZARDOUS WASTE ELEMENT

**CITY OF PLACERVILLE AND WEST SLOPE
UNINCORPORATED AREA OF EL DORADO COUNTY
CALIFORNIA**

Originally prepared by:

**CH2M HILL
3840 Rosin Court, Suite 110
Sacramento, CA 95834**

Reformatted and Edited by:

**HDR Engineering, Inc.
5175 Hillsdale Circle
El Dorado Hills, CA 95762-5700**

**Resource Management International
3100 Zinfandel Drive, Suite 600
Sacramento, CA 95670**

March 1993



TABLE OF CONTENTS

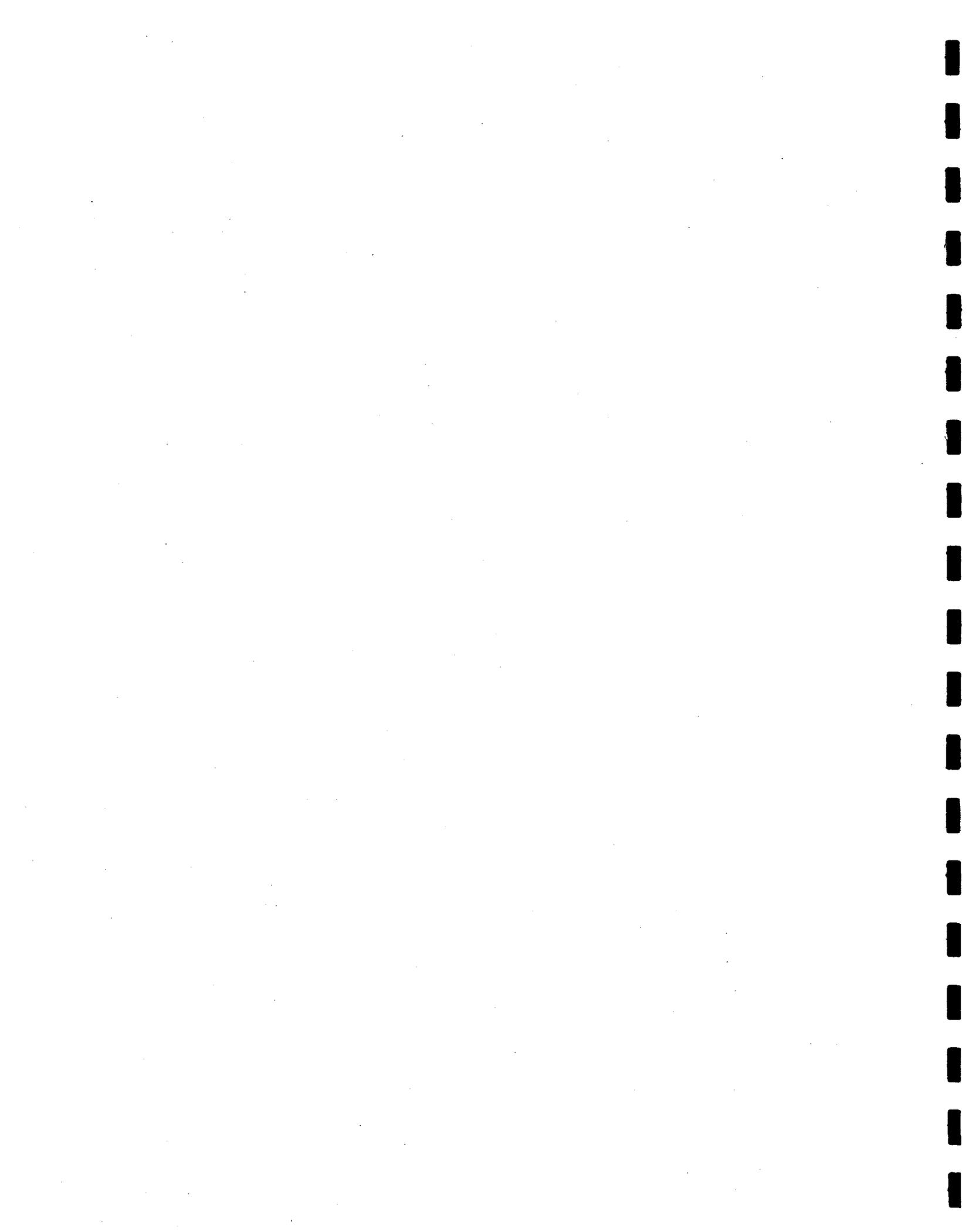


TABLE OF CONTENTS

<u>CHAPTER</u>	<u>TITLE</u>	<u>PAGE</u>
ES	EXECUTIVE SUMMARY	
	Introduction	ES-1
	Periodic Collection Program	ES-2
	Waste Acceptance Control Program	ES-3
	HHW Recycling/Waste Exchange Program	ES-3
	Permanent HHW Program	ES-3
	Education and Information Program	ES-4
1	INTRODUCTION	
	1.0 Definition of Hazardous Waste	1-1
	1.1 State and Local Information	1-2
2	OBJECTIVES	
	2.0 Introduction	2-1
3	EXISTING CONDITIONS	
	3.0 Introduction	3-1
	3.1 Battery and Waste Oil Drop-Off Sites	3-1
	3.2 One-Day Collection Events	3-2
	3.3 Waste Acceptance Control Program	3-2
	3.4 Public Awareness	3-2
	3.5 Illegal Disposal	3-3
4	EVALUATION OF ALTERNATIVES	
	4.0 Introduction	4-1
	4.1 Alternative - Periodic Collection Program	4-3
	4.1.1 Waste Diversion Effectiveness	4-3
	4.1.2 Program Frequency	4-4
	4.1.3 Program Convenience	4-4
	4.1.4 Program Efficiency	4-4
	4.1.5 Facilities Needed for a Periodic Collection Program	4-5
	4.1.6 Short-and Medium-Term Implementation Facility	4-5
	4.1.7 Financing	4-5
	4.1.8 Waste Disposal Rates	4-6
	4.1.9 Short-Term Implementation Cost	4-6

Table of Contents (Cont.)

<u>CHAPTER</u>	<u>TITLE</u>	<u>PAGE</u>
4	EVALUATION OF ALTERNATIVES	
	4.1.10 Consistency with Local Policies and Conditions	4-7
	4.1.11 Technical, Economic, and Social Flexibility	4-7
	4.1.12 Hazards Associated with Periodic Collection Days	4-8
	4.1.13 Institutional Barriers	4-9
4.2	Alternative - Permanent Collection Program	4-10
	4.2.1 Waste Diversion Effectiveness	4-10
	4.2.2 Facilities Needed for a Permanent Collection Facility and Program	4-11
	4.2.3 Short- and Medium-Term Implementation Facility	4-11
	4.2.4 Community Need	4-11
	4.2.5 Financing	4-12
	4.2.6 Waste Disposal Rates	4-12
	4.2.7 Short-Term Implementation Costs	4-12
	4.2.8 Consistency with Local Policies and Conditions	4-13
	4.2.9 Technical, Economic, and Social Flexibility	4-13
	4.2.10 Hazards Associated with Mobile Collection Facilities	4-14
	4.2.11 Institutional Barriers	4-15
4.3	Alternative - Mobile Collection Program	
	4.3.1 Waste Diversion Effectiveness	4-16
	4.3.2 Facilities Needed for Mobile Collection Program	4-17
	4.3.3 Short - and Medium-Term Implementation Feasibility	4-17
	4.3.4 Financing	4-17
	4.3.5 Waste Disposal Rates	4-18
	4.3.6 Short-Term Implementation Costs	4-18

Table of Contents (Cont.)

<u>CHAPTER</u>	<u>TITLE</u>	<u>PAGE</u>
4	EVALUATION OF ALTERNATIVES	
	4.3.7 Consistency with Local Policies and Conditions	4-18
	4.3.8 Technical, Economic, and Social Flexibility	4-18
	4.3.9 Hazards Associated with Curbside Collection Programs	4-19
	4.3.10 Institutional Barriers	4-20
	4.3.11 Location	4-21
	4.3.12 Safety	4-21
	4.3.13 Transportation	4-21
4.4	Alternative - Door-To-Door/Curbside Service	
	4.4.1 Waste Diversion Effectiveness	4-22
	4.4.2 Facilities Needed for Curbside Collection	4-22
	4.4.3 Short- and Medium-Term Implementation Feasibility	4-23
	4.4.4 Community Need	4-23
	4.4.5 Financing	4-23
	4.4.6 Waste Disposal Rates	4-23
	4.4.7 Short-Term Implementation Costs	4-24
	4.4.8 Consistency with Local Policies and Conditions	4-24
	4.4.9 Technical, Economic, and Social Flexibility	4-24
	4.4.10 Hazards Associated with Curbside Collection Facilities	4-24
	4.4.11 Institutional Barriers	4-25
	4.4.12 Waste Ownership	4-25
	4.4.13 Waste Definitions/Collection Requirements	4-26
4.5	Alternative - Waste Acceptance Control Program	
	4.5.1 Waste Diversion Effectiveness	4-26
	4.5.2 Facilities Needed for Load Checking Program	4-26

Table of Contents (Cont.)

<u>CHAPTER</u>	<u>TITLE</u>	<u>PAGE</u>
4	EVALUATION OF ALTERNATIVES	
	4.5.3 Short- and Medium-Term Implementation	
	Feasibility	4-26
	4.5.4 Community Need	4-27
	4.5.5 Financing	4-27
	4.5.6 Waste Disposal Rates	4-27
	4.5.7 Short-Term Implementation Costs	4-27
	4.5.8 Consistency with Local Policies	
	and Conditions	4-28
	4.5.9 Technical, Economic, and	
	Social Flexibility	4-28
	4.5.10 Hazards Associated with Waste	
	Acceptance Control Program	4-28
	4.5.11 Institutional Barriers	4-28
4.6	Alternative - Recycling/Waste Exchange	
	4.6.1 Waste Diversion Effectiveness	4-29
	4.6.2 Facilities Needed for Waste	
	Recycling/Exchange	4-29
	4.6.3 Short- and Medium-Term Implementation	
	Feasibility	4-29
	4.6.4 Financing	4-29
	4.6.5 Short-Term Implementation Costs	4-29
	4.6.6 Consistency with Local Policies	
	and Conditions	4-29
	4.6.7 Technical, Economic, and	
	Social Flexibility	4-29
	4.6.8 Hazards Associated with Recycling/	
	Waste Exchange	4-30
	4.6.9 Institutional Barriers	4-30
4.7	Alternative - Public Education and Information	
	4.7.1 Waste Diversion Effectiveness	4-31
	4.7.2 Facilities Needed for an Information/	
	Education Program	4-31
	4.7.3 Consistency with Local Policies	
	and Conditions	4-32

Table of Contents (Cont.)

<u>CHAPTER</u>	<u>TITLE</u>	<u>PAGE</u>
4	EVALUATION OF ALTERNATIVES	
	4.7.4 Short - and Medium-Term Implementation Feasibility	4-32
	4.7.5 Financing	4-32
	4.7.6 Waste Disposal Rates	4-32
	4.7.7 Short-Term Implementation Costs	4-33
	4.7.8 Technical, Economic, and Social Flexibility	4-33
	4.7.9 Hazards Associated with Information/ Education Programs	4-34
	4.7.10 Institutional Barriers	4-34
5	PROGRAM SELECTION	
	5.0 Introduction	5-1
	5.1 Periodic Collection Program	5-1
	5.2 Waste Acceptance Control Program	5-2
	5.3 Recycling/Waste Exchange Program	5-2
	5.4 Permanent HHW Program	5-3
	5.5 Waste Exchange Program	5-3
	5.5.1 End-Users for Wastes Diverted	5-5
	5.5.2 Proposed Methods for Handling and Disposal	5-5
6	PROGRAM IMPLEMENTATION	
	6.0 Introduction	6-1
	6.1 Recommended Implementing Agency	6-1
7	EDUCATION AND PUBLIC INFORMATION	
	7.0 Introduction	7-1
	7.1 Objectives	7-1
	7.2 Existing Program Conditions	7-1
	7.2.1 S.E.E. Project	7-1
	7.2.2 Earth Day Informational Exhibits	7-2
	7.2.3 Public Outreach	7-2
	7.3 Preferred Alternatives	7-2
	7.3.1 Compile a List of Newsletters/Events	7-2

Table of Contents (Cont.)

<u>CHAPTER</u>	<u>TITLE</u>	<u>PAGE</u>
7	EDUCATION AND PUBLIC INFORMATION	
	7.3.2 Develop a Waste Management School Curriculum	7-3
	7.3.3 Public Information Center	7-3
	7.3.4 Develop HHW Documentary Video	7-3
	7.4 Program Implementation	7-3
8	MONITORING AND EVALUATION	
	8.0 Introduction	8-1
	8.1 Monitoring Program	8-1
	8.1.1 Monitoring Criteria	8-1
	8.1.2 Management and Administration	8-2
	8.1.3 Education/Information Program	8-2
	8.1.4 Periodic Collection Program	8-2
	8.1.5 Monitoring Methods	8-3
	8.1.6 Funding	8-4
	8.1.7 Recommended Monitoring Agency	8-5
	8.1.8 Contingency Measures	8-5
	8.1.9 Annual Report	8-5
9	FUNDING	
	9.0 Introduction	9-1
10	REFERENCES	

APPENDICES

Appendix A. Common Household Hazardous Wastes

Appendix B. CIWMB-303 for CY 1990

Appendix C. HHW Collection Event Announcement

Appendix D. Notice to Residents of Western El Dorado County

Appendix E. Memoranda of Understanding

LIST OF TABLES

<u>TABLE NO.</u>	<u>TITLE</u>	<u>PAGE</u>
2-1	Selected Objectives for Short-Term Planning Period	2-1
2-2	Selected Objectives for Medium-Term Planning Period	2-2
3-1	Existing HHW Reduction	3-1
4-1	Alternatives for Potential HHW Programs	4-2
4-2	Calendar Year Operating Costs for Permanent HHW Facilities	4-13
4-3	Agencies to be Consulted in the Development of a HHW Facility	4-15
6-1	Implementation Schedule for HHW Programs Short-Term Planning Period	6-2
6-2	Implementation Schedule for HHW Programs Medium-Term Planning Period	6-3
7-1	Implementation Schedule for HHW Education and Public Information Programs	7-4
8-1	Implementation Schedule for Monitoring and Evaluation Programs	8-4
9-1	Estimated Annual HHW Program Costs 1990-1995	9-2
9-2	Estimated Annual HHW Program Costs 1996-2000	9-3

EXECUTIVE SUMMARY



EXECUTIVE SUMMARY

INTRODUCTION

The California Integrated Waste Management Act of 1989 (Assembly Bill 939) was passed in September 1989. This legislation mandated a 25 percent reduction in the solid waste stream going to landfills and transformation facilities by the year 1995 and a 50 percent reduction by the year 2000. These reductions are to be made through source reduction, recycling, and composting activities.

Initially, California Assembly Bill 939, enacted in January, 1990, directed cities and counties to include a Household Hazardous Waste Component as part of their Source Reduction and Recycling Element. Assembly Bill 2707, recognizing the significance of household hazardous waste management, was enacted in January, 1991, requiring cities and counties to prepare Household Hazardous Waste Elements (HHWEs) which will be included in the Countywide Integrated Waste Management Plans.

Within the West Slope of El Dorado County are one incorporated city, Placerville, and several unincorporated communities. Because of the sparse population, small size, and small quantities of waste generated, a separate HHWE has been prepared.

Household Hazardous Waste (HHW) as defined by the California Integrated Waste Management Board are "those wastes resulting from products purchased by the general public for household use which, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may pose a substantial known or potential hazard to human health of the environment when treated, disposed, or otherwise managed." Examples of household products which are categorized as household hazardous waste when no longer

considered useful are household cleaners, automotive products, home maintenance and improvement products, lawn and garden products.

The goal for the City of Placerville and the West Slope unincorporated area of El Dorado County is to safely and properly manage HHW. Diversion from local municipal waste streams and prevention of environmental degradation are the proposed methods to accomplish this goal, as well as reduction in the amount of HHW generated.

Alternative programs were reviewed in light of the unique requirements of the City of Placerville and the West Slope unincorporated area of El Dorado County. The programs selected for development from this alternative review will work interactively and in some cases sequentially with each other. Certain current programs will be expanded; others will be developed from current programs.

Programs recommended include:

PERIODIC COLLECTION PROGRAM

The one-day periodic community-wide collection events, held two times a year (one spring and one fall date), were selected to be continued and expanded.

In response to requests from the public and based on the waste generation study of commercial HHW quantities, the collection program will expand in fiscal year 1991-92 to include very small quantity generators of hazardous waste. No additional or expanded facilities will be necessary to implement this program. The specific methodology will continue to be a drop-off program allowing participants drive-through service, with workers from a hazardous waste management firm handling, transporting and disposing of the collected HHW in compliance with federal, state and local regulations.

WASTE ACCEPTANCE CONTROL PROGRAM

Established guidelines for the inspection of waste loads entering the solid waste facilities will be determined. A random load monitoring schedule will be developed and conducted by trained workers to check incoming loads for hazardous waste. Appropriate management of any prohibited waste will be implemented.

HHW RECYCLING/WASTE EXCHANGE PROGRAM

The current periodic drop-off program will continue to collect reclaimables for recycling to the extent possible, such as waste oil, paints and lead-acid batteries. The expansion of the periodic collection events to receive small business generated hazardous waste will also reduce the disposal of commercial HHW.

PERMANENT HHW PROGRAM

A fixed HHW collection center is proposed for construction during the medium-term planning period. It is proposed to be located at the proposed materials recovery facility (discussed in Chapter 4-Recycling Component of the El Dorado County Source Reduction and Recycling Element). This permanent facility would operate throughout the year at regular hours for ongoing disposal of HHW.

WASTE EXCHANGE PROGRAM

In coordination with the permanent HHW facility, a program would be developed making available for reuse by the public, safe and acceptable household hazardous materials. Such an exchange program reduces the quantity of HHW disposed and could potentially reduce the unnecessary purchases of materials that would be disposed of in the future.

EDUCATION AND INFORMATION PROGRAM

A program to promote public awareness and provide information about each of the above selected programs is vital for the success of the programs. Participation is directly dependent upon public knowledge and awareness. Development of an effective network system to publicize collection events and distribute educational materials would provide information to residents on how to reduce hazardous materials from the County waste stream. Chapter 7 is devoted to a discussion of education and information programs.

CHAPTER 1
INTRODUCTION



CHAPTER 1

INTRODUCTION

1.0 DEFINITION OF HOUSEHOLD HAZARDOUS WASTE

The California Department of Health Services, Code of Regulations Title 22 classifies a substance as a hazardous waste if it demonstrates one of the following characteristics:

- **Ignitability:** flammable.
- **Corrosivity:** eats away materials and can destroy human and animal tissue by chemical action.
- **Reactivity:** creates an explosion or produces deadly vapors.
- **Toxicity:** capable of producing injury, illness, or damage to human, domestic livestock, or wildlife through ingestion, inhalation, or absorption through any body surface.

Household Hazardous Waste (HHW) as defined by the California Integrated Waste Management Board are "those wastes resulting from products purchased by the general public for household use which, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may pose a substantial known or potential hazard to human health or the environment when treated, disposed, or otherwise managed." Examples of household products which are categorized as household hazardous waste when no longer considered useful are household cleaners, automotive products, home maintenance and improvement products, lawn and garden products. A more complete list of common household hazardous wastes is presented in Appendix A.

1.1 STATE AND LOCAL INFORMATION

Initially, California Assembly Bill 939 (AB 939), enacted in January, 1990, directed cities and counties to include a household hazardous waste component as part of their Source Reduction and Recycling Element. Assembly Bill 2707 (AB 2707), recognizing the significance of household hazardous waste management, was enacted in January 1991, requiring cities and counties to prepare Household Hazardous Waste Elements (HHWEs) which will be included in the Countywide Integrated Waste Management Plans.

Within the West Slope of El Dorado County is one incorporated city, Placerville, and several unincorporated communities. Because of the sparse population, small size, and small quantities of waste generated, a separate HHWE has been prepared. The County and City have agreed to implement the programs on a countywide basis (see Memoranda of Understanding in Appendix E).

It is the goal of the City of Placerville and the West Slope unincorporated area of El Dorado County to safely and properly manage HHW. Diversion from local municipal waste streams and prevention of environmental degradation are the proposed methods to accomplish this goal, as well as the reduction in the amount of HHW generated.

CHAPTER 2
OBJECTIVES



**CHAPTER 2
OBJECTIVES**

2.0 INTRODUCTION

The following objectives (Tables 2-1 and Table 2-2) have been selected by the City of Placerville and the West Slope of El Dorado County for short-term (1991-1995) and medium-term (1996-2000) planning periods:

TABLE 2-1 SELECTED OBJECTIVES FOR SHORT-TERM PLANNING PERIOD CITY OF PLACERVILLE AND WEST SLOPE UNINCORPORATED AREA OF EL DORADO COUNTY			
No.	Short-Term Objectives 1991-1995	Targeted Waste Materials	Implementation Year
1	Continue to provide proper disposal of HHW generated	All HHW	1991
2	Continue to recycle HHW to the extent possible	waste oils, batteries, paints	1991
3	Provide public education and awareness programs	All HHW	1993
4	Develop and implement a disposal/collection program for small quantity commercial sources	All HHW	1991
5	Further develop and implement a waste acceptance control program at all solid waste facilities	All HHW	1993
6	Develop plans for a permanent collection facility	All HHW	1993

**TABLE 2-2
 SELECTED OBJECTIVES FOR MEDIUM-TERM PLANNING PERIOD
 CITY OF PLACERVILLE AND WEST SLOPE
 UNINCORPORATED AREA OF EL DORADO COUNTY**

No.	Medium-Term Objectives 1996-2000	Targeted Waste Materials	Implementation Year
1	Continue to provide proper disposal of HHW generated	All HHW	1996
2	Continue to recycle HHW to the extent possible	All recyclable HHW	1996
3	Continue to implement and further develop public education and awareness programs	All HHW	1996
4	Provide a permanent collection facility	All HHW	1996
5	Develop a waste exchange program	All reusable HHW	1998

CHAPTER 3
EXISTING CONDITIONS



**CHAPTER 3
EXISTING CONDITIONS**

3.0 INTRODUCTION

Certain quantities of HHW are being kept out of the landfill due to existing HHW management programs and practices. Either from developed collection and disposal programs, or through illegal disposal, the following current programs or practices contribute to the existing "diversion" estimate of household hazardous waste in the City of Placerville and the West Slope of El Dorado County.

TABLE 3-1 EXISTING HHW REDUCTION CITY OF PLACERVILLE AND THE WEST SLOPE UNINCORPORATED AREA OF EL DORADO COUNTY		
Programs/Practices		Quantities
1	Battery ^(a) and Waste Oil Drop-off Sites	9,886.84 gallons
2	One-day Collection Events ^(b)	1,178 gallons 37 drums
3	Waste Acceptance Control Program	-- ^(c)
4	Public Awareness Program	-- ^(c)
5	Illegal Disposal	1,097 tons
^(a) Batteries are estimated to be 1 gallon each. ^(b) Quantities as reported for the entire County on form CIWMB-303 for CY 1990; presented in Appendix B. ^(c) Unquantifiable amounts; therefore not added into the diversion total.		

3.1 BATTERY AND WASTE OIL DROP-OFF SITES

Currently automobile batteries and waste oil are being collected on a regular basis at two locations in the West Slope of the county. Both batteries and waste oil are collected at the

Union Mine Landfill as part of routine operations. Additionally, the County Department of Transportation corporation yard accepts waste oil during its normal operating hours.

3.2 ONE-DAY COLLECTION EVENTS

One-day collection events sponsored by the County were held during the fall of 1990 and the spring of 1991. On October 6, 1990, and March 9, 1991, the residents of the western portion of the County were allowed to dispose of HHW with the restrictions as described in Appendix C.

3.3 WASTE ACCEPTANCE CONTROL PROGRAM

The current waste acceptance control program at the landfill is intended to prevent, to the extent possible, the acceptance of prohibited wastes, which includes household hazardous wastes. At this time the program consists of:

- Signs posted and leaflets distributed identifying what wastes are considered hazardous and stating that those wastes cannot be disposed of at the landfill (example is presented in Appendix D);
- Verbal inquiries at the landfill entrance. Drivers are asked if their loads contain any hazardous wastes; and
- Random load checks.

3.4 PUBLIC AWARENESS

Printed information materials on HHW is available to the public at the County Environmental Management office in Placerville and at the entrance of the landfill. Additionally, presentations and videos are available through the Environmental Management Department.

3.5 ILLEGAL DISPOSAL

HHW not being brought to a permitted collection event, nor one of the battery and waste oil drop-off sites, is assumed to be disposed of on the ground, in a private septic or public sewer system, into landfills or through some other illegal method. The only quantifiable amount of illegally disposed HHW was based on the Waste Generation Study. However, actual quantities cannot be determined from this report due to the fact that the majority of the HHW tonnage from the Waste Generation Study reflects the weight of empty containers.



CHAPTER 4

EVALUATION OF ALTERNATIVES



CHAPTER 4
EVALUATION OF ALTERNATIVES

4.0 INTRODUCTION

Alternatives considered to achieve the objectives of this Element are presented in Table 4-1. The following criteria were used by the El Dorado County Waste Management Task Force to evaluate the alternatives for program implementation.

1. **Waste Diversion Effectiveness** - the effectiveness of HHW programs is related to program frequency, program convenience and program efficiency, and is measured in terms of reducing either the volume or weight of HHW generated.
2. **Facilities Needed** - the need for expanding existing facilities or building new facilities to support implementation of the alternative.
3. **Short- and medium-term implementation feasibility** - factors which influence program feasibility include community need/coordination and financing.
4. **Consistency with local policies and conditions** - the consistency of each alternative with applicable local policies, plans and ordinances based upon local implementation of each alternative.
5. **Technical, Economic and Social Flexibility** - the ability of the alternative to accommodate changing economic, technological and social conditions. The availability of local, regional, state, national, and international end-users for the materials which would be diverted through implementation of each alternative being considered.
6. **Hazards Associated with Periodic Collection Days** - are there hazards, as defined in Chapter 9, Article 3 Section 18720, created by the alternative considered.

7. Institutional Barriers - institutional barriers to local implementation of the alternative may include location, safety and transportation.
8. Cost - the costs associated with short- and medium-term implementation.

A discussion of the evaluation of alternatives follows Table 4-1.

TABLE 4-1 ALTERNATIVES FOR POTENTIAL HHW PROGRAMS CITY OF PLACERVILLE AND WEST SLOPE UNINCORPORATED AREA OF EL DORADO COUNTY	
Program Alternatives	Rating Totals
Periodic Collection	4.1
Permanent Drop-Off Site	4.2
Mobile Collection	4.3
Door-to-door or Curbside Service	4.4
Waste Acceptance Control Program (load-checking)	4.5
Recycling/Waste Exchange Program	4.6
Public Education and Information	4.7

The collection, recycling and/or disposal of household hazardous waste has been accomplished by communities within California, as well as across the United States, by using one of four types of collection programs. The common HHW programs include: periodic, permanent, mobile and/or curbside types. These program alternatives, as well as load-checking, a waste exchange and public education and information programs will be evaluated below.

4.1 ALTERNATIVE - PERIODIC COLLECTION PROGRAM

A periodic household hazardous waste collection program involves the establishment of temporary collection location(s) for a short period of time. Commonly, publicly owned facilities such as maintenance yards, state owned parking lots, transfer stations, and landfills (CIWMB publication Guidelines for Household Hazardous Waste Collection Days, February 1989) are used as household hazardous waste collection centers for a one or two day time period. Householders are encouraged to bring specific types of household hazardous wastes to these events. The collection location is often operated by a group of local government, solid and/or hazardous waste industry and County employees along with community volunteers who have been trained for such a collection program. The trained personnel collect, sort, pack, and record the recyclable and non-recyclable household hazardous wastes into appropriate containers (usually 55-gallon drums) for transport to either a recycling or a Class I disposal facility.

Recently, some communities have begun to alternate the collection of recyclable household hazardous waste at one collection event (usually batteries, oil, and paint - "BOP" drops) and non-recyclable household hazardous waste (contaminated solvents, pesticides, pool chemicals) at the next collection event. Alternating the periodic events between recyclable and non-recyclable wastes collection assists the sponsors of such events in planning, cost control and recycling/disposal options.

4.1.1 Waste Diversion Effectiveness

Several factors have been identified by firms and communities that have sponsored or operated periodic household hazardous waste collection days as contributing to their effectiveness. These factors include: program frequency and notification, program convenience, and program efficiency.

4.1.2 Program Frequency

Several speakers at the 1990 EPA Household Hazardous Waste Conference in San Francisco noted that it often takes the public three years to become aware of and to use a periodic collection program. This is often attributed to the fact that the householder must be informed and educated on the hazardous nature of the materials they have for disposal, must recognize their social responsibility to not place this material in their garbage, and must be able to identify the location to take such waste.

In addition, certain types of periodic collection programs such as "BOP Drops" (battery, oil, and paint) may need to be offered more frequently than the full range of chemical collection programs. This is necessary as householders generate larger quantities of the recyclable wastes more frequently than non-recyclable household hazardous wastes (CIWMB staff, June 1991).

4.1.3 Program Convenience

Several speakers at the 1990 EPA Household Hazardous Waste Conference in San Francisco noted that householders generally participate in periodic collection programs if they are conveniently located. Speakers who had operated periodic programs found that an optimum distance for householders to transport hazardous waste is no more than ten miles from their home.

4.1.4 Program Efficiency

Participation in future periodic collection days is sometimes related to how long the householder waited in line to deposit their materials at the first event they attended. If a householder had to wait in a long line to leave waste at a collection day, the incentive for future participation often decreases.

While a periodic collection day is relatively easy to plan for and hold, this type of program does not offer a long-term disposal option for the householder. In addition, if a commitment is not made by a community to address the effectiveness factors previously identified, program participation will likely decrease and the sponsor will have a difficult time justifying the continuation of the program.

4.1.5 Facilities Needed for a Periodic Collection Program

In general, the type of facilities needed for a periodic collection program include a paved piece of property with sufficient space to route traffic, sort, package, and load waste. It is also useful to have a covered building and/or tent where packaged waste can be temporarily stored and secured and to have a covered work area for the sorting and packaging of waste and to protect workers from the weather. The type of wastes accepted or excluded will depend on the capabilities of those involved with sorting, packaging, transporting, and disposing of the wastes. Support equipment, such as pallets for automotive batteries and tanks and drums for motor oil and paint, will also need to be considered based on the type of program to be offered.

4.1.6 Short- and Medium-Term Implementation Feasibility

The factors that must be considered in implementing a periodic collection program in the short- and medium-term implementation periods include: community need/coordination and financing.

4.1.7 Financing

The financing of a household hazardous waste program is of critical importance and must be planned for far in advance of program implementation. In order to finance a periodic collection program (building/tent rental, personal safety equipment, barrels, labels, disposal costs, labor, advertising and educational materials), as well as train staff and volunteers.

The County Department of Environmental Management plans to sponsor two periodic collection programs, one in the fall and one in the spring. It is expected that the program would be continued throughout the medium-term implementation period (1996-2000) unless it is replaced with another collection alternative. Two potential financing options exist which may be pursued individually or in combination for this type of program. These options include grant funding from the CIWMB and CSA #10 funding.

4.1.8 Waste Disposal Rates

The County and City may, in accordance with AB 939, recover the cost of providing a household hazardous waste collection program by increasing waste disposal rates. However, it should be noted that as rates are raised, the amount of illegal disposal of household hazardous waste often increases within a community.

4.1.9 Short-Term Implementation Cost

The cost of operating a periodic collection program is largely attributable to the cost for disposal of the hazardous waste, the cost of equipment rental, and the cost of contractor labor if local agency staff can not be used or is not qualified to perform certain tasks. The cost to operate the two collection days held in 1990 was approximately \$145,000. Since the amount of household hazardous waste that will be brought to a periodic collection program can not be precisely estimated, a range of costs for programs held in similar sized communities were used for estimating purposes.

Costs can be partially minimized if local government agency staff, as well as volunteers, are used for the collection event. In addition, if local agency equipment can be used for consolidating and loading waste, costs may be reduced. Local waste haulers will often donate services and/or money to cover the cost for these programs.

4.1.10 Consistency with Local Policies and Conditions

The periodic alternative has been implemented in the past in the West Slope area of the County to reduce the amount of household hazardous waste that is being improperly disposed at the Union Mine Landfill. This alternative is consistent with local policies and conditions.

4.1.11 Technical, Economic, and Social Flexibility

Sponsors of periodic household hazardous waste collection programs usually are able to quickly adapt periodic collection programs to reflect technical change and/or improvements that occur in the field of household hazardous waste. The main reason why this is possible is that, unlike the permanent, mobile, and curbside programs, periodic programs usually do not have major investments in capital items which often limit the ability for the other types of programs to respond quickly to technical change.

While the program may be able to respond relatively quickly to technical change, these programs have difficulty in weathering economic change. Often a community will make a commitment to sponsor a periodic program once or twice, receive either an overwhelming response or a limited response, and discontinue the program. The cost of an overwhelming response can quickly exceed the budget that the community has allocated. In addition, if the response to the collection program is low, the community often finds it difficult to justify the cost of future collection days. Finally, the fact that if a community does not make a long-term commitment to conduct, plan, and budget for such economic swings which result from varying amounts of participation, the community often overextends itself and subsequently is forced to discontinue the program.

A program that is only offered periodically in a community generally offers limited opportunity for social flexibility. If the programs are offered over a several year time period, instead of once, the periodic collection programs should be able to reflect social changes

within the community. A major aspect of providing collection services for household hazardous wastes is to encourage social change in the householders' disposal behavior. Since periodic events are offered at infrequent intervals, sponsors of these programs have a limited opportunity to inform, educate, and encourage social behavioral change as it relates to household hazardous waste disposal.

4.1.12 Hazards Associated with Periodic Collection Days

The type of hazards that may be associated with periodic household hazardous waste collection days are few, if the program is well planned and operated by trained, qualified people. Hazardous waste, whether from the household or other source, if not transported, handled, or disposed of properly, is a potential hazard.

Potential hazards that must be planned for at periodic collection days include spillage and chemical reactions that may result in injuries to people and/or pollution of the environment. The public must be informed that state law only allows the transportation of up to 50 pounds of solid household hazardous waste and up to five gallons of liquid household hazardous waste by an unregistered hauler. This is to protect the vehicle driver and any responders if an accident should occur. Spillage may occur if people transport household hazardous waste in inappropriate containers, containers are not handled appropriately during transportation or at the collection site through accidental means. Often, the periodic collection facility is operated by many volunteers who are given limited training. Chemicals that are unknown should never be mixed together as chemical reactions may be the result. Spillage or chemical reactions potentially may result in accidents to people transporting waste, workers at the site, or property. It is important to have appropriate and adequate health, safety, and cleanup equipment available at the program, as well as to plan ahead for these type of emergencies. These types of hazards can be minimized through program education and pre-planning activities.

Periodic collection day events are planned in advance and, due to operational limitations, sponsors have limited ability on the day of the event to respond to changing conditions. For example, if participation rates were to dramatically increase from one event to another, the quantity of household hazardous waste delivered to the site may be so large so as to make proper handling impossible. In addition, unplanned or unanticipated participation increases often result in long lines, traffic queuing problems, and an increased potential for accidents associated with collection. Therefore, it is of utmost importance that when the site location is selected for the periodic program, these factors are kept in mind.

4.1.13 Institutional Barriers

The California Department of Health Services (DOHS) regulations require that a permit or permit variance for a household hazardous waste collection program that is operating an off-site hazardous waste facility be obtained. If waste will be stored in excess of 144 hours, a generator must apply for a Hazardous Waste Facility Permit and submit an Operation Plan in accordance with Section 66372 and 66391, Title 22, CCR. A variance can be obtained by a program generator if waste will be stored for under 144 hours (Section 66300 (e) (7), Title 22, CCR).

However, the Department also has proposed that the owner or operator of a temporary household hazardous waste collection facility (THHWCF) be allowed to operate in accordance with proposed Section 66392 (e) of Title 22, Division 4, Chapter 30, Article 4, and Title 26, Division 22, Section 22-66392 "Permits by Rule." Permits by Rule allows the owner or operator of a THHWCF deemed to have a permit when the owner or operator submits a Temporary Household Hazardous Waste Collection Facility Permit by Rule Notification (DOHS Form 8464) to the Department, the Department acknowledges receipt of the notification, and the owner and operator complies with requirements specified in Section 66392.2 (a).

4.2 ALTERNATIVE - PERMANENT COLLECTION FACILITY

A permanent collection facility consists of a building that is placed at a permanent or fixed location. A permanent household hazardous waste facility must be permitted by the Department of Health Services, must be located in an appropriate land use zone, and must meet County Hazardous Waste Management Plan guidelines. The facility is specifically designed for the long-term storage of hazardous wastes and is staffed by personnel trained in hazardous materials management as well as health and safety procedures. The staff usually includes either a chemist or a person trained in using a "hazcat" system for categorizing hazardous waste. The staff prepares and packages the waste either for recycling or for shipment to a Class I disposal facility. Packaged waste is stored at the facility until either enough waste of one type is gathered to make a truckload for shipment or until the storage time limits are about to expire and the waste must be shipped.

A permanent collection facility could also include a program for exchange of hazardous materials that may be useful to others. Similar waste exchange programs have been in operation for several years. Issues of liability for the hazardous materials that are exchanged need to be considered. The agency running the waste exchange could limit the liability through a waiver or release signed by the person delivering the waste and the person accepting it.

4.2.1 Waste Diversion Effectiveness

Operators of these programs have observed increased public participation, collection of household hazardous waste, and increased diversion of this waste from the landfill. Once the decision is made to have a permanent facility, an information/education program for informing the public of the purpose and location of the facility, the types of waste that will and won't be accepted, how waste should be transported, the operation hours of the facility, and additional information the sponsor wishes to relay to the public must be implemented.

Like most programs, the more the public is made aware and encouraged to participate, the more effective the program will be.

4.2.2 Facilities Needed for a Permanent Collection Facility and Program

Facilities needed for a permanent collection program include a permanent location, a storage building, public access, and utilities. A permanent facility will need to be designed to keep hazardous wastes segregated and will require appropriate ventilation, waste containment and fire protection systems, health and safety features, etc. Operation of this type of facility will require personnel trained in hazardous materials management as well as health and safety procedures. Qualified staff and staff training should be included in the budget as an ongoing expense item for this type of facility. Staff operating the facility usually includes either a chemist or a person trained in using a "hazcat" system for categorizing hazardous waste.

4.2.3 Short- and Medium-Term Implementation Feasibility

The factors that need to be considered in implementing a permanent collection facility in the short- and medium-term implementation periods include: community need, financing and County staff. If determined to be needed, this alternative appears to be feasible in the medium term.

4.2.4 Community Need

The County does have an existing program for the collection of household hazardous waste and there is interest to offer a permanent program to householders. It is expected that a household hazardous waste program will be needed to address hazardous wastes generated by householders for both the short- and medium-term implementation periods.

4.2.5 Financing

The financing of a household hazardous waste program is of critical importance and must be planned for far in advance of program implementation. In order to finance a permanent facility and program (land, building, staff, training, operation expenses, waste recycling and disposal expenses, personal safety equipment, barrels, labels, advertising and education materials, etc.), the County will need to obtain funds for this new program. Funds would be available from CSA #10.

4.2.5.1 CIWMB Grant Funding--

The CIWMB has grant money available for local governments who sponsor household hazardous waste collection programs. The County Department of Environmental Management should consider applying for a non-discretionary grant in 1995 from the CIWMB for a permanent HHW facility. In order to be eligible for 1996 funding, the County will need to show that a household hazardous waste program was implemented in 1995. As the grants do have a maximum value, the County would need to obtain money in excess of the maximum grant to develop a permanent facility and program.

4.2.6 Waste Disposal Rates

The County, in accordance with AB 939, may recover the cost of providing a household hazardous waste collection facility and program by increasing waste disposal rates.

4.2.7 Short-Term Implementation Costs

The majority of capital expenditures for the implementation of a permanent facility would be expended for the construction of such a facility. Actual costs are dependent upon factors such as the cost to upgrade an existing facility and/or land purchase costs; planning, permitting, and regulatory costs; the size of the storage building; the availability of nearby utilities; and if existing staff is available to operate such a program. A budget for operating expenses, maintenance, and overhead would need to be estimated, based on the amount of

time the facility is expected to be open and the amount of waste that is estimated to be handled, packaged, recycled, and disposed.

The costs associated with a new facility siting and construction would be significant. The operating costs of several different permanent facilities located throughout California are identified in Table 4-2.

TABLE 4-2 CALENDAR YEAR OPERATING COSTS FOR PERMANENT HHW FACILITIES ^{1/}	
City	Dollars (\$)
Monterey	\$35,000
San Bernardino*	\$425,000
San Diego	\$300,000
San Francisco	\$560,000
Santa Monica	\$125,000

* FY - 1989-90
^{1/} Source: 1989 Survey of California's HHW Programs, CIWMB

4.2.8 Consistency with Local Policies and Conditions

The County is not in the process of siting a permanent household hazardous waste collection facility. The concept of siting a permanent facility to support regional needs is consistent with local policies after a thorough review of alternative sites.

4.2.9 Technical, Economic, and Social Flexibility

The ability of an operator of a permanent household hazardous waste collection facility to respond to technical change will be dependent upon the type of change. For example, technical changes, such as storage requirements, that affect the facility structural design may require capital investment and, dependent upon the funding available, may be easy or difficult to respond to.

The operation of a permanent household hazardous waste collection facility and program generally requires a long-term financial commitment. In general, these facilities are most capital intensive in the first five years and to be successful must be supported as a long-term activity by the entire community. The worst thing that can happen in a community is to budget and build a permanent facility and forget to budget for the operation of the facility. As these facilities do require capital investment and continuing operation and maintenance costs, they do not offer quite the range of economic flexibility as a periodic program. However, if well planned and monitored, they offer collection, recycling, and disposal stability for household hazardous wastes to prevent health, safety, and pollution accidents that generally can not be achieved for the long-term by periodic or mobile programs.

Once a community decides to build a permanent household hazardous waste facility, it has also made a commitment to create social behavior change of its householders. Therefore, to make the facility and associated program successful, the local government and the facility operator must plan to respond to the changes that will inevitably occur as a result of facility installation.

4.2.10 Hazards Associated With Permanent Collection Facilities

The type of hazards that may be associated with a permanent collection facility are few, if the facility and collection program are well planned and operated by trained, qualified people. Hazardous waste, whether from the household or other source, if not transported, handled, or disposed of properly, is a potential hazard. Potential hazards that must be planned for at a permanent collection facility include: spillage, chemical reactions, injuries to people, and/or pollution.

Spillage may occur if people transport household hazardous waste in inappropriate containers; containers are not handled appropriately; and through accidental means. Spillage (and subsequent liability) is minimized at permanent programs by having the

operator of the permanent facility unload the household hazardous waste from the participants' vehicles (CIWMB, Recommendations for Developing Permanent HHW Collection Facilities, April 1990).

Chemical reactions may occur if improper chemicals are mixed together. Operators of a permanent facility generally establish a training program to train their own personnel in hazardous waste classification, testing, and packaging (CIWMB, Recommendations for Developing Permanent HHW Collection Facilities, April 1990).

4.2.11 Institutional Barriers

The development and operation of a permanent household hazardous waste collection facility may involve obtaining permits from a variety of local and state regulatory agencies. The permit requirement could also be considered an operational procedure. The regulatory agencies that should be consulted are identified in Table 4-3. The possibility of a regional curbside collection program will be discussed with the waste hauler or regional agency, if and when the County selects this type of program.

TABLE 4-3 AGENCIES TO BE CONSULTED IN THE DEVELOPMENT OF A HOUSEHOLD HAZARDOUS WASTE FACILITY	
Agency	Type of Permit
The Department of Health Services	Hazardous Waste Treatment, Storage, and Disposal Facility
CIWMB	Modification to Solid Waste Facilities Permit
Planning Department	Zoning Permits, CEQA
Building Department	Building Permits
Air Quality District	Air Quality Permit
County Env. Management Department	Administer County Hazardous Waste Plan

4.3 ALTERNATIVE - MOBILE COLLECTION PROGRAM

A mobile collection facility consists of a specially designed storage building mounted on a semi-truck trailer. The facility is moved from location to location within a community or between communities. The length of stay may vary from a day or two to up to several weeks and is dependent upon the amount of waste anticipated to be collected. The facility is staffed by trained personnel who screen, sort, and package wastes that are stored within the facility. Staff can either be provided by the local government agency or are often contract employees that work for the firms that sell and/or lease the storage buildings. Programs can be designed to collect recyclable waste only (batteries, oil, and paint) or for full-service collection.

4.3.1 Waste Diversion Effectiveness

This type of collection facility is particularly effective in providing a household hazardous waste program to service rural or outlying communities. Rural and outlying communities often have limited staff and/or funding that makes the development of a periodic or permanent household hazardous waste collection facility impossible.

Whether this type of facility is appropriate for a community and how effective the facility will be in collecting household hazardous waste is related to the local government commitment to provide such a service, the frequency at which the service will be offered and the amount of advance planning and publicity that is provided to local householders. Frequent communication with householders as to the date, time, and location of the mobile facility is critical for household hazardous waste collection effectiveness.

4.3.2 Facilities Needed for a Mobile Collection Program

The type of facilities needed for a mobile collection program include a location for the placement of the facility when it is brought to the community and adequate public access. It is important to inform the public of the location and days the mobile collection program will accept waste in their community to encourage participation. It is also desirable but not mandatory to have access to utilities such as electricity and water.

4.3.3 Short- and Medium-Term Implementation Feasibility

The factors that need to be considered in implementing a mobile collection facility in the short- and medium-term implementation periods include: community need, financing, and City and County staff.

4.3.4 Financing

The financing of a household hazardous waste program is of critical importance and must be planned for far in advance of program implementation. In order to finance a mobile collection facility and program (storage building, transport vehicle, staff, training, operation expenses, waste recycling and disposal expenses, personal safety equipment, barrels, labels, advertising and education materials, etc.), the County will need to obtain funds for this new program.

If the County chooses to develop a mobile collection household hazardous waste facility, it should be feasible to budget for and implement the program near the end of the short-term implementation period and continue this program throughout the medium-term implementation period. Two potential financing options which can be pursued individually or in combination for this type of program include: 1) grant funding from the CIWMB, and 2) funding from the CSA #10.

4.3.5 Waste Disposal Rates

The City and County, in accordance with AB 939, may recover the cost of providing a household hazardous waste mobile collection facility and program by increasing waste disposal rates.

4.3.6 Short-Term Implementation Costs

The cost to purchase a mobile collection facility is estimated at \$150,000. If a contracted service was used, the cost of the facility, transportation, and staff ranges from \$4,000 to \$7,000 per day. Disposal costs for the packaged household hazardous wastes are not included in the daily costs and range between \$300 - \$600 per drum of waste. The variation in the disposal cost is attributable to the type of waste that must be disposed.

4.3.7 Consistency with Local Policies and Conditions

There are no local policies or conditions that would prevent this alternative from being used by the City of Placerville and the West Slope unincorporated area of the County.

4.3.8 Technical, Economic, and Social Flexibility

The ability of an operator of a mobile household hazardous waste collection facility and program to respond to technical change may range from easy to difficult to accomplish. A technical change that impacts the way the waste is delivered to the facility, handled, processed, recycled, or disposed generally will be easy to respond to. Technical changes for household hazardous waste management that would affect the structural design of the facility may require a significant capital investment and would limit the ability of the operator of the program to respond quickly to these type of changes.

The cost of maintaining and operating a mobile household hazardous waste collection facility and program requires a moderate financial commitment over a several year time period. This type of facility requires a capital investment of a vehicle and a storage building for the

transport and storage of the building and collected wastes. If the community has a vehicle that can be retrofitted or could be used for other operations, the investment may be worthwhile. If this is not feasible, it is possible to contract with firms that lease this equipment and staff to operate the facility. If this service is contracted, the community must include periodic cost increases that will occur over time for this service.

The development of mobile facilities was the result of a social need to provide household hazardous waste collection services to rural or outlying areas. However, a program that is only offered periodically in a community generally offers limited opportunity for social flexibility. If the programs are offered over a several year time period, instead of once, the periodic collection programs could be modified to reflect social changes within the community.

A major aspect of providing collection services for household hazardous wastes is to encourage social change in householders' disposal behavior. Since mobile facility collection events are offered at infrequent intervals, sponsors of these programs have a limited opportunity to inform, educate, and encourage social behavioral change as it relates to household hazardous waste disposal.

4.3.9 Hazards Associated With Mobile Collection Facilities

The hazards that may be associated with a mobile collection facility are few, if the facility and collection program are well planned and operated by trained, qualified people. Hazardous waste, whether from the household or other source, if not transported, handled, or disposed of properly, is a potential hazard. Potential hazards that must be planned for at a mobile collection facility include: transportation related accidents, spillage, chemical reactions, and injuries to people and/or the environment.

Unlike the periodic collection event and a permanent facility, a mobile facility adds the potential for a transportation related accident and subsequent spillage, chemical reactions, and associated liability to the program. As a mobile program, it is required that the operator of the vehicle is a registered hazardous waste hauler, the vehicle is permitted to transport hazardous waste, and that all packaging, manifesting, and transportation regulations are followed.

Once the mobile facility is temporarily located within a community, the hazards associated with all programs--spillage, chemical reactions, and environmental pollution could occur. Spillage may occur if people transport household hazardous waste in inappropriate containers, if the containers are not handled appropriately, and through other accidental means. Spillage (and subsequent liability) is minimized at mobile programs by having the operator of the facility unload the household hazardous waste from the participants' vehicles.

Chemical reactions can occur if improper chemicals are mixed together. Operators of a mobile facility generally employ at least one chemist who is highly skilled in characterizing waste. Like chemists working at a periodic collection event (who are under pressure because of time restrictions to identify waste), the chemist at the mobile facility may be asked to do too much characterization work over a short time period. This could lead to mistakes and accidents.

Similar to a periodic collection event where the operator is often limited to the constraints of the existing property (facilities and traffic patterns), a mobile facility may not be ideally sited to minimize hazards.

4.3.10 Institutional Barriers

Three factors, location, safety and transportation permit requirements, may pose institutional barriers that limit the feasibility of siting mobile household hazardous waste collection

facilities. The possibility of a mobile collection program will be discussed with the waste hauler or regional agency, if and when the City and County selects this type of program.

4.3.11 Location

Finding an appropriate location for a mobile collection facility is as important as the siting process for a permanent facility. Even though the facility is temporary, the local planning and building departments should be consulted for zoning and permit requirements for temporary facilities. There may be a tendency to accept a site that may not be the "ideal" location because it will only be used temporarily; however, these sites may pose access or safety problems for the users, operators, and the environment.

4.3.12 Safety

In planning a mobile facility, local hazardous waste officials and the fire department should be included in the site selection process. Mobile facility site selection must ensure that local ordinances and fire codes will not become an institutional barrier to the location of the facility.

4.3.13 Transportation

Household hazardous waste collected at the mobile facility will be loaded onto a vehicle and transported over roadways; therefore, the operator will need to be registered as a hazardous waste hauler by the Department of Health Services, and the vehicle will need to be registered and inspected by the California Highway Patrol for the transportation of hazardous waste. These factors should be recognized and planned for months in advance of a local government purchasing a mobile facility. These permit requirements are addressed by the contracting firm, if such a firm is hired to provide mobile facility services. Additionally, the roads that the mobile facility will travel should also be evaluated for safety and for any local or state transportation restrictions.

4.4 ALTERNATIVE - DOOR-TO-DOOR/CURBSIDE SERVICE

Several communities in California have offered curbside collection of select (mainly recyclable waste liquids) categories of household hazardous waste. Similar to traditional solid waste curbside recycling programs, the householder on a designated collection day places the specific waste at the curb. Collection may be offered routinely on the same day as the regular solid waste pickup or may be offered less frequently at specific times of the year. Twenty-six cities have implemented a waste motor oil collection at the curb program (CIWMB Recycling Database, May 1991). The waste oil is collected by trained collectors and deposited in vehicles that have been modified or specifically designed to safely transport such waste.

4.4.1 Waste Diversion Effectiveness

This method of waste collection is an alternative for the collection of recyclable waste oil. A curbside waste oil collection program, for example, allows the householder a easy way to recycle oil that often is improperly disposed of down storm drains/sewers, tossed in the garbage, or used as a weed killer on soil. Since the waste oil is recyclable, the community receives immediate benefits of waste diversion and soil, surface, and groundwater protection.

4.4.2 Facilities Needed for Curbside Collection

The type of facilities needed for household hazardous waste curbside collection include: vehicles that are appropriately designed to contain the type and amount of waste to be collected; a packaging facility if the waste needs to be packaged for final transport or disposal; and a facility for the recycling of the recyclable waste that is collected.

4.4.3 Short- and Medium-Term Implementation Feasibility

The factors that need to be considered in implementing a curbside household hazardous waste collection program in the short- and medium-term implementation periods include: community need and financing.

4.4.4 Community Need

Currently, the West Slope area does not have a curbside waste oil program. As there is interest to offer continuing waste oil collection facilities to householders, a mobile collection program should be assessed in the short-term planning period.

4.4.5 Financing

The financing of a household hazardous waste program is of critical importance and must be planned for far in advance of program implementation. In order to finance a curbside collection program (modified collection vehicle(s), staff, training, operation expenses, waste recycling and disposal expenses, personal safety equipment, barrels, labels, advertising and education materials, etc.). If the City and County selects a curbside program, funds will be needed.

If the City and County chooses to develop a curbside collection household hazardous waste program, it should be feasible to budget for and implement the program near the end of the short-term time period and also during the medium-term time period. Two potential financing options which can be pursued individually or in combination for this type of program include: 1) grant funding from CIWMB, and 2) funding from the CSA #10.

4.4.6 Waste Disposal Rates

The City and County, in accordance with AB 939, may recover the cost of providing a household hazardous waste mobile collection facility and program by increasing waste disposal rates.

If this type of facility and program were selected, it is expected that budgeting, franchise agreement, and vehicle modification, as well as implementation, could be achieved towards the end of the short-term implementation period and be continued through the medium-term implementation period.

4.4.7 Short-Term Implementation Costs

The cost to operate a curbside household hazardous waste collection program will be dependent upon the type of waste collected and whether existing collection vehicles will be modified or whether vehicles designed for a specific waste type will be purchased. The cost to retrofit a garbage truck with a welded tank and to have the vehicle inspected is estimated to be approximately \$3,000-\$5,000 per vehicle.

If the waste is recycled after collection, it is expected that this cost will be less than if waste is packaged, transported, and disposed at a hazardous waste facility. Program operation, maintenance, and training costs are all dependent upon the level of service to be offered and the limitations of existing franchise agreements, equipment, and personnel.

4.4.8 Consistency with Local Policies and Conditions

There are no local policies or conditions that would prevent this alternative from being used by the City of Placerville or the West Slope unincorporated area of the County.

4.4.9 Technical, Economic, and Social Flexibility

A curbside collection program requires the operator to be able to determine the characteristics of the wastes that are to be collected and to make technical modifications to equipment for its collection. Prior to collecting household hazardous wastes at curbside, vehicles must be modified or designed specifically for this type of collection. Several firms have undertaken this challenge and have been able to work out the technical aspects of the special collection and handling requirements.

Curbside household hazardous waste collection programs are usually targeted at recyclable liquid hazardous wastes. A community should be assured that curbside is the appropriate collection alternative for use prior to investing in this alternative. This type of program requires equipment, staff, training, and a commitment to operate and maintain a budget to

pay for the program. The commitment should not be entered into lightly, as costs for staff, training, and equipment can be considerable.

The development of household hazardous waste curbside collection programs for used oil has been implemented in 26 California cities (CIWMB Recycling Database, May 1991) in response to community concerns about landfill pollution, water pollution, and the community's feeling of social responsibility. Curbside programs for specific waste types will largely be offered as an alternative if the community is willing to make this type of collection a priority and pay for additional services and equipment.

4.4.10 Hazards Associated with Curbside Collection Programs

The potential hazards associated with curbside collection programs are largely health and safety hazards for householders, collectors, and the environment. The attraction of unattended hazardous waste that might be tampered with by children and pets resulting in potential spillage, ingestion, and illness are hazards that must be addressed if a curbside program is proposed. Other types of hazards that are of concern include: transportation accidents, use of containers that look like they would contain non-hazardous materials or mask the contents, waste spills, chemical reactions, and pollution of the environment.

4.4.11 Institutional Barriers

Two factors, waste ownership and waste definition/collection requirements, may pose significant institutional barriers to the curbside collection of household hazardous waste.

4.4.12 Waste Ownership

It is very important from a legal and liability point of view to insure that a franchise agreement specifies who owns a household hazardous waste once it is put out for collection and who is responsible for cleanup should the waste be spilled, leaked, or pose a threat to human health, safety, and/or the environment.

The City and County should evaluate the household hazardous waste ownership issue and consider the need to adopt an ordinance to address this subject.

4.4.13 Waste Definitions/Collection Requirements

Local solid waste regulations should include a definition of household hazardous waste and specific collection requirements if curbside collection is offered within a community. The local regulatory agency with jurisdiction over solid waste should amend its regulations to include new waste streams, definitions, and requirements so government, waste collectors, and the householder are all aware of their respective responsibilities.

The possibility of a regional curbside collection program will be discussed with the waste hauler or regional agency, if and when the City and County selects this type of program.

4.5 ALTERNATIVE - WASTE ACCEPTANCE CONTROL PROGRAM

This type of program involves establishment of guidelines for the inspection of loads of waste entering the Union Mine Landfill to determine and the presence of hazardous wastes. A random load monitoring schedule would be developed.

4.5.1 Waste Diversion Effectiveness

Regardless of the effectiveness of other programs to divert hazardous waste from the landfill, a certain amount will be contained in the loads hauled to solid waste facilities. A load-checking program is important as a final measure to assure that hazardous waste is diverted.

4.5.2 Facilities Needed for Load Checking Program

There are no facilities required to implement this alternative.

4.5.3 Short- and Medium-Term Implementation Feasibility

The factors in implementing this alternative include a program to train workers and to manage the wastes recovered. Financing will need to be secured however, the cost will be minimum compared to the other alternatives. This alternative is feasible in the short-term planning period.

4.5.4 Community Need

Because limited HHW services are available to the residents in Placerville and the West Slope unincorporated area there is a need for load checking. This program should be assessed for the short-term planning period.

4.5.5 Financing

Financing for this program should be available from CSA # 10 funds in the short-term planning period.

4.5.6 Waste Disposal Rates

The City and County, in accordance with AB 939, may recover the cost of providing a household hazardous waste load-checking program by increasing waste disposal rates.

4.5.7 Short-Term Implementation Costs

The costs associated with the implementation of this alternative include developing guidelines and training the solid waste facility personnel who will do the inspecting.

If the waste is recycled after collection, it is expected that the cost of handling and disposal will be less than if it is packaged, transported and disposed of at a hazardous waste facility. Program operation, maintenance, and training costs are all dependent upon the limitations of existing franchise agreements, and personnel.

4.5.8 Consistency with Local Policies and Conditions

There are no policies or conditions that would prevent this alternative from being used by the City of Placerville and the West Slope unincorporated area of the County.

4.5.9 Technical, Economic, and Social Flexibility

A load-checking program requires that personnel have the training to be able to determine the nature of the wastes entering a solid waste facility. They must be trained in proper handling, storage and disposal of the wastes according to how hazardous the material is. The costs for training and staff are moderate. This alternative does not require public involvement and is therefore considered socially acceptable.

4.5.10 Hazards Associated with Waste Acceptance Control Program

The potential hazards include safety of the inspectors, spillage and utilization of containers which masks the contents inside.

4.5.11 Institutional Barriers

There are no anticipated institutional barriers.

4.6 ALTERNATIVE-RECYCLING/WASTE EXCHANGE

The current periodic drop-off collection program will continue to recycle materials collected such as waste oil, paints and lead-acid batteries to extent possible. In addition, the expansion of this program and the institution of permanent programs will require expansion of markets for the materials. It is also possible for the County to become part of the CALMAX waste exchange program developed by the CIWMB.

4.6.1 Waste Diversion Effectiveness

The success of this type of program is dependent on the available markets and or end-users for the materials collected.

4.6.2 Facilities Needed for Waste Recycling/Exchange

The type of facilities required include vehicles to transport the materials to market, a packaging facility and or recycling facility.

4.6.3 Short-and Medium-Term Implementation Feasibility

The factors to be considered in implementation of this alternative include the availability of markets and financing.

4.6.4 Financing

Funds required to begin this program would be approximately \$5,000. This program could be implemented by El Dorado Disposal Service, Inc. as part of their operations.

4.6.5 Short-Term Implementation Costs

As stated above, this program could be started for approximately \$5,000. The money would be used for the costs associated with the development and identification of markets for the collected materials.

4.6.6 Consistency with Local Policies and Conditions

There are currently no policies or conditions within the City of Placerville or the West Slope unincorporated area of the County which would prevent implementation of this alternative.

4.6.7 Technical, Economic, and Social Flexibility

A Recycling/Waste Exchange program requires identification of end-users and or markets for the materials collected. The CIWMB has developed the CALMAX waste exchange network which can be used for information regarding who uses various materials.

The markets for materials fluctuate which mean that economic stability for this program is not guaranteed. Such a program would need to be designed to provide for great flexibility in incoming revenue.

Because implementation of this program does not require public involvement, it is considered socially flexible.

4.6.8 Hazards Associated with Recycling/Waste Exchange

The potential hazards associated with this alternative are largely health and safety of the workers and handlers of the materials. Another potential hazard is from spills in transport to market.

4.6.9 Institutional Barriers

The question of ownership of the waste is the only potential institutional barrier to the implementation of a Recycling/Waste Exchange program.

4.7 ALTERNATIVE - PUBLIC EDUCATION AND INFORMATION

While a information/education program is an integral part of all successful household hazardous waste services provided by a local community, it can also be used as a program alternative for the diversion of household hazardous waste from landfills, storm drains/sewers, and direct contamination of soil.

In communities where collection programs are offered, information is provided to the householder prior to the collection event or about a facility to inform or educate the householder of the service being offered. Some communities provide additional educational materials, such as a speakers bureau, curricula for elementary schools, newspaper articles on the topic of household hazardous waste, to encourage the reuse, reduction or recycling of these materials.

4.7.1 Waste Diversion Effectiveness

A well planned and implemented information/education program will educate the householder to reuse, reduce, ⁺or recycle household hazardous wastes. If successful, this type of program will change the householder's attitude about the purchase, use, and disposal of chemicals used in the home and will ultimately reduce the need for the extensive collection, handling, transport, and disposal programs that are in existence in many communities.

Whether an information/education program directed solely at changing householder behavior can be effective in diverting waste from landfilling is not known. The staff from the CIWMB is working with local governments that have load checking programs to determine what effect information/education programs have had on the reduction in HHW being found at landfills (CIWMB staff, June 1991).

Typically, an education/information program is combined with one of the household hazardous waste collection services. In surveys conducted through periodic and permanent collection programs, householders indicate that they do change buying and disposal habits as a result of information and services being made available. The City and West Slope unincorporated area of the County are interested in implementing and monitoring a program directed at changing householder behavior toward household hazardous waste disposal.

4.7.2 Facilities Needed for an Information/Education Program

A budget is needed for an information/education program. The budget should provide for the development of an information and education program, staffing, printing, distribution, reference materials, and follow-up monitoring and analysis.

The type of information services and educational tools that can be developed include: an information hotline; staff trained to answer household hazardous waste questions; flyers or brochures on the availability of household hazardous waste reduction, reuse, and recycling

options; school curricula; speakers bureau; public service announcements; newspaper articles; etc.

4.7.3 Consistency with Local Policies and Conditions

There are no local policies or conditions that would prevent this alternative from being used by the City of Placerville or the West Slope unincorporated area of the County.

4.7.4 Short- and Medium-Term Implementation Feasibility

The factors that need to be considered in implementing an information and education household hazardous waste program in the short- and medium-term implementation periods include: community need, financing, and City/County staff.

4.7.5 Financing

The financing of a household hazardous waste program is of critical importance and must be planned for far in advance of program implementation. In order to finance a information/education program, a budget to cover publications, staff, training, operation expenses, and program monitoring is needed.

Two potential financing options which can be pursued individually or in combination for this type of program include: 1) grant funding from CIWMB, and 2) funding from the CSA #10.

4.7.6 Waste Disposal Rates

The City and County may, in accordance with AB 939, recover the cost of providing a household hazardous waste mobile collection facility and program by increasing waste disposal rates.

4.7.7 Short-Term Implementation Costs

The cost to operate a information/education program is dependent upon the type of information and education services offered, the size of the community and the volume of materials produced. Costs for information/education programs that are combined with collection programs generally are funded at less than \$1.00 per household. This cost often does not include the cost of follow-up monitoring usually conducted at the collection event or at the collection facility.

The cost per household should be increased, if a information/education type of program is used as the alternative to providing a household hazardous waste collection program.

4.7.8 Technical, Economic, and Social Flexibility

Information and education programs for household hazardous waste are usually designed to be reviewed and updated on an annual basis. Therefore, technical change that may occur in the field of household hazardous waste management can be easily accommodated.

The wide range of information/education program materials that can be or are already available allow a wide range of economic flexibility for a community. Many local jurisdictions throughout California have developed materials that can be purchased for a reasonable fee, modified to fit the conditions of the local community, and distributed to householders.

An information/education program that is multi-faceted can respond quickly to social change. Attitudes that are perceived within the community or particular household hazardous waste problems that a local agency desires to target from a social/behavioral point of view can all be reflected in information/education materials.

4.7.9 Hazards Associated With Information/Education Programs

The distribution of incorrect information is the major hazard that must be avoided in the information/education household hazardous waste program. Information that is in error, misunderstood, or used incorrectly will undermine the credibility of the program and the local government sponsors. This is a factor any time a program is developed and implemented and can be resolved by careful planning, review, implementation, and monitoring.

4.7.10 Institutional Barriers

To be effective, a information/educational program on household hazardous waste must be the responsibility of an agency with hazardous waste characterization, reduction, reuse, recycling, handling, transporting, and disposal knowledge. Identifying this agency and providing adequate funding, training, and program monitoring is the largest institutional barrier. The possibility of an information/education program will be discussed with the waste hauler or regional agency, if and when the City and County selects this type of program.

CHAPTER 5

PROGRAM SELECTION



CHAPTER 5

PROGRAM SELECTION

5.0 INTRODUCTION

The following program alternatives were selected based on the waste generation study, the previous evaluation process, determination of product end-use, descriptions of proposed handling and disposal methods, and of existing, expanded, or new facilities to support implementation, as applicable.

The programs selected for development will work interactively and in some cases sequentially with each other. Certain existing programs will be expanded while others will be newly developed.

5.1 PERIODIC COLLECTION PROGRAM

The one-day periodic community-wide collection events, held two times a year (one spring and one fall date for the West Slope of the county), were selected to be continued and expanded. Household hazardous waste as determined from the Waste Generation Study would be effectively diverted from improper disposal with the periodic collection program.

This program was selected to achieve the objectives of the HHWE based on the following criteria: low health and environmental hazards; flexibility in economic, technological and social changes; favorable implementation time frame; no need for new facilities; consistency with local plans, policies and ordinances; limited institutional barriers; known cost estimate; and known market availability.

In response to requests from the public and based on the waste generation study of commercial HHW quantities, the collection program will expand in fiscal year 1991-92 to include very small quantity generator hazardous waste. No additional or expanded facilities will be necessary to implement this program. The specific methodology will continue to be a drop-off program allowing participants drive-through service, with workers from a hazardous waste management firm handling, transporting and disposing of the collected HHW in compliance with federal, state and local regulations.

5.2 WASTE ACCEPTANCE CONTROL PROGRAM

Established guidelines for the inspection of waste loads entering the Union Mine Landfill will be determined. A random load monitoring schedule will be developed and conducted by trained workers to check incoming loads for hazardous waste. Appropriate management of any prohibited waste will be implemented.

This program was selected to achieve the objectives of the HHWE based on the following criteria: low health and environmental hazards; flexibility in economic, technological and social changes; favorable implementation time frame; no need for new facilities; consistency with local plans, policies and ordinances; and limited institutional barriers.

5.3 RECYCLING/WASTE EXCHANGE PROGRAM

The current periodic drop-off program will continue to collect reclaimables for recycling to the extent possible, such as waste oil, paints and lead-acid batteries. The expansion of the periodic collection events to receive very small quantity generator hazardous waste will also reduce the disposal of commercial HHW. Additionally, waste oil is being considered as one of the materials included in the proposed curbside recycling program (as discussed in Chapter 4 - Recycling Component of the West Slope El Dorado County Source Reduction and Recycling Element).

This program was selected to achieve the objectives of the HHWE based on the following criteria: low health and environmental hazards; flexibility in economic, technological and social changes; favorable implementation time frame; consistency with local plans, policies and ordinances; and known market availability.

5.4 PERMANENT HHW PROGRAM

A fixed HHW collection center is proposed for the medium-term planning period. It is proposed that the HHW facility be located at the proposed materials recovery facility (See Chapter 4 - Recycling Component of the West Slope El Dorado County Source Reduction and Recycling Element). This permanent facility would be available throughout the year at regular hours of operations for ongoing disposal of acceptable waste.

This program was evaluated to achieve the objectives of the HHWE based on the following criteria: flexibility in economic, technological and social changes; favorable implementation time frame; and known market availability.

The site for a permanent collection facility would be at an existing solid waste facility such as a proposed materials recovery facility or transfer station (as described in the SRRE). The site would require easy accessibility, paved areas, storage containers and buildings designed for the temporary storage and possible spills or leaks of HHW.

5.5 WASTE EXCHANGE PROGRAM

In coordination with the permanent HHW facility, a program would be developed making available for reuse by the public, safe and acceptable household hazardous materials. Such an exchange program reduces the quantity of HHW disposed and could potentially reduce the unnecessary purchases of materials that would be disposed of in the future.

This program was selected to achieve the objectives of the HHWE based on the following criteria: low health and environmental hazards; flexibility in economic, technological and social changes; favorable implementation time frame; consistency with local plans, policies and ordinances; and known market availability.

The site for the waste exchange program would be at the permanent HHW collection facility.

The anticipated end uses for materials diverted due to the above proposed programs are as follows:

- useable latex paints - consolidated and reused
- unusable latex paint - consolidated for fuel supplement
- solvents based paints and thinners - consolidated for fuel blending
- halogenated solvents - fuel blended
- nonhalogenated solvents - fuel blended
- antifreeze - fuel blended
- acids and bases - neutralizations
- asbestos - landfill
- lead acid batteries - recycled
- petroleum oil - recycled
- poisons - incineration
- exempt dioxins, mercury and cyanides - landfill
- aerosol cans - incineration

The projected quantities of HHW to be diverted are presented in the "WASTE DISPOSAL PROJECTIONS-SRRE CONDITIONS" tables for the residential and commercial populations for both the City of Placerville and the West Slope unincorporated area (presented in Appendix B of the SRRE).

The methods for handling and disposal of HHW for all applicable programs are consistent with state and federal guidelines for management of HHW.

5.5.1 End-users for Wastes Diverted

It is hoped that through the education/information program, City and County residents will significantly reduce the amount of household hazardous waste they generate. Of the wastes that are generated (batteries, waste oil, and paint, for example), the City and County anticipates that battery and waste oil recyclers would be the end-users for these wastes. Paint that is recycled usually comes back to the community for use by local agencies for the painting of graffiti, housing, park projects, and other community projects.

5.5.2 Proposed Methods for Handling and Disposal

Each household hazardous waste stream will have different regulations for handling and disposal. These regulations are largely based on the chemical composition of the waste. As the fire departments, along with the County Department of Environmental Management, intends to target the battery, oil, and paint wastes at its future periodic collection days, these wastes will be handled and disposed in accordance with the Department of Health Service regulations in place at that time. The transportation and recycling of all these wastes will be handled by firms that are permitted by the state.



CHAPTER 6

PROGRAM IMPLEMENTATION



CHAPTER 6
PROGRAM IMPLEMENTATION

6.0 INTRODUCTION

The implementation schedule for the selected short-term HHW programs are presented in Table 6-1, including the identification of the responsible agency or persons, necessary tasks, month and year of task implementation, and estimated costs. The implementation schedule for the medium-term planning period are shown in Table 6-2.

6.1 RECOMMENDED IMPLEMENTING AGENCY

The development of the programs, including planning, budgeting, and actual program implementation (upon approval by the City Council and Board of Supervisors) will be the responsibility of the El Dorado County Environmental Management Department.

**TABLE 6-1
IMPLEMENTATION SCHEDULE HHW MANAGEMENT PROGRAMS
SHORT-TERM PLANNING PERIOD
CITY OF PLACERVILLE AND WEST SLOPE
UNINCORPORATED AREA OF EL DORADO COUNTY**

Tasks	Month/ Year	Responsible Agency	Funding		
			Cost (\$)	Total Revenue	Revenue Source
TASKS NEEDED FOR COLLECTION PROGRAM					
Develop new RFP for one-day collection events	6/91	EMD	2,400	0	CSA #10
Select contractor	8/91	EMD	1,200	0	CSA #10
Implement collection programs ^{a,b}	10/91, 5/92	Greenfield Services	145,000	0	CSA #10
TASKS NEED FOR WASTE ACCEPTANCE CONTROL PROGRAM					
Develop guidelines	9/92	EMD	2,000	0	CSA #10
Train inspectors/load-checkers	1/93	EMD	3,000	0	CSA #10
Implement load checking program ^c	1/93	EMD	3,000	0	CSA #10
TASKS NEEDED FOR HHW RECYCLING/WASTE EXCHANGE PROGRAM					
Establish markets for recyclable HHW	10/91	E.D.S.I.	N/A	N/A	N/A
Implement collection of recyclable HHW ^c	1/92, 5/92	E.D.S.I., EMD	see above	see above	see above
TASKS NEEDED FOR EDUCATION AND INFORMATION PROGRAM					
Compile list of existing local newsletters	1/92	EMD, consultant	1,000	0	CSA #10
Develop waste management school curriculum including HHW	1/93	EMD, EDSI, Office of Education	15,000	0	to be deter- mined
Distribute HHW information through public information center ^c	9/93	EMD	5,000	0	CSA #10
Develop a HHW video	9/93	EMD	5,000	0	CSA #10

^a These one-day collection events will be conducted two times each fiscal year throughout the short term planning period.

^b Programs to continue until the development of the Permanent HHW Program.

^c Programs to continue through the short and medium term planning period.

Note:

EMD = Environmental Management Department

ESDI = El Dorado Disposal Service, Inc.

CSA = County Service Area

**TABLE 6-2
IMPLEMENTATION SCHEDULE HHW MANAGEMENT PROGRAMS
MEDIUM-TERM PLANNING PERIOD
CITY OF PLACERVILLE AND WEST SLOPE
UNINCORPORATED AREA OF EL DORADO COUNTY**

Tasks	Month/ Year	Responsible Agency	Funding		
			Cost (\$)	Total Revenue	Revenue Source
TASKS NEEDED FOR PERMANENT HHW PROGRAM					
Siting and acquisition of land for the facility	1/96	EMD	250,000	0	CSA #10
Permitting the facility	6/96	EMD, contractor	10,000	0	CSA #10
Construction of facility	9/96	contractor	150,000	0	CSA #10
Develop and implement collection/drop-off program ^d	1/97	EMD, contractor	40,000	0	CSA #10
TASKS NEEDED FOR RECYCLING/WASTE EXCHANGE PROGRAM					
Determine reusable HHW	1/96	EMD	30,000	0	CSA #10
Develop and implement program ^d	1/97	EMD	20,000	10,000	CSA #10

^d Program to continue through the medium term planning period.

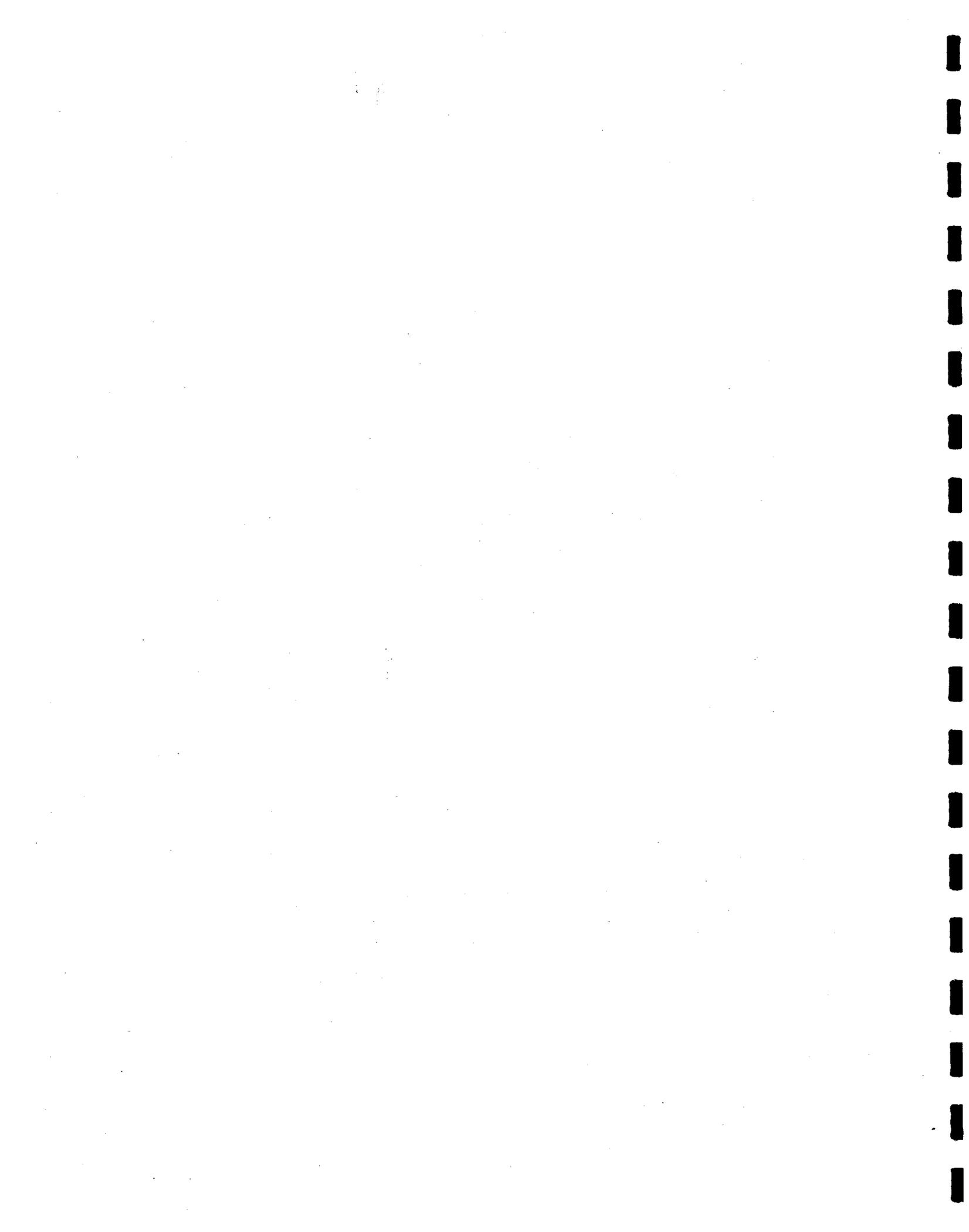
Note:

EMD = Environmental Management Department
CSA = County Service Area



CHAPTER 7

EDUCATION AND PUBLIC INFORMATION



CHAPTER 7

EDUCATION AND INFORMATION PROGRAM

7.0 INTRODUCTION

A program to promote public awareness and provide information about each of the above selected programs is vital for their success. Participation is directly dependent upon public knowledge and awareness. Development of an effective network system to publicize collection events and distribute educational materials would provide information to residents about methods to reduce hazardous materials from the county waste stream.

7.1 OBJECTIVES

- Compile a list of existing local newsletters/calendar of events
- Develop waste management school curriculum including HHW
- Distribute HHW information through public information center
- Develop a HHW documentary video

7.2 EXISTING PROGRAM CONDITIONS

Currently, the County has the following educational and public information programs and activities that promote reduction, recycling, safe handling and proper disposal of HHW. The existing conditions apply for all jurisdictions.

7.2.1 S.E.E. Project

The Student Educators for the Environment (S.E.E.) project is a cooperative effort between the County, private business and a local high school. The project, launched in the 1990-1991

school year is a unique public outreach program in which local high school students have prepared presentations on environmental issues, including HHW, for audiences varying from local elementary school to community service organizations.

7.2.2 Earth Day Informational Exhibits

Since 1990, booths displaying information on HHW have been present during Earth Day events held in the City of Placerville. The County Environmental Management Department uses this opportunity to inform the public about HHW management.

7.2.3 Public Outreach

The Recycling/HHW coordinator for the County Environmental Management Department is available to the public for presentations on HHW management. Additionally, brochures, pamphlets, factsheets, and informational "wheels" on HHW are available for distribution.

7.3 PREFERRED ALTERNATIVES

The following alternatives were evaluated to achieve the objectives of the HHWE based on the following criteria: low health and environmental hazards; flexibility in economic, technological and social changes; favorable implementation time frame; no need for new facilities; consistency with local plans, policies and ordinances; limited institutional barriers; known cost estimate; known market availability; and effectiveness in reducing the quantity of HHW generated. Based on the above criteria, the El Dorado County Waste Management Task Force evaluated program and chose the following programs:

7.3.1 Compile a List of Newsletters/Events

A list of existing newsletters and regular events will serve as a resource for providing information to the public on a continuous basis with a minimum of effort and expense. Articles can be submitted to the newsletters and a travelling display can be stationed at events on an ongoing basis.

7.3.2 Develop a Waste Management School Curriculum

A curriculum which is developed for the schools will inform youth on the proper way to handle and dispose of HHW. It is important to begin the process of education at an early age. It is often the case that school age youths will instruct other family members in proper waste management following such a program.

7.3.3 Public Information Center

An information center will serve as a clearinghouse of collected educational materials on HHW and safer alternatives, including a county produced video on HHW, made available to the public.

7.3.4 Develop HHW Documentary Video

A HHW documentary video may be utilized by clubs and service groups throughout the West Slope area. It will be made available to the public at the Public Information Center.

7.4 PROGRAM IMPLEMENTATION

The implementation schedule for the HHW education and public information programs are identified in Table 7-1.

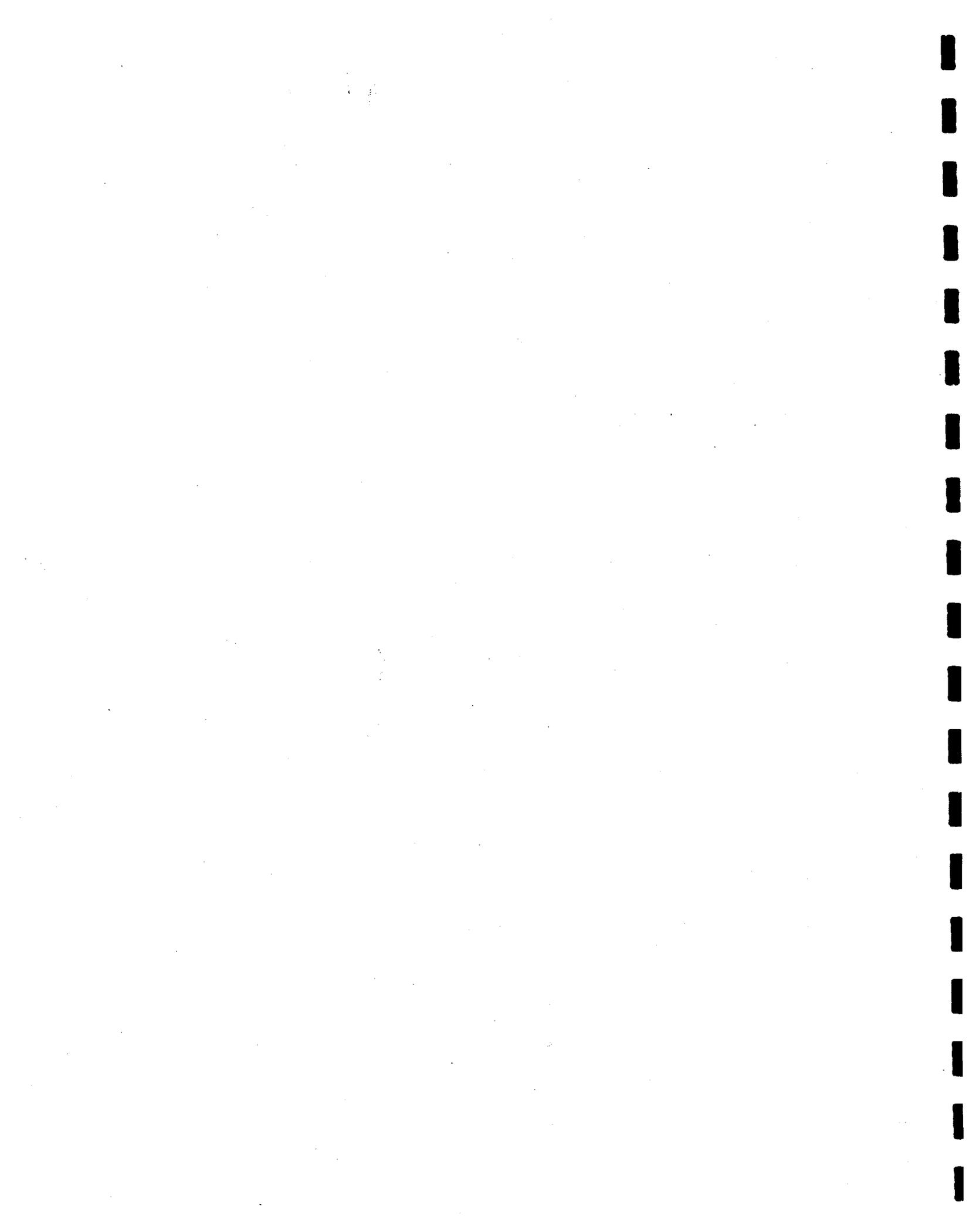
**TABLE 7-1
IMPLEMENTATION SCHEDULE FOR HHW EDUCATION AND INFORMATION PROGRAMS
CITY OF PLACERVILLE AND THE WEST SLOPE
UNINCORPORATED AREA OF EL DORADO COUNTY**

Compile list of existing local newsletters	1/92	EMD Consultant	1,000	0	CSA #10
Develop Waste Management School Curriculum including HHW	1/93	EMD, EDSI, Office of Education	15,000	0	To be determined
Distribute HHW information through public information center	9/93	EMD	5,000	0	CSA #10
Develop HHW video	9/93	EMD	5,000	0	CSA #10

NOTE: EMD = Environmental Management Department
 EDSI = El Dorado Disposal Service, Inc.
 CSA = County Service Area

CHAPTER 8

MONITORING AND EVALUTATION



CHAPTER 8

MONITORING AND EVALUATION

8.0 INTRODUCTION

Waste characterization studies of targeted waste categories will provide data that measures the changes in weight of waste categories for monitoring the success of diversion programs. The same overall methodology from the solid waste characterization analysis described in the Waste Generation Study will be used to be consistent with the results from the previous study.

Additionally, the quantities collected through the collection events and at the battery and waste oil drop-off sites will be measured and documented.

Annual surveys will be conducted to monitor and evaluate the success of the diversion objectives. The surveys will attempt to determine HHW waste management practices and identify the success in reducing or eliminating HHW from the waste stream. Trends towards increased use of non-toxic mechanical methods and products, as well as participation in recycling and disposal services, will also be monitored.

8.1 MONITORING PROGRAM

8.1.1 Monitoring Criteria

Monitoring criteria follow for the management and administration of all programs, as well as, the education/information and periodic collection programs.

8.1.2 Management and Administration

- Did the County hire or reassign staff to plan, budget, and implement the program?
- Did the County succeed in establishing an adequate plan for the program?
- Did the County establish an adequate budget for the program?
- Were the plans submitted to necessary agencies in a timely fashion?
- Were the tasks implemented on schedule?

8.1.3 Education/Information Program

- Did the City/County pursue financing of this program through grants, solid waste rates, or the general budget?
- Were the tasks implemented on schedule?
- Did the program reach all households in the City and unincorporated area?
- Did householders' behavior change from pre-program to after program implementation?
- Is there an observable reduction in household hazardous waste being sent to Class III landfills?
- Were the anticipated diversion goals of 50 percent reduction by 1995 and 100 percent reduction by 2000 attained?

8.1.4 Periodic Collection Program

- Did the County pursue financing of this program through grants, solid waste rates, or the general budget?
- Were the tasks implemented on schedule?

- Did the program reach all households in the City and County unincorporated area?
- How many and what percentage of the households participated in the periodic collection program?
- What categories and quantities of household hazardous waste were accepted, reused, recycled, landfilled, and/or transformed?
- Were all materials accepted for reuse and recycling successfully used and/or marketed?
- Is there an observable reduction in household hazardous waste being sent to Class III landfills?
- Were the anticipated diversion goals of 50 percent reduction by 1995 and 100 percent reduction by 2000 attained?

8.1.5 Monitoring Methods

The following methods are planned to track and document the implementation of the household hazardous waste education/information and periodic collection programs.

8.1.5.1 Education/Information Surveys--

- The County will include questionnaires or send follow-up questionnaires to householders who have received educational or informational materials, presentations, and/or advice on household hazardous waste from staff.
- The County will review the results of these surveys, note suggestions, and make recommendations of how the program should be changed to clarify the information, goals of the program, and encourage the reduction of household hazardous waste.

8.1.5.2 Periodic Collection Program Surveys--

- The County will survey householders who participate at periodic collection days to determine address, type and quantity of waste, how the person heard about the program, have they received materials from the education/information program, have they reduced their use of household hazardous materials, how long have they had the waste they brought to the program, would they be willing to pay for the installation of a permanent facility, and any other comments regarding the program.
- The County will review the results of these surveys, compile statistics, note suggestions, and make recommendations of how the program should be changed to encourage the reduction of household hazardous waste.

TABLE 8-1 IMPLEMENTATION SCHEDULE FOR MONITORING AND EVALUATION PROGRAMS CITY OF PLACERVILLE AND WEST SLOPE UNINCORPORATED AREA OF EL DORADO COUNTY				
Tasks	Month/ Year	Responsible Agency	Cost (\$)	Revenue Source
Survey the public regarding education/information	6/96	EMD, PCS	5,000	CSA #10
Survey residents regarding participation in collection programs	6/96	EMD, PCS	5,000	CSA #10
Note: EMD = Environmental Management Department PCS = Placerville City Staff				

8.1.6 Funding

The funding source for the monitoring and evaluation system is from County Service Area No. 10 parcel assessment fees, as further described in Chapter 9-FUNDING.

8.1.7 Recommended Monitoring Agency

The monitoring of the programs, including planning, and actual program implementation will be the responsibility of the County Environmental Management Department.

8.1.8 Contingency Measures

Measures to be implemented if there is a shortfall in the objectives are:

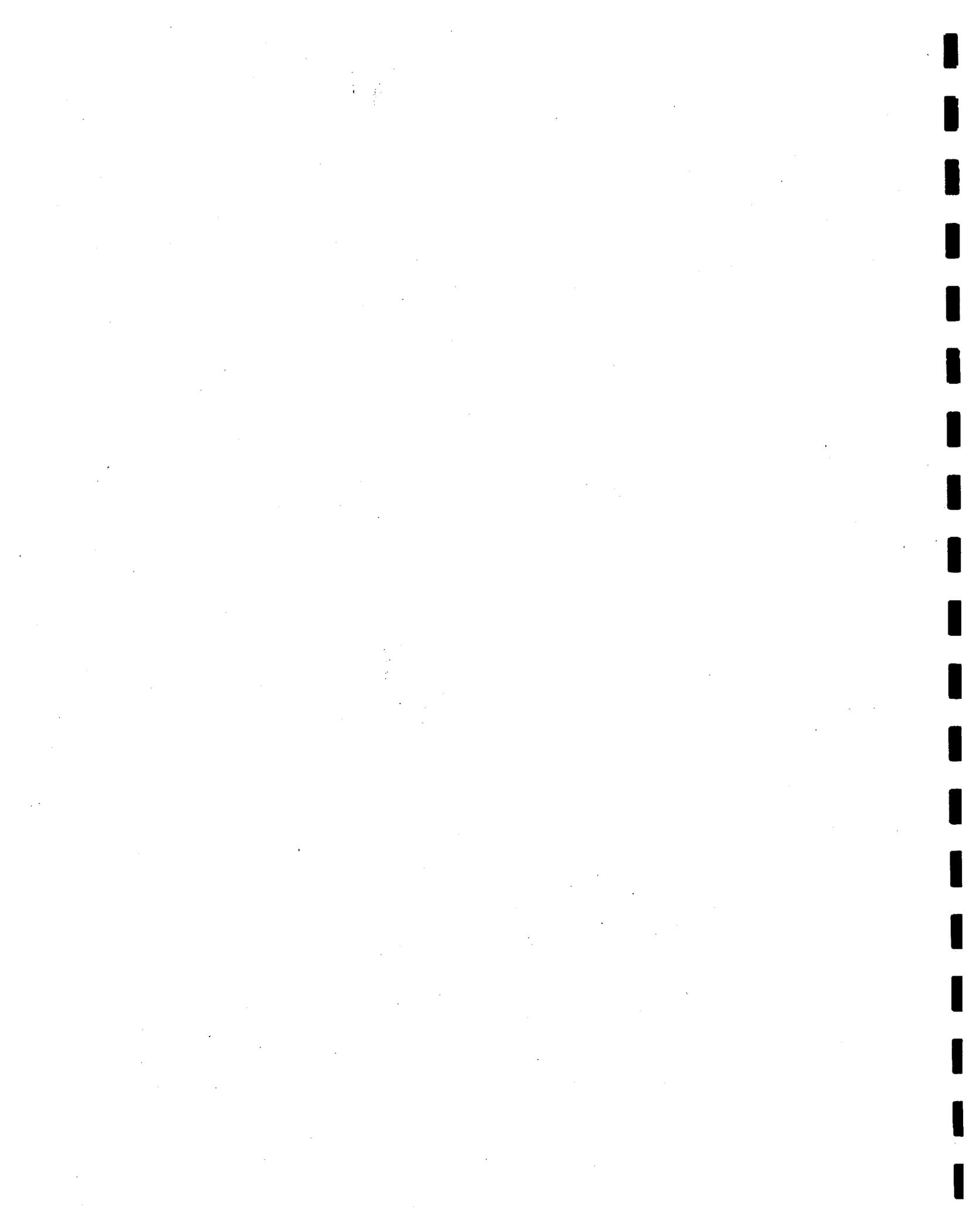
- Increase the frequency of program monitoring and review;
- Modify the objectives

8.1.9 Annual Report

An annual report submitted to the CIWMB will include discussion and evaluation of the following:

- Accomplishment of the objectives
- Implementation of the tasks on schedule
- Participation levels of educational programs

The Environment Management Department is the responsible agency for the monitoring and evaluation, as well as submittal of the report.



CHAPTER 9

FUNDING



CHAPTER 9 FUNDING

9.0 INTRODUCTION

The principal source of funding for household hazardous waste management as well as non-hazardous solid waste management activities in the City of Placerville and the West Slope Area of El Dorado County is County Service Area No. 10 assessments. Within this special assessment district every improved parcel with value greater than a \$10,000 is assessed a solid waste fee and a household hazardous waste fee. Those improved parcels on septic systems are also currently assessed a liquid waste fee. Revenues collected from the fee in this area have risen from \$128,000 in 1988-89 to \$256,000 in 1990-91. An increase in the fee from \$8 per parcel to \$15 per parcel is expected to increase County revenue from this source to \$480,000 in 1991-92.

El Dorado County Environmental Management Department conducted its first household hazardous waste collection in the fall of 1990 for the City of Placerville and the West Slope unincorporated area of the County. There was a second collection in March 1991. The total cost for these collections was about \$145,000. Based on past collections, a goal of maintaining two collections per year, and expansion of the program to include small quantity generator hazardous waste, the estimated cost for 1992 is approximately \$152,250.

Education and public information expenses are included within each of the individual program's total costs.

It should be noted that during fiscal year 1990-91, the County hired an additional staff person to function as a recycling and HHW coordinator. This and other administrative costs

associated with SRRE/HHWE programs are about 12 percent of the current administrative budget for the Solid Waste/Hazardous Waste Division. This amounts to \$50,000 for 1990-91, but is expected to double by 1995 as the population grows and program implementation expands.

The County may consider the following other revenue-gathering mechanisms for contingency funding:

- Certificates of Participation (Bonds) - Under this form of financing, a private entity would fund and operate the HHW facilities, but the County would assume ownership of the facilities at the end of the bond term. Essentially, the County would guarantee a certain level of throughput to the facilities, thus a certain level of fee revenue to fund the new facilities.
- If no private entity is found to fund the facilities and the combination of tipping fee increases and special parcel assessments is not sufficient to cover the costs, industrial revenue bonds could be issued. If interest on these bonds were fully tax-exempt, a lower rate, such a 9 percent rather than 12 percent, could be used to decreased total costs.

TABLE 9-1 ESTIMATED ANNUAL HHW PROGRAM COSTS 1990-1995 CITY OF PLACERVILLE AND WEST SLOPE UNINCORPORATED AREA OF EL DORADO COUNTY						
		1991	1992	1993	1994	1995
System Data	Number of Households ^a	48,495	50,128	51,822	53,574	55,387
	Population ^b	100,258	104,320	108,521	112,877	117,390
HHWE Programs	Annual O&M	\$145,000	\$152,250	\$159,863	\$167,856	\$176,248
	Total Cost	\$145,000	\$152,250	\$159,863	\$167,856	\$176,248

^a Source: California Department of Finance
^b Source: 1990 Census Data

**TABLE 9-2
ESTIMATED ANNUAL HHW PROGRAM COSTS 1996-2000
CITY OF PLACERVILLE AND WEST SLOPE
UNINCORPORATED AREA OF EL DORADO COUNTY**

		1996	1997	1998	1999	2000
System Data	Number of Households ^a	57,263	59,203	61,211	63,288	65,457
	Population ^b	122,066	126,912	131,943	137,155	142,551
HHWE Programs	Annual O&M	\$185,061	\$194,314	\$204,030	\$214,231	\$224,943
	Total Cost	\$185,061	\$194,314	\$204,030	\$214,231	\$224,943

^a Source: California Department of Finance

^b Source: 1990 Census Data



CHAPTER 10
REFERENCES



CHAPTER 10

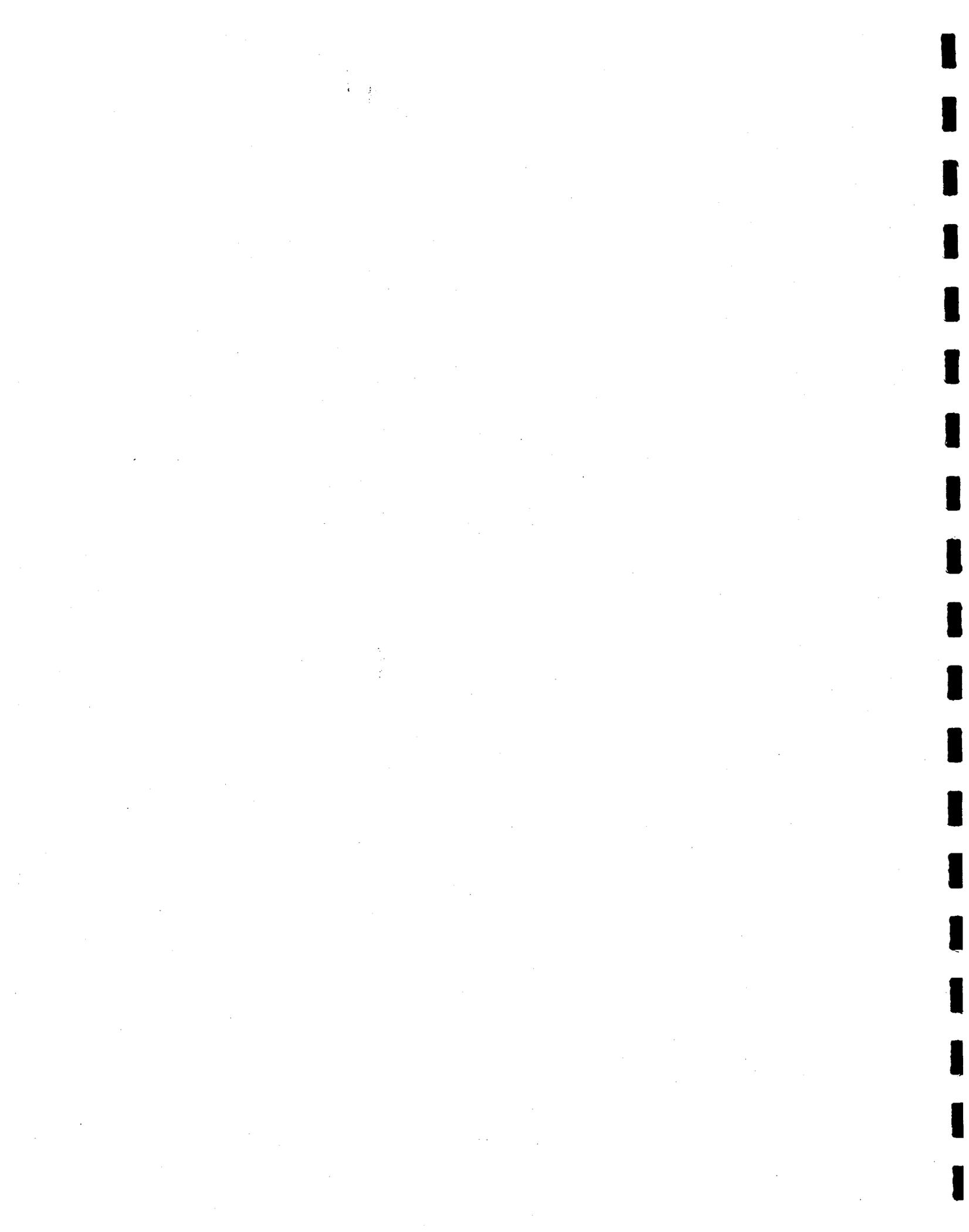
REFERENCES

1. **Guidelines for Household Hazardous Waste Collection Days, CIWMB, February 1989.**
2. **Recommendations for Developing Permanent HHW Collection Facilities, CIWMB, April 1990.**
3. **Recycling Database, CIWMB, May 1991.**



APPENDIX A

COMMON HOUSEHOLD HAZARDOUS WASTES



COMMON HOUSEHOLD HAZARDOUS WASTES

CORROSIVES (ACIDS)

Boric Acid
Car Battery Acid
Copper Cleaners
Etching Solutions
Ferric Chloride
Fertilizers *
Hydrochloric Acid
Hydrofluoric Acid
Metal Cleaners
Muriatic Acid
Naval Jelly
Phosphoric Acid
Pool Acid
Sheep Dip
Sodium Bisulfate
Sulfuric Acid
Toilet Bowl Cleaners *

CORROSIVES (BASES)

Ammonia and Ammonia Based
Cleaners
Battery Terminal Cleaner
Caustic Soda
Cass Pool Cleaners *
Drain Cleaners *
Household cleaners *
Lime
Lye
Oven Cleaners *
Sodium Hydroxide
Window Cleaners

FLAMMABLES & COMBUSTIBLES

Acetone
Adhesives *
Aerosol
Air Freshener
Alcohols
Artificial Snow
Asphalt Driveway Topping
Automotive Body Filler (Bondo)
(unsolidified)
Automotive Oils
Automotive Waxes
Bar-B-Que Lighter Fluid
Benzene
Brake Fluid
Camphor
Chrome-Silver Polishes *
Cutting Oil
Denatured Alcohol
Diesel Fuel
Disinfectants
Duplicator Fluid
Enamel Paint (unsolidified)
Enamel/Oil Base Paint
Epoxy Paint (unsolidified)
Ethanol

Ether
Ethylene Glycol
Fiberglass Resins (unsolidified)
Fingernail Polish and Remover
Floor/Furniture Polish
Formaldehyde Solution
Formalin
Gasoline
Glues *
Grease
Household Waxes
Isopropyl Alcohol
Kerosene
Lacquer Thinner
Lacquer Paint (unsolidified)
Unseed Oil
Liquid Waxes *
Liquid Sandpaper *
Liquid Butane
Methanol
Naphtha
Oils (petroleum)
Organic solvents
Paint Thinners
Paint Strippers *
Paraffin Oil
Pentachlorophenol
Perfume
Petroleum Distillates
Plastic Roof Cement
Plastic Model Cement
Polyurethane Paint (unsolidified)
Polyurethane Cement (unsolidified)
Power Steering Fluid
Primers
Roofing Cement
Rug/Upholstery Cleaner
Sealers
Shellac Thinner
Silicone Sprays
Spot Remover/Dry Cleaning Fluids
Thinner
Tile Cement
Tire Black
Toluol/Toluene
Transmission Fluid
Transmission Oil
Turpentine
Varnish
Wallpaper Cement
Windshield Wiper Fluid
White Gas
Wood Filler/Putty
Wood Stain
Xylo/Xylene

ORGANIC PEROXIDE

Adhesive Catalysts
Automotive Body Filler Catalyst
Tree Root/Stump Killer

OXIDIZERS

Ammonium Nitrate
Bleach
Calcium Hypochlorite
Chlorates
Fertilizers *
Fluorine
Hair Coloring
Hydrogen Peroxide
Iodine
Nitric Acid
Plant Food
Potassium Permanganate
Sodium Hypochlorite
Toilet Bowl Cleaner with bleach

POISONS

Ant and Roach Killer
Anti-Freeze
Arsenic Compounds
Automotive Cleaners
Bacterial Pipe Cleaners
Bordeaux Mix
Boric Acid
Bug Remover
Chlordane
Chrome-Silver Polishes *
Chromium
Copper Sulfate
DDT
Diazinon
Dimethylamine Salts
Disinfectants *
Dog Repellent
Ethylene Glycol
Fertilizers
Flea Spray/Powder
Fungicides *
Gopher Killer
Insect Sprays
Lead Compounds
Lice Powder
Lindane
Malathion
Mercury
Methylene Chloride
Mole Killer
Moth Crystals
Pentachlorophenol
Pesticides
Pharmaceuticals
Plant Food
Pruning Paint
Pyrethrins
Rat Poison
Rose Dust
Sheep Dip
Snail/Slug Killer
Strychnine
Tar Remover
Weed and Grass Killer
Windshield Wiper Fluid

* Check ingredients to be sure



APPENDIX B
CIWMB-303 FOR CY 1990



Placerville
State of California

California Integrated Waste Management Board

HOUSEHOLD HAZARDOUS WASTE COLLECTION INFORMATION

CIWMB-303 (1/90)

Name of Local Agency:

Phone:

County of El Dorado/Environmental Management Dept. 916-521-5307
Address: City: County: State: Zip:

7563 Green Valley Road. Placerville, El Dorado CA 95667

(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	843.00	=====	5	4	Rc
2. Paints					
a. Latex	1830.55	=====	2393	4	Ru
b. Oil Base	1830.55	=====	2393	4	Bf
3. Solvents, thinners, and stains	200.64	=====	188	7	Bf
4. Gasoline and oil (mixed)	202.93	=====	302	11	Bf
5. Aerosols (excluding pesticides/herbicides)	=====	395.00	594	5	T-1
6. Other	.35	870.00	15	6	T-1
FLAMMABLE SUBTOTAL	4908.02	1265.00	5890	41	=====

Re Re-used	Transfer Station	T-1	Stabilization
Re Recycled	Incinerator	D	Land Disposal
Bf: Bioremediation	Aqueous Treatment	Other	

Placerville

Waste Category	Gallons	Pounds	Number of Containers	Number of Drums (55 gal)	Management Method
----------------	---------	--------	----------------------	--------------------------	-------------------

B. Pesticides

Such as herbicides, insecticides, fungicides, etc.

<u>95.51</u>	<u>663.38</u>	<u>412</u>	<u>16</u>	<u>T-1</u>
--------------	---------------	------------	-----------	------------

PESTICIDE SUBTOTAL	<u>95.51</u>	<u>663.38</u>	<u>412</u>	<u>16</u>	<u> </u>
---------------------------	--------------	---------------	------------	-----------	---------------

C. Corrosives

1. Acids					
a. Oxidizing	<u>7.50</u>	<u> </u>	<u>11</u>	<u>1</u>	<u>T-2/T-3/D</u>

b. Non-Oxidizing	<u>52.00</u>	<u>6.50</u>	<u>72</u>	<u>5</u>	<u>T-2/T-3/D</u>
------------------	--------------	-------------	-----------	----------	------------------

2. Alkaline	<u>135.25</u>	<u>6.75</u>	<u>36</u>	<u>7</u>	<u>T-2/T-3/D</u>
-------------	---------------	-------------	-----------	----------	------------------

CORROSIVES SUBTOTAL	<u>194.75</u>	<u>13.25</u>	<u>119</u>	<u>13</u>	<u> </u>
----------------------------	---------------	--------------	------------	-----------	---------------

D. Oxidizers

Excluding acids	<u>.50</u>	<u>15.50</u>	<u>15</u>	<u>3</u>	<u>T-2/T-3/D</u>
-----------------	------------	--------------	-----------	----------	------------------

OXIDIZERS SUBTOTAL	<u>.50</u>	<u>15.50</u>	<u>15</u>	<u>3</u>	<u> </u>
---------------------------	------------	--------------	-----------	----------	---------------

E. Miscellaneous

1. Car Batteries	<u> </u>	<u>3120.00</u>	<u>104</u>	<u> </u>	<u>Rc</u>
------------------	---------------	----------------	------------	---------------	-----------

2. Dry Cells	<u> </u>				
--------------	---------------	---------------	---------------	---------------	---------------

3. Mercury	<u> </u>	<u>2.00</u>	<u>1</u>	<u>1</u>	<u>T-1 D</u>
------------	---------------	-------------	----------	----------	--------------

Non RCRA Solid & Other Liquid	<u>144.74</u>	<u>262.25</u>	<u>428</u>	<u>10</u>	<u>At</u>
-------------------------------	---------------	---------------	------------	-----------	-----------

5. Asbestos	<u> </u>	<u>33.00</u>	<u>3</u>	<u>1</u>	<u>D</u>
-------------	---------------	--------------	----------	----------	----------

MISC. SUBTOTAL	<u>144.74</u>	<u>3417.25</u>	<u>536</u>	<u>12</u>	<u> </u>
-----------------------	---------------	----------------	------------	-----------	---------------

TOTAL WASTE COLLECTED	<u>5343.52</u>	<u>5374.38</u>	<u>6972</u>	<u>85</u>	<u> </u>
------------------------------	----------------	----------------	-------------	-----------	---------------

South Lake Tahoe

State of California

California Integrated Waste Management Board

HOUSEHOLD HAZARDOUS WASTE COLLECTION INFORMATION

CWMB-303 (1/90)

Name of Local Agency:

Phone:

County of El Dorado/Environmental Management Dept.

916-621-5307

Address:

City:

County:

State:

Zip:

7563 Green Valley Road

Placerville, El Dorado CA

95667

(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	753.00	=====	12	11	Rc
2. Paints					
a. Latex	399.29	=====	547	2	Ru
b. Oil Base	399.29	=====	547	1	Bf
3. Solvents, thinners, and stains	59.96	=====	10	4	Bf
4. Gasoline and oil (mixed)	27.42	=====	72	3	Bf
5. Aerosols (excluding pesticides/herbicides)	=====	74.00	54	2	T-1
6. Other	.46	1.50	4	3	T-1
FLAMMABLE SUBTOTAL	1639.42	75.50	1246	26	=====

Management Methods

Ru Re-used
 Rc Recycled
 Bf Blended Fuel
 T-1 Transfer Station Incinerator
 T-2 Aqueous Treatment
 T-3 Stabilization
 D Land Disposal
 Other

South Lake Tahoe

Waste Category	Gallons	Pounds	Number of Containers	Number of Drums (55 gal)	Management Method
----------------	---------	--------	----------------------	--------------------------	-------------------

B. Pesticides

Such as herbicides, insecticides, fungicides, etc.	<u>13.75</u>	<u>3.50</u>	<u>23</u>	<u>3</u>	<u>T-1</u>
--	--------------	-------------	-----------	----------	------------

PESTICIDE SUBTOTAL	<u>13.75</u>	<u>3.50</u>	<u>23</u>	<u>3</u>	<u> </u>
--------------------	--------------	-------------	-----------	----------	---------------

C. Corrosives

1. Acids	<u> </u>				
a. Oxidizing	<u> </u>				

b. Non-Oxidizing	<u>3.58</u>	<u>1.00</u>	<u>8</u>	<u>2</u>	<u>T-2/T-3/D</u>
------------------	-------------	-------------	----------	----------	------------------

2. Alkaline	<u>.07</u>	<u>1.00</u>	<u>2</u>	<u>2</u>	<u>T-2/T-3/D</u>
-------------	------------	-------------	----------	----------	------------------

CORROSIVES SUBTOTAL	<u>3.65</u>	<u>2.00</u>	<u>10</u>	<u>4</u>	<u> </u>
---------------------	-------------	-------------	-----------	----------	---------------

D. Oxidizers

Excluding acids	<u> </u>				
-----------------	---------------	---------------	---------------	---------------	---------------

OXIDIZERS SUBTOTAL	<u> </u>				
--------------------	---------------	---------------	---------------	---------------	---------------

E. Miscellaneous

1. Car Batteries	<u> </u>	<u>1110.00</u>	<u>37</u>	<u> </u>	<u>Rc</u>
------------------	---------------	----------------	-----------	---------------	-----------

2. Dry Cells	<u> </u>				
--------------	---------------	---------------	---------------	---------------	---------------

3. Mercury	<u> </u>				
------------	---------------	---------------	---------------	---------------	---------------

Non RCRA Solid & Other Liquid	<u>3.64</u>	<u>271.75</u>	<u>339</u>	<u>3</u>	<u>Bf</u>
-------------------------------	-------------	---------------	------------	----------	-----------

MISC. SUBTOTAL	<u>3.64</u>	<u>1381.75</u>	<u>376</u>	<u>3</u>	<u>Bf</u>
----------------	-------------	----------------	------------	----------	-----------

TOTAL WASTE COLLECTED	<u>1660.46</u>	<u>1462.75</u>	<u>1655</u>	<u>36</u>	<u> </u>
-----------------------	----------------	----------------	-------------	-----------	---------------

APPENDIX C

**HOUSEHOLD HAZARDOUS WASTE
COLLECTION EVENT ANNOUNCEMENT**



FREE DISPOSAL SERVICE OF HOUSEHOLD HAZARDOUS WASTE

DATE: Sunday May 5th

RECEIVING HOURS: 9:00 am. - 2:00 pm. ONLY

**SITE: South Tahoe Refuse Co., Inc.
2140 Ruth Ave. SLT**

**Acceptable Materials: Poisons, solvents,
pesticides, herbicides, paints, pharmaceuticals,
auto products (waste oil, batteries, antifreeze)**

**NO explosives or radioactive materials allowed by state law.
NO business or contractor waste allowed by state law.**

**Before transporting hazardous waste to the collection site,
be sure that:**

- The containers are sound and not leaking
- The containers are labeled with the contents
- The materials are away from passengers
- The amount of waste per visit does not exceed 5 gallons
or 50 lbs (by state law)

**Service provides by El Dorado County
Environmental Management Dept.**

For more information call 573-3145 / 8:00 am - 5:00 pm, M-F



A P P E N D I X D

**NOTICE TO RESIDENTS OF
WESTERN EL DORADO COUNTY**



NOTICE TO RESIDENTS OF WESTERN EL DORADO COUNTY

Currently, most of the refuse generated in Western El Dorado County is disposed of in the Union Mine Landfill, located near the town of El Dorado. The Union Mine Landfill is allowed to accept only nonhazardous wastes. The following wastes cannot be disposed of in this landfill:

HOUSEHOLD CLEANERS

- o Drain Openers
- o Oven Cleaners
- o Wood and Metal Cleaners and Polishes

AUTOMOTIVE PRODUCTS

- o Used Motor Oil
- o Oil and Fuel Additives
- o Grease and Rust Solvents
- o Carburetor and Fuel Injection Cleaners
- o Air Conditioning Refrigerants
- o Starter Fluids

HOME MAINTENANCE AND IMPROVEMENT PRODUCTS

- o Paints
- o Paint Thinners
- o Paint Strippers and Removers
- o Adhesives

LAWN AND GARDEN PRODUCTS

- o Herbicides
- o Pesticides
- o Fungicides/Wood Preservatives

OTHER HAZARDOUS MATERIALS NOT SPECIFICALLY LISTED ARE ALSO PROHIBITED.

A more complete list of prohibited hazardous materials is available at the landfill or at the Environmental Management Department, 2850 Fairlane Court, Placerville.

Random load checks will be conducted at the landfill to help prevent illegal disposal of hazardous materials.

Residents of El Dorado County should call the Environmental Management Department at 916/621-5308 for information on how to dispose of household hazardous materials.

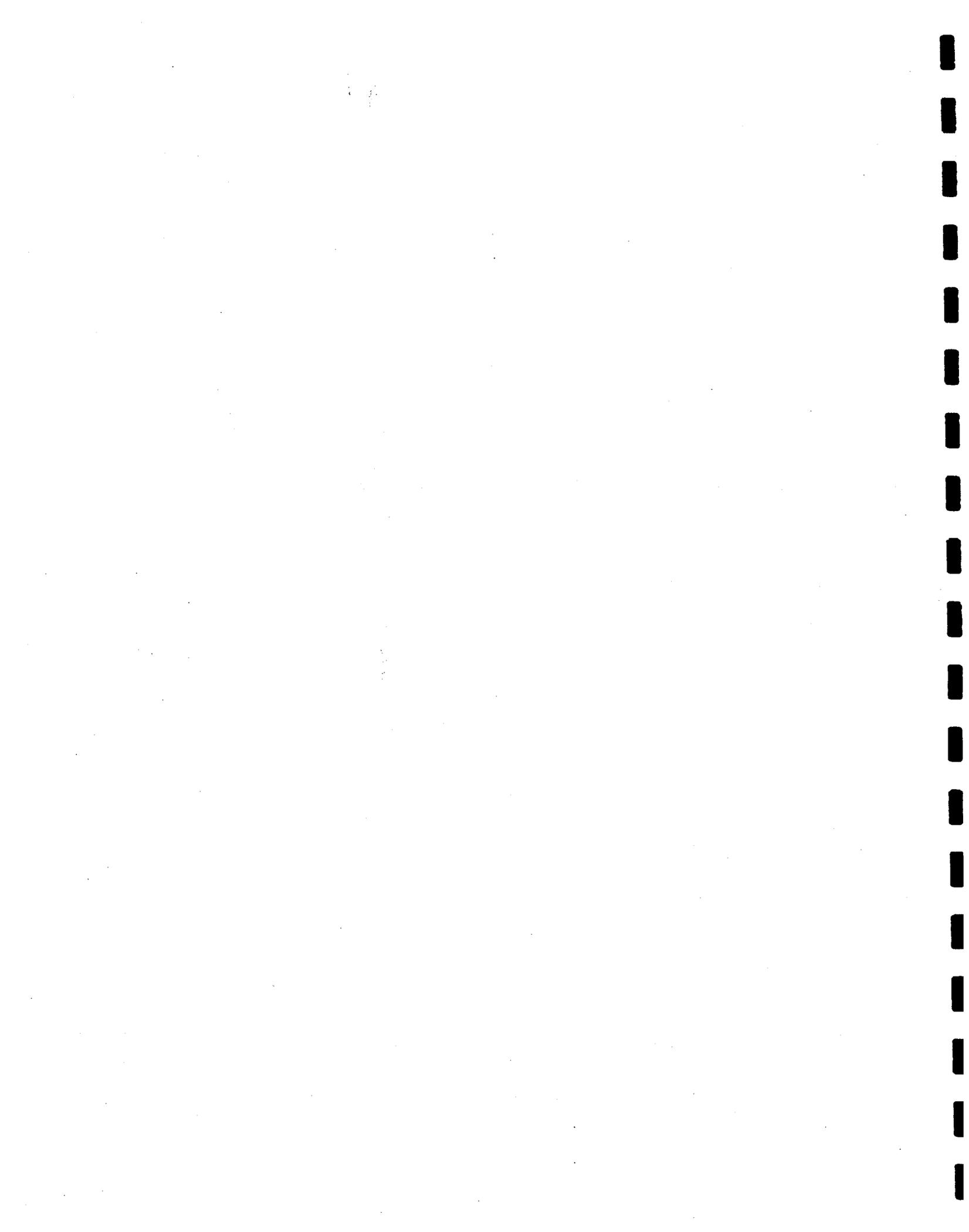
IT IS ILLEGAL TO DISPOSE OF HAZARDOUS MATERIALS
OTHER THAN AT APPROVED FACILITIES

**PLEASE HELP PROTECT OUR FRAGILE
ENVIRONMENT AND NATURAL RESOURCES**



A P P E N D I X E

M E M O R A N D A O F U N D E R S T A N D I N G



THE MEMORANDA OF UNDERSTANDING WILL BE INSERTED INTO
THIS DOCUMENT WHEN COMPLETED.

