Preliminary Draft
Household Hazardous Waste Element
City of Morgan Hill

Prepared for

City of Morgan Hill

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Prepared by

EMCON Associates
1921 Ringwood Avenue
San Jose, California 95131

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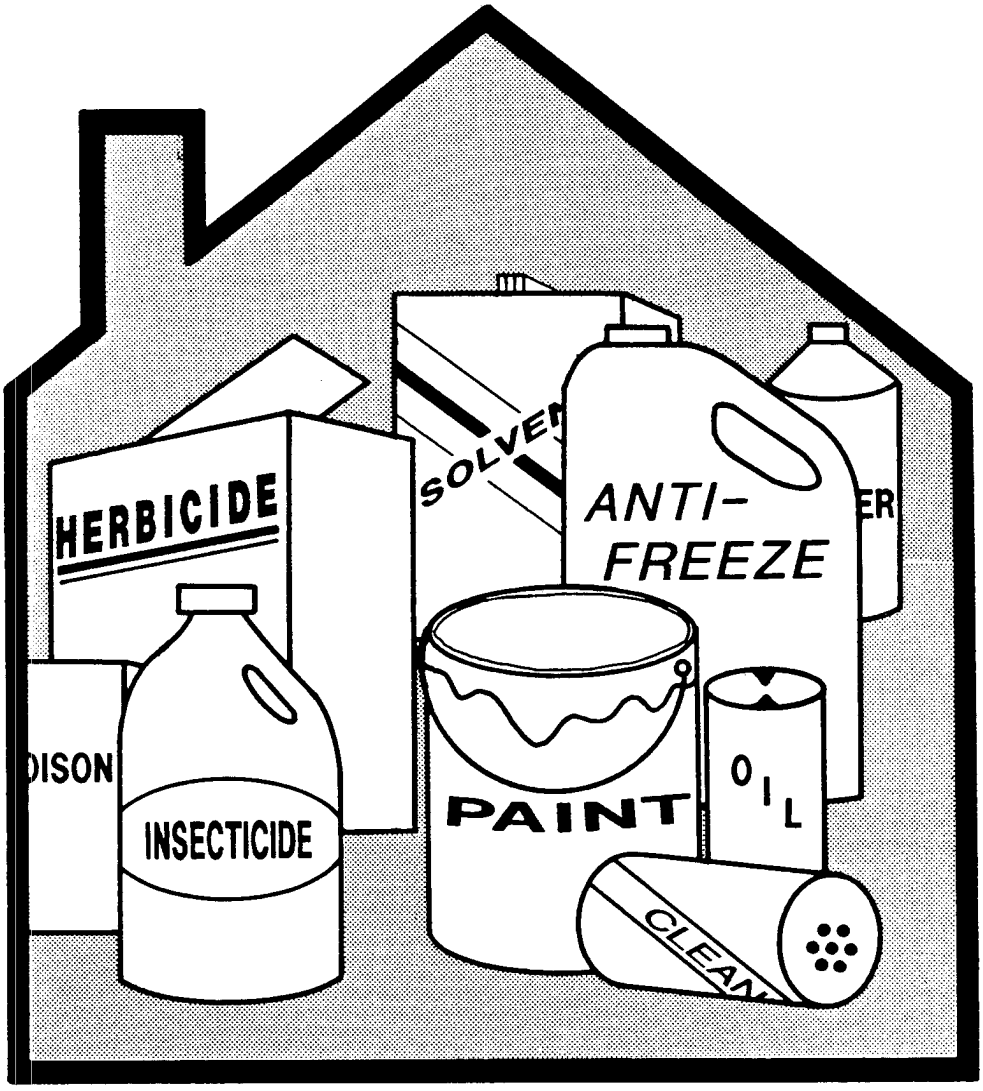

HOUSEHOLD HAZARDOUS WASTE

1 INTRODUCTION

Hazardous chemicals are prevalent in modern society, not only in the commercial and industrial sectors, but also in residential sectors as well. Hazardous substances can be found throughout the home, garage, garden, and hobby shop as constituents in such products as cleaners, paints, pesticides and glue. Once these hazardous products are no longer needed by the consumer, they become household hazardous waste (HHW)[1]. Improper disposal of HHW can pose a risk to human health and the environment and thus requires special handling.

A substance is classified as a hazardous waste by the Department of Health Services (DHS), California Code of Regulations (CCR) Title 22, if it demonstrates one of the following characteristics:

- **ignitability**—flammable (e.g., lighter fluid, spot and paint removers)
- **corrosivity**—eats away materials and can destroy human and animal tissue by chemical action (e.g., oven and toilet bowl cleaners)
- **reactivity**—creates an explosion or produces deadly vapors (e.g., bleach mixed with ammonia-based cleaners)
- **toxicity**—capable of producing injury, illness, or damage to human, domestic livestock, or wildlife through ingestion, inhalation, or absorption through any body surface (e.g. rat poison, cleaning fluids, pesticides, bleach)

Such products include toxic pesticides, caustic drain openers, ignitable paint thinners and other reactive or explosive materials. Table 1-1 lists hazardous materials commonly found around the home, garage, and garden.

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[1] A glossary of terms and acronyms is presented at the end of the document.

Until recently, programs to properly manage HHW were virtually non-existent, thereby resulting in wastes being disposed of in the garbage, down the sewer, into storm drains, or directly onto the ground. The improper disposal of hazardous substances can result in refuse workers being exposed to hazardous chemicals, equipment damage, contamination of ground water and surface water, and potential hazardous leachate migration from municipal solid waste landfills. Ultimately, improper disposal of HHW can lead to costly consequences.

Recognizing the dangers associated with the improper disposal of HHW, the City of Morgan Hill has worked cooperatively with its neighboring South County jurisdictions to properly manage HHW disposal and increase public awareness. As outlined in the following chapters, the City of Morgan Hill intends to continue and expand upon its efforts to properly manage the disposal of HHW.

Table 1-1
Hazardous Materials Commonly Found
Around the Home, Garage, and Garden

Household Products

- abrasive cleaners and scouring products (C,T)
- muriatic acid (C)
- ammonia-based cleaners (C,T)
- bleach (C,T)
- disinfectants (C,T)
- drain openers and cleaners (C,T)
- glass and window cleaners (C,T)
- oven cleaners (C,T)
- rug and upholstery cleaners (C,T)
- spot removers (F,T)
- toilet bowl cleaners (C,T)
- floor and furniture polish (T)
- aerosol sprays (R, F)
- moth repellents (T)
- rubbing alcohol (T, F)
- silver and brass polishes (T)
- hair colorings (T)
- nail acrylics (T, F)
- hair spray (F)
- pharmaceuticals (T)

Hobby/Workshop

- dry cell batteries (c)
- oil-based paints (F)
- oil-based woodstains (T,F)
- paint thinners (F)
- turpentine (F)
- acetone (F,T,R)
- varnish removers (T)
- paintbrush cleansers (T)
- contact cement (F,T)
- firearm ammunition (E)
- photographic chemicals (C,T)
- solvent-based glues (F,T)
- firearm-cleaning solvents (F, T)
- mineral spirits (F)

Garden and Garage Products

- chemical fertilizers (T)
- pool chemicals (C,T)
- fungicides (T)
- weed killers (T)
- insecticides (T)
- flea collars and sprays (T)
- tire cleansers (C)
- brake fluid (c)
- gas barbecues (F)
- kerosene (F)
- car waxes (F,T)
- antifreeze (F)
- brake fluid (F,T)
- used oil (T)
- propane cylinders (F)

Key to Symbols:

(C) corrosive
(F) flammable
(R) reactivity
(T) toxicity

Source:

1 *Household Products Guide, Handle with Extra Care,* BC Hazardous Waste Management Corp., 1990.

2 *Hazardous Household Products, A Guide to the Disposal of Hazardous Household Products and the Use of Non-Hazardous Alternatives,* Department of Health Services, Toxic Substances Control Program, OPGL-90-4.

2 GOALS AND OBJECTIVES

The City of Morgan Hill selected the following goals and objectives to properly manage HHW generated within the City. The objectives are organized according to the short-term (1991 to 1995) and medium-term planning periods (1996 to 2000).

2.1 Short-term Planning Period

- Provide education programs to promote the reduction of HHW entering the waste stream by encouraging
  - waste reduction, including the use of safer alternatives
  - proper use and disposal of hazardous products
  - proper storage and handling methods to protect the public's health and safety
- Conduct annual HHW collection events
- Reuse and recycle HHW to the extent possible

2.2 Medium-term Planning Period

- Continue education and public information programs implemented in the short-term planning period
- Continue to provide disposal alternatives for HHW generated in the City
- Recycle HHW to the extent possible

2.3 Targeted Materials

All household materials that have the characteristics of hazardous waste, (ignitability, toxicity, corrosivity, and reactivity) have been targeted for collection, except those excluded by the Department of Health Services.

Excluded household wastes include compressed gasses, explosives, and infectious or radioactive wastes.

3 EXISTING CONDITIONS DESCRIPTION

There are several HHW programs operating in Morgan Hill. The most significant of which is the annual HHW collection event that is co-sponsored by the City of Morgan Hill, the City of Gilroy and Santa Clara County. Additionally, through its franchise agreement, South Valley Refuse Disposal, Inc. (SVRD) provides the City of Morgan Hill with several HHW programs. These include a HHW recycling program for used oil and vehicle batteries, a load checking program, both located at SVRD's transfer station and landfill, and a public education program. The following section describes the annual HHW collection event, the recycling program and the load checking program. Information regarding the public education program is provided in Chapter 9, Public Education and Information.

The Waste Generation Study conducted by Cal Recovery in 1991 indicated that residents have improperly disposed of HHW at the landfill. Approximately 326 tons of hazardous waste from Morgan Hill improperly enters the landfill annually.

3.1 Annual HHW Collection Event

The annual HHW collection event collects HHW from residents in unincorporated south Santa Clara County, and the cities of Morgan Hill and Gilroy. The collection event is held at the San Martin Transfer Station just south of Morgan Hill. Assistance to the program is provided by SVRD.

The event is normally held in the spring for five hours on one day. Staff from the participating City's fire departments supervise the overall safety of the site and monitor the contractor's performance. Sorted wastes are lab packed or consolidated in the packing area according to waste type. Table 3-1 identifies the quantity and types of HHW collected at the 1990 event.

3.2 Recycling Program

SVRD operates a recycling program for used oil and vehicle batteries. From January through September 1991, approximately 12,000 gallons of used oil and 653 vehicle batteries were collected for recycling at the San Martin transfer station. Approximately half of the use oil and vehicle batteries collected at the transfer station was generated from Morgan Hill (the remaining waste is collected from the City of Gilroy and unincorporated south county areas).

3.3 Load Checking Program

SVRD operates a load checking program at the San Martin transfer station and the Pacheco Pass Landfill. The objective of the load-checking program is to discourage the improper disposal of prohibited waste at the landfill. Common examples of prohibited waste are paints, solvents, other flammables, pesticides, asbestos, polychlorinated biphenyls (PCBs), and inks. Quantities of HHW discovered through the load checking program have historically not been recorded.

Incoming loads are visually inspected for prohibited wastes. The gate attendant at the transfer station asks the public using the site whether they are disposing of prohibited materials. If prohibited materials are being disposed of, customers are requested to take the material home. Detailed prohibited waste inspections are also performed at the landfill. One day each week, a hazardous materials inspector sorts incoming loads brought to the landfill for prohibited waste. If the generator of the prohibited waste can not be determined, then proper disposal is arranged.

3.3 Status of Programs

None of the existing programs is anticipated to decrease in scope during the short- and medium-term planning periods.

Table 3-1

State of California — California Integrated Waste Management Board

HOUSEHOLD HAZARDOUS WASTE COLLECTION INFORMATION

CIWMB-303 (1/90)

1990 Event

Name of Local Agency: — Phone:

City of Morgan Hill

Address: — City: — County: — State: — Zip:

(Please Use Applicable Units of Measurement)

Waste Category	Gallons	Pounds	Number of Containers	Number of Drums (55 gal)	Management Method
A. Flammable					
1. Used Oil	1800				RC
2. Paints					
a. Latex					
b. Oil Base				9	BF
3. Solvents, thinners, and stains				3	T-1
4. Gasoline and oil (mixed)					
5. Aerosols (excluding pesticides/ herbicides)	5			2	T-1
6. Other	20			1	T-1
FLAMMABLE SUBTOTAL	1825			15	

Management Methods

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

Waste Category	Gallons	Pounds	Number of Containers	Number of Drums (55 gal)	Management Method
B. Pesticides					
Such as herbicides, insecticides, fungicides, etc.				13	T-1
PESTICIDE SUBTOTAL				13	
C. Corrosives					
1. Acids a. Oxidizing				3	T-1
b. Non-Oxidizing					
2. Alkaline				3	T-1
CORROSIVES SUBTOTAL				6	
D. Oxidizers					
Excluding acids	15			2	T-1
OXIDIZERS SUBTOTAL	15			2	
E. Miscellaneous					
1. Car Batteries			77		RC
2. Dry Cells					
3. Mercury					
4. Other				1	D
MISC. SUBTOTAL					
TOTAL WASTE COLLECTED	1840		77	37	

Waste Category	Gallons	Pounds	Number of Containers	Number of Drums (55 gal)	Management Method
B. Pesticides					
Such as herbicides, insecticides, fungicides, etc.				13	T-1
PESTICIDE SUBTOTAL				13	
C. Corrosives					
1. Acids a. Oxidizing				3	T-1
b. Non-Oxidizing					
2. Alkaline				3	T-1
CORROSIVES SUBTOTAL				6	
D. Oxidizers					
Excluding acids	15			2	T-1
OXIDIZERS SUBTOTAL	15			2	
E. Miscellaneous					
1. Car Batteries			77		RC
2. Dry Cells					
3. Mercury					
4. Other				1	D
MISC. SUBTOTAL					
TOTAL WASTE COLLECTED	1540		77	37	

State of California — California Integrated Waste Management Board

HOUSEHOLD HAZARDOUS WASTE COLLECTION INFORMATION

CIWMB-303 (1/90)

A-35010-1

1990 Event

Name of Local Agency: Phone:

City of Morgan Hill

Address: City: County: State: Zip:

(Please Use Applicable Units of Measurement)

Waste Category	Gallons	Pounds	Number of Containers	Number of Drums (55 gal)	Management Method
A. Flammable					
1. Used Oil	1800				Rc
2. Paints					
a. Latex					
b. Oil Base				9	BF
3. Solvents, thinners, and stains				3	T-1
4. Gasoline and oil (mixed)					
5. Aerosols (excluding pesticides/ herbicides)	5			2	T-1
6. Other	20			1	T-1
FLAMMABLE SUBTOTAL	1805			15	

Management Methods

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

4 EVALUATION APPROACH

4.1 Evaluation Criteria

The *Planning Guidelines and Procedures for Preparing and Revising Countywide Integrated Waste Management Plans, Section 18733.3, Chapter 9, Division 7, Title 14, California Code of Regulations,* require certain criteria to be used in evaluating alternative programs that are identified in the HHW element. These criteria reflect a broad range of technical, economic, and socio-political considerations. The evaluation criteria are described below in light of their application to HHW management programs.

4.1.1 Effectiveness

Effectiveness is the estimated percentage of the total HHW waste stream that the alternative reduces or diverts waste. This is a measure of the alternative's diversion effectiveness.

High: effective

Medium: negligible effect

Low: ineffective

4.1.2 Hazard[1]

Hazard refers to the potential hazards that are created by the alternative. Hazards can include health risks, injury, fire, or others identified for the alternative. A high rating corresponds to few or no potential hazards. This criterion is rated as follows:

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[1] Note that several of the criteria -- hazard, institutional barriers, facility requirements, and estimated costs -- are inherently negative. A rating of high for these criteria corresponds to few or no impacts associated with these potential problems.

High: There are few or no potential hazards. All potential hazards can be controlled.

Medium: There are some potential hazards that, for the most part, can be controlled.

Low: Potential hazards exist that are not completely understood or controllable, or the alternative increases the potential hazards.

4.1.3 Ability to Accommodate Change

Ability to Accommodate Change refers to the alternative's ability to accommodate changing economic, technological, and social conditions. This criterion is rated as follows:

High: The alternative is anticipated to be readily adaptable in meeting changing conditions. Significant changes in the program are not anticipated.

Medium: The alternative is anticipated to demonstrate a moderate ability to respond to changing conditions. Significant changes in the program may be required.

Low: The alternative has a limited ability to respond to changing conditions. Limitations may include inflexible or unpredictable markets for diverted materials, existing contracts with waste management companies, operational limitations, unwillingness of the public to participate in programs, or others identified for the alternative.

4.1.4 Implementation Period

Implementation Period refers to the potential for implementing the alternative in the short-term or medium-term planning periods. This criterion is rated as follows:

High: Implementation of the alternative is anticipated to be completed by 1995.

Medium: Implementation of the alternative is anticipated to be completed by 2000.

Low: Implementation of the alternative could not be completed until after 2000.

4.1.5 Facility Requirements

Facility Requirements refers to the need for expanding an existing facility or building a new facility to support the implementation of the alternative. This criterion is rated as follows:

High: The alternative can be easily integrated into an existing facility.

Medium: An existing facility must be expanded or altered to accommodate implementation of the alternative.

Low: A new facility must be developed to accommodate implementation of the alternative.

4.1.6 Consistency with Local Plans and Policies

Consistency with Local Plans and Policies reflects the alternative's consistency with local conditions, including local plans, policies, or ordinances. This criterion is rated as follows:

High: There are no existing local plans, policies, or ordinances that would impede the implementation of the alternative.

Medium: The alternative would require minor changes to existing local plans, policies, or ordinances for implementation.

Low: The alternative would require major changes to existing local plans, policies, or ordinances for implementation.

4.1.7 Institutional Barriers

Institutional Barriers refers to the potential for institutional barriers (such as long-term franchise agreements or other contracts), to impact the implementation of the alternative. This criterion is rated as follows:

High:	There are no existing institutional barriers to the alternative.
Medium:	The alternative is impacted by existing institutional barriers over which the jurisdiction maintains some control.
Low:	The alternative is impacted by existing institutional barriers that are not under the control of the jurisdiction.

4.1.8 Estimated Cost

Estimated Cost reflects the estimated order-of-magnitude implementation costs of the alternative, including capital costs and operating costs. A high rating corresponds to a relatively low order-of-magnitude cost. This criterion is rated as follows:

High:	$0-50,000
Medium:	$50,000-200,000
Low:	> $200,000

4.1.9 End Uses

End Uses reflects the availability of markets for the diverted materials. This criterion is rated as follows:

High:	Available end uses are relatively stable.
Medium:	End uses are available, but are subject to moderate fluctuations. The potential for the development of short-term markets may exist.
Low:	End uses are currently unavailable or unreliable, though the potential for the development of long-term or medium-term markets may exist.

5 EVALUATION OF ALTERNATIVES

This section presents an evaluation of alternative HHW programs that can be implemented in the City to meet HHW objectives. The following six alternatives were evaluated based on the evaluation approach presented in Section 4. For each evaluation criterion, a rating of high, medium, or low is assigned, and potential issues are discussed. The results of the evaluation are summarized in Table 5-1.

As structured by the regulations governing AB 939, some of the criteria by which the alternatives are required to be evaluated are positive in tone (e.g. consistency with local policies) while others are inherently negative (e.g., hazard). A high rating for each criterion implies a positive rating; and consequently a high rating for a negative criterion corresponds to few or no impacts associated with this potential problem. For example, a high rating for the hazard criterion means that there are no hazards for the alternative.

Many of these activities are complementary and depend significantly on the implementation of other alternatives or programs. The alternatives are evaluated for their effectiveness and impact on the entire HHW management system, including public education, collection, recycling, and monitoring, and not as independent alternatives. The alternatives evaluated are

- Alternative 1 - Periodic collection
- Alternative 2 - Permanent collection facility
- Alternative 3 - Mobile collection facility
- Alternative 4 - Curbside collection
- Alternative 5 - Load-checking program
- Alternative 6 - Recycling program

5.1 Alternative 1 - Periodic Collection Program

A periodic collection program is a collection event that operates at one or more locations for a short period of time, usually one or two days. A temporary collection program is staffed by trained personnel who collect, sort, and pack HHW into drums. Temporary collection programs can be conducted on an annual basis or as often as once a month. The City of Morgan Hill current co-sponsors an annual HHW collection event with the City of Gilroy and Santa Clara County.

Effectiveness. Medium. Periodic collection programs are moderately effective at collecting the HHW generated by residents.

Hazard. Medium[1]. Potential public health risks and safety hazards associated with periodic collection include spills, fires, leaks, or explosions resulting from improper collection, storage, handling, or transport of hazardous materials. Proper design, equipment, and health and safety training, however, minimize any potential hazards.

Ability to accommodate change. Medium. Collection events are moderately adaptable to changing conditions.

Implementation period. High. Collection events can be implemented during the short-term planning period.

Facility requirements. High[2]. Collection events do not require expansion or development of facilities.

Consistency with local plans and policies. High. Providing periodic collections for residents to deliver HHW is consistent with local policies.

Institutional barriers. High[3]. Institutional barriers are anticipated to have minimal impact on this alternative.

Estimated cost. Medium[4]. The cost of this annual HHW collection event is shared by the sponsoring agencies. The City of Morgan Hill's annual budget for this is $10,000. Costs per event generally vary depending on the types of materials collected, the number of drums collected, and

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1 Refers to relative rating with respect to this criterion.

2 Note that several of the criteria -- hazard, facility requirements, institutional barriers, and estimated cost are inherently negative. A rating of high for these criteria corresponds to few or no impacts associated with these potential problems.

3 Ibid.

4 Ibid.

participation rates. A survey conducted by the CIWMB of HHW collection programs implemented in California indicated that the costs for a single periodic collection event range from $12,500 (Healdsburg) to $384,783 (Los Angeles).

End uses. Medium. Collection events divert latex paint, oil, and batteries from the waste stream through recycling. Nonrecyclable HHW collected through the events is either properly disposed of at a permitted hazardous waste disposal facility or incinerated.

5.2 Alternative 2 - Permanent Collection Facility

A permanent HHW collection facility accepts HHW delivered by residents at a fixed location and is generally open year round. Permanent facilities can be housed in either a prefabricated building or a permanent building and are usually sited to allow access from major population centers. A permanent facility can operate a program for exchanging materials to reduce the quantity of HHW requiring disposal. The DHS encourages the exchange of materials as long as certain safeguards are maintained.

Effectiveness. High. Permanent collection facilities are effective at reducing the amount of HHW that is disposed of in sanitary landfills by offering residents a collection facility available year round to deposit HHW.

Hazard. Medium-High. Potential public health risks and safety hazards associated with HHW collection include spills, fires, leaks, or explosions resulting from improper collection, storage, handling, or transport of hazardous materials. Proper design, equipment, and health and safety training, however, minimize any potential hazards. A permanent facility provides the safest means of collecting and properly disposing of HHW.

Ability to accommodate change. High. Permanent collection facilities can accommodate changing conditions by increasing or decreasing the days of operation, as needed. A permanent collection facility can process participants more efficiently than periodic collection events, because of dedicated staffing and operational characteristics of the facility. Recycling and waste exchange opportunities are also enhanced from increased storage time and experienced staff.

Implementation period. Medium. A permanent collection facility would likely not be implemented until the medium-term planning period due to budget and staffing constraints.

Facility requirements. Low. This alternative requires the development of a HHW collection and storage facility. A HHW facility must meet specific state and federal safety and operating standards. A facility should have separate storage bays to prevent spills or leaks from incompatible wastes from mixing, explosion proofing, proper containment, sufficient ventilation, and adequate emergency response and safety equipment. The permanent facility should be situated on an impervious surface and fenced for security. An area for analyzing unknowns is needed, in addition to safety and emergency equipment.

Consistency with local plans and policies. High. A multi-jurisdictionally sponsored permanent facility is consistent with local policies, plans, and ordinances.

Institutional barriers. High. Institutional barriers are anticipated to have little impact on this alternative.

Estimated cost. High. The estimated costs for a permanent collection facility vary depending upon the type of facility constructed, quantities collected, participation rates, and frequency of operation. Many communities are reducing the capital costs associated with a permanent facility by retrofitting storage containers or purchasing prefabricated storage lockers that range in cost from $17,00 to $45,000. To reduce hazardous waste disposal fees, items such as paint, oil, and automotive batteries can be recycled and a waste exchange program implemented.

End uses. High. Reuse of unopened, reusable products can be promoted through waste exchanges or organized referrals. Nonrecyclable HHW can be disposed of properly in a hazardous waste disposal facility or incinerated. Commonly recycled HHW includes latex paint, used oil, lead-acid batteries, and used antifreeze.

5.3 Alternative 3 - Mobile Collection Facility

A mobile collection facility is a portable facility that is set up at different locations within a community to collect HHW. A mobile collection program may consist of a modified trailer and support unit containing an electric generator, compressor, and water system; a fire response system; and a HazCat lab. A mobile unit usually includes a bathroom, emergency shower, and first aid station. A mobile facility should be capable of being dismantled quickly, once a collection event is completed. A mobile waste collection program is usually implemented City-wide. Residents in subur-

ban communities and unincorporated areas should be assured that a mobile collection unit would be within a 15- to 20-minute drive from their homes sometime during the year.

Effectiveness. High. A mobile collection facility is effective at collecting HHW generated by residents; in a dispersed area this alternative is very effective at providing convenient HHW disposal access to residents.

Hazard. Medium. Potential public health risks and safety hazards associated with mobile collection include spills, fires, leaks, or explosions resulting from improper collection, storage, handling, or transport of hazardous materials. Proper design, equipment, and health and safety training, however, minimize any potential hazards.

Ability to accommodate change. Medium. Several problems associated with mobile collection facilities limit their effectiveness in the City. Because the location is constantly changing, finding sites with adequate access, convenience, and safety is difficult. The public must be informed in advance of the location and time of events, so that participation will be at successful levels.

Implementation period. High. Approximately 1 to 2 years is required to operate a mobile collection facility.

Facility requirements. Medium. The mobile collection program requires a modified trailer and support unit. When set up for operation, the collection site will cover approximately 5,000 square feet of paved area with canopies over the work area. The collection site should be secured at night with a portable fence. Potential collection sites can be a church parking lot, fire department parking lot, or school parking lot.

Consistency with local plans and policies. High. A multi-jurisdictionally sponsored mobile collection program would be consistent with local policies.

Institutional barriers. Medium. Liability issues associated with entering into agreements to use private properties for collection activities may pose institutional barriers to mobile collection programs.

Estimated cost. Low. Based on available data, a mobile facility would cost approximately $300,000 to $500,000 per year including waste management, personnel, public education, and equipment. The costs for a

mobile collection program appear to be higher than for a periodic collection program or permanent facility.

End uses. Medium. A mobile collection program can divert latex paint, oil, and batteries from the waste stream through recycling. Nonrecyclable HHW collected through the program are properly disposed of at a permitted hazardous waste disposal facility or incinerated.

5.4 Alternative 4 - Curbside Collection Program

An HHW curbside program offers residents an opportunity to place HHW at the curb for collection. Collection of recyclable HHW can be combined with refuse pickup or curbside recycling programs. Pickup of HHW must be conducted by a registered hazardous waste hauler, using licensed hazardous waste transport vehicles that comply with Department of Transportation (DOT) regulations. Vehicles used for this type of program are specially equipped to handle hazardous waste and require a staff trained in hazardous waste identification.

Once collected, the load is transferred to an approved treatment, storage, or disposal (TSD) facility or transported directly to a permitted hazardous waste disposal facility.

Effectiveness. High. A curbside collection program would help to reduce the volume and weight of HHW that is disposed of improperly in sanitary landfills.

Hazard. Low. Potential public health risks and safety hazards associated with curbside collection include spills, fires, leaks, or explosions resulting from improper collection, storage, handling, or transport of hazardous materials. Proper design, equipment, and health and safety training, however, minimize any potential hazards.

Another problem with curbside collection is the safe transport and handling of the materials because of the limited time and space constraints and accidental exposure of children or pets to the waste that is placed on the curbside.

Ability to accommodate change. Medium. Curbside collection programs for HHW are moderately responsive to changing social conditions. Certain materials such as oil and antifreeze can be integrated into curbside collection programs for recyclables relatively easily. To collect most

HHW, however, a permitted hazardous waste transport hauler using a licensed hazardous waste transport vehicle is required.

Implementation period. Medium-High. A curbside collection program can be implemented during the short-term planning period, if permitted hazardous waste management firms are contracted to routinely accept HHW using their existing hazardous waste facility permits, following notification by the DHS.

Facility requirements. Medium. Curbside collection events require trucks equipped to transport, handle, sort, and store hazardous materials. Curbside containers to store materials would also need to be provided to participants. A TSD facility may be required to store the HHW collected.

Consistency with local plans and policies. Medium. Because of the high costs associated with HHW curbside collection, it is not likely that the City would support a curbside collection program for all types of hazardous waste. However, recyclable HHW such as used oil can be cost-effectively integrated into curbside collection programs and would be consistent with local policies.

Institutional barriers. Low. The liabilities of a curbside collection program are significant, including potential hazards associated with the collection and transportation of HHW. The public may also be opposed to leaving household hazardous waste at the curbside, since children and pets could be at risk.

Estimated Costs. Low. The estimated costs for a curbside collection program would be significantly higher than for other collection alternatives. Additional costs would be incurred due to stringent collection and transportation requirements.

End uses. Medium. A curbside collection program can divert latex paint, oil, and batteries from the waste stream through recycling. Nonrecyclable HHW collected through the program can be properly disposed of at a permitted hazardous waste disposal facility or incinerated.

5.5 Alternative 6 - Load-Checking Program

SVRD operates a load checking program at the San Martin transfer station and the Pacheco Pass Landfill where wastes from the City are received. The purpose of a load checking program is to detect and deter attempts to dispose of prohibited waste. It involves a visual inspection for hazardous

waste at the entrance to the transfer station and landfill. If prohibited waste is identified, the generator is notified and becomes responsible for removing the waste. If the generator cannot be found, the waste is removed and disposed of properly.

Effectiveness. Low. A load checking program will primarily help to reduce the amount of prohibited materials disposed of in solid waste landfills. It will also help to educate generators of hazardous waste about the proper disposal alternatives available. Once generators realize the limited disposal alternatives for hazardous waste, they may consider ways they can reduce the amount of waste they generate.

Hazard. Low. The potential hazards of a load checking program include the risk from exposure to the prohibited waste while inspecting or handling the waste.

Ability to accommodate change. Medium. Load checking programs can be adjusted to changing conditions.

Implementation period. High. The load checking program will be expanded during the short-term planning period.

Facility requirements. High. Hazardous wastes discovered during the load checking program will be temporarily stored on site and ultimately disposed of at a hazardous waste disposal facility.

Consistency with local plans and policies. High. The load-checking program is consistent with the City's policy of keeping prohibited wastes from entering sanitary landfills.

Institutional barriers. High. Institutional barriers have a minimal impact on this alternative. The State Water Resources Control Board (SWRCB) requires landfills to operate hazardous waste load-checking programs (Section 2523, Title 23, California Code of Regulations [CCR]). The DHS and CIWMB require solid waste facilities to follow certain procedures regarding their load-checking programs. The DHS requires a solid waste facility with a hazardous waste load-checking program to obtain an identification number as a hazardous waste generator. If hazardous waste will be stored for less than 90 days, no hazardous waste permit is needed, if the facility complies with state regulations. If hazardous waste will be stored for more than 90 days, however, the solid waste facility must apply to the DHS for a hazardous waste facility permit or variance.

Estimated cost. High. According to information provided by SVRD, the total load checking program costs are approximately $49,000 per year, including staffing, and related transport and disposal costs.

End uses. Low. HHW collected through the program are properly disposed of at a permitted hazardous waste disposal facility or incinerated.

5.6 Alternative 6 - Recycling and Reuse Program

A recycling and reuse program helps reduce the high costs of disposing of hazardous materials that have the potential to be recycled. SVRD operates a recycling drop-off program for used oil and vehicle batteries. The HHW recycling program may be expanded at the transfer station to include latex paint in the future. Used oil will be collected in a curbside collection program, should the City approve the existing planned development of such a program. By recycling HHW, the City can help preserve resources and reduce the high cost of properly disposing of HHW.

Effectiveness. High. Recycling and reuse programs are extremely effective at reducing the volume and weight of HHW generated.

Hazard. Medium. Recycling HHW produces minimal hazards. Some hazards are associated with latex paint; older latex paint may contain mercury or lead. To reduce potential hazards, older latex paint, improperly labeled paint, paint that is not in its original container, and possibly contaminated paint should be disposed of instead of recycled.

Ability to accommodate change. High. Recycling and reuse programs can adjust to changing conditions.

Implementation period. High. A recycling program for used oil and vehicle batteries is presently in operation. SVRD may expand the existing HHW recycling program to include latex paint during the short-term planning period.

Facility requirements. High. Recycling operations can be conducted at existing facilities such as the San Martin Transfer Station.

Consistency with local plans and policies. High. Recycling and reuse of HHW is consistent with the City's policy of recycling and providing collection options for HHW.

Institutional barriers. High. Institutional barriers are anticipated to have little impact on this alternative. Effective January 1, 1991, pursuant to

AB 2597, HHW collection agencies will no longer need a hazardous waste permit if materials accepted are limited to (1) latex paint, (2) used oil, (3) antifreeze, (4) spent lead acid batteries, and (5) nickel-cadmium, alkaline, carbon-zinc, and other small batteries.

Section 25250.11(a), Health & Safety Code, exempts from its hazardous waste permit requirements "any person who receives used oil from consumers or other used oil generator," as long as no more than 20 gallons of used oil are received at a time, and containers hold no more than 5 gallons each. The DHS will allow a facility or collection event to bulk latex paint if it is properly authorized to accept the paint as one of its household hazardous wastes.

Government Code Section 66798.9 provides immunity for local agencies operating HHW programs unless the agencies act negligently. Additional immunity from state liability is provided in Health & Safety Code, Section 25366.5, for local governments or their contractors who are running HHW facilities and events.

Estimated cost. High. Recycling and reusing HHW reduces the costs of disposal for HHW collected during collection events, at recycling centers, or at permanent facilities. No specific costs are associated with a recycling program because it can be implemented in conjunction with these other collection programs.

End uses. High. Reuse of unopened reusable products can be promoted via waste exchanges or unorganized referrals, common use of recyclable HHW include the following:

- Latex paint can be collected, sorted, consolidated, blended, repackaged, and sold or given to local public agencies and nonprofit groups. It is commonly used to cover graffiti. It can also be sorted, consolidated, and sent to a paint company, which can mix it with its own waste paint and manufacture new paint.
- Used oil is a valuable resource. Recycling used oil saves energy and natural resources. Used oil can be refined into lubricating oil, reused as motor oil, or reprocessed and used as fuel in industrial burners and boilers. The Environmental Protection Agency estimates that only

1 gallon of used oil is needed to make 2.5 quarts of lubricating oil, compared to 42 gallons of raw crude oil.

- Lead-acid batteries. According to the CIWMB, 70 percent of spent lead-acid batteries are recycled. "After the lead is separated from the non-metallic components of the battery, it is then smelted to produce soft lead and lead alloys. Most of these lead products are used to make new lead acid batteries. The non-metallic materials include sulfuric acid, which is neutralized and released into the sewer; the plastic shell is reclaimed; and other non-recyclable, non-hazardous material is disposed of." (*Household Hazardous Waste, Lead-Acid Batteries,* CIWMB, September 1990).

- Antifreeze. Used antifreeze can be recycled for use by the mining and glycol industries. Antifreeze is sprayed on coal to keep it from sticking together. In addition, antifreeze can be used for airplane de-icing solution, cement grinding, and brake fluid. (*Household Hazardous Waste, Antifreeze,* CIWMB, September 1990).

Table 5-1

Summary of Alternatives Evaluation

Criteria	Program Alternatives					
	Collection Events	Permanent Facility	Mobile Collection	Curbside Collection	Load Checking Program	Recycling Program
Effectiveness	Medium	High	High	High	Low	High
Hazard	Medium	Medium-High	Medium	Low	Low	Medium
Ability to accomodate change	Medium	High	Medium	Medium	Medium	High
Implementation Period	High	Medium	High	Medium-High	High	High
Facility requirements	High	Low	Medium	Medium	High	High
Consistency with local policies	High	High	High	Medium	High	High
Institutional barriers	High	High	Medium	Low	High	High
Estimated Cost	Medium	High	Low	Medium	High	High
End Uses	Medium	High	Medium	Medium	Low	High

6 PROGRAM SELECTION

6.1 Alternatives Selected

In the previous section, alternative HHW programs were presented. The City of Morgan Hill selected various programs that are presented below. Several factors were taken into consideration during the program selection process: (1) the degree to which each program is appropriate to the City of Morgan Hill, and (2) the degree to which the programs complement each other and form a coherent, comprehensive, and cost-effective package.

Programs selected for HHW management are organized according to the short-term and medium-term planning periods.

6.1.1 Short-term Planning Period

The programs selected to manage HHW during the short-term planning period include:

- periodic collection events
- recycling program
- load-checking program

Periodic collection events. The City will continue to sponsor its annual HHW collection events during the short-term planning period. Additionally, the City will evaluate the feasibility of participating in the County-sponsored mobile collection/permanent collection site program in order to provide residents with additional HHW collection opportunities.

Recycling program. SVRD currently operates a recycling program for used oil and vehicle batteries. The recycling program will likely be expanded to include latex paint during the short-term planning period.

Load Checking Program. The San Martin Transfer Station and the Pacheco Pass Landfill currently operate load checking programs. A load checking program detects prohibited wastes from entering the landfill. The State Water Resources Control Board requires landfills to operate hazardous waste load-checking programs (Section 2523, Title 23, CCR).

6.1.2 Medium-term Planning Period

The following program was selected to properly manage HHW in the medium-term planning period.

Permanent HHW collection facility. A permanent facility will offer the public a convenient, fixed location to deposit HHW. A permanent facility will also reduce the potential liability to the City of Morgan Hill from the improper disposal of HHW in the landfill.

The collection facility will sponsor a program for exchanging HHW materials. The DHS encourages the exchange of materials as a means of waste reduction. The permanent facility will also collect recyclable HHW.

6.2 Types and Quantities of HHW

The HHW programs selected are designed to increase the collection of HHW and the public's awareness of the hazards of HHW. The program's success in collecting HHW will depend on the education and public information programs and the public's behavior changes.

The CIWMB surveyed HHW programs in 1989. The survey indicated that typically paint, household and lead acid batteries, and used oil comprise approximately 68.5 percent of the HHW collected during collection programs. The remaining 31.5 percent consists of flammables, pesticides, corrosives, and other HHW. The City expects to collect about the same proportions of HHW. At present, determining the quantities of HHW that will be collected is difficult. The HHW program will, however, be designed to accept varying quantities of HHW, should the quantities anticipated to be collected increase.

6.3 Recycling and Reuse Efforts

A recycling program for used oil and vehicle batteries is currently operated by SVRD. The program will likely be expanded to include latex paint during the short-term planning period. In addition, used oil will be col-

lected in a planned residential curbside recycling program, should the City approve such a program.

6.4 Multijurisdictional HHW Efforts

The County of Santa Clara is developing a Countywide HHW program that provides mobile services and a permanent site for collection of HHW. The City will evaluate the costs and benefits of participating in this program after it becomes operational.

6.5 Facility Needed for Implementation

The HHW program will require a permanent HHW facility in the medium-term planning period to store hazardous materials. The City of Morgan Hill may participate in the County-operated HHW program or develop a multi-jurisdictional program with the City of Gilroy, located at the San Martin Transfer Station.

6.6 Handling and Disposal Methods

Proper handling and disposal methods are guided by state and federal regulations. The HHW program will be staffed by professionals certified to handle hazardous materials. Licensed hazardous waste haulers will be contracted to remove the collected materials.

7 PROGRAM IMPLEMENTATION

The following section describes the tasks necessary to implement the selected programs.

7.1 Government Agencies Responsible for Implementation

The City of Morgan Hill Community Development Department, working in conjunction with the Morgan Hill Fire Department, will be responsible for managing HHW programs.

7.2 Tasks Necessary to Implement Program

The selected HHW programs will require the following implementation tasks.

Periodic Collection Events

- contract for operation, transportation, recycling, and disposal
- develop program schedule and select sites
- advertise event
- hold event
- develop recordkeeping

Recycling Program

- purchase equipment and supplies for latex paint collection
- publicize program

Permanent HHW Facility

- evaluate alternative sites and select site locations

- prepare permitting documents and CEQA documentation
- identify funding sources
- identify entity operating facility
- identify specific wastes to be handled
- estimate number of drums to be handled each month
- develop design criteria for permanent facility, including sizing, containment features, storage needs, fire safety requirements, ventilation and heating needs, laboratory and office space needs
- obtain equipment and supplies
- contract for waste transportation, recycling, and disposal services
- develop record keeping system

7.3 Implementation Schedule

Collection Events	Ongoing Program
Recycling Program	Existing Program
Permanent Collection Facility	Beginning Mid 1996

7.4 Implementation Costs

Table 10-1 summarizes the costs for each selected program.

8 EDUCATION AND PUBLIC INFORMATION

Education and public information are separate functions that work together towards a common goal. Education is an ongoing activity that explains, through knowledge and awareness, *why* waste reduction programs are necessary. Public information is a method of letting the public know *how* to effectively participate in programs. Both ongoing education and public information are essential to the successful implementation of the HHWE.

A community could fall short of its goals if it merely selects programs without providing methods of informing and educating the people who generate the waste. Changing the behavior of the community as a whole is an essential component of these programs.

This section presents education and public information objectives and identifies existing and proposed education activities for achieving those objectives.

8.1 Objectives

The City of Morgan Hill selected the following education and public information objective to augment the selected HHW management programs. The objective applies to both the short and medium term planning periods (1991-2000).

8.1.1 Objective: Promote Source Reduction, Safer Use, and Proper Disposal of HHW

Source Reduction. Source reduction information will be distributed to residents regarding the availability of non-hazardous substitutes.

Proper use and storage. Information will be distributed to residents about the hazardous nature of some products and methods for proper use and storage of such products.

Proper disposal. Information will be distributed about the environmental hazards associated with improper disposal of HHW.

8.2 Existing Education and Public Information Programs

The following is a summary of HHW public education programs used in the City to promote proper use and disposal of hazardous products.

- **Load Checking Program Notices** - SVRD sent a notice to its customers informing them that a load checking program is in operation at the landfill. The notice also list common types of prohibited materials, and provides a phone number to call for additional information.
- **Source Reduction Pamphlets** - A brochure developed by the Morgan Hill Fire Department, Office of Emergency Services, entitled *Household Hazardous Waste,* is being distributed to residents participating in annual HHW collection events. The brochure provides information on safer substitute products, and household cleaning tips that can reduce the use of hazardous products in the home. SVRD distributes a brochure at the transfer station entitled *Making the Switch, Alternatives to Using Toxic Chemicals in the Home,* developed by Golden Empire Health Planning Center in cooperation with the Sacramento League of Women Voters.
- **HHW poster** - Self-haulers at the transfer station can obtain a poster featuring "Hare E. Hazard" who provides tips on proper use and disposal, safer substitute products, and phone numbers to call for additional information.

8.3 Program Description

Education and public information programs proposed for City of Morgan Hill, include increasing public awareness about the HHW management services available. Additional educational materials are currently available from several agencies and organizations, including the DHS, the CIWMB, the League of Women Voters, and local governments throughout the United States.

SVRD will continue to provide residents in the City with educational materials on HHW issues. The following additional public education programs will be implemented to augment the existing programs.

- Display HHW information on public bulletin boards to provide information to the general public
- prepare articles and news releases for the local newspaper on issues related to HHW
- integrate a hazardous waste curriculum into school programs
- provide speakers on toxic issues to community groups
- develop and emphasize reuse options (e.g. paint to community groups, housing groups, neighbors, and schools)

8.4 Program Implementation

8.4.1 Community Audiences to be Targeted

The education and public information program will target the following groups:

- residents in the City of Morgan Hill
- self-haulers to the transfer station and landfill
- schools

8.4.2 Government Agencies Responsible for Implementation

The City of Morgan Hill Community Development Department will be responsible for monitoring the effectiveness of public education efforts.

8.4.3 Implementation Tasks

Public education.

• Advertise HHW programs	1991, ongoing
• Participate in ongoing HHW public education efforts	1991, ongoing

- Disseminate source reduction and product-specific information pamphlets — 1991, ongoing

8.4.4 Costs and Sources of Funding

Funding sources for public education programs are discussed in Chapter 10.

8.5 Monitoring and Evaluation

8.5.1 Evaluation Methods

The methods described below will be used to measure achievement of the education and public information objectives.

Objective - Promote Source Reduction, Safer Use, and Proper Disposal of HHW

- Residents will be surveyed to determine whether their level of awareness has increased regarding safe use and disposal practices. Results of the survey will be included in the annual reports.
- Data from program records will be reviewed to determine the adequacy of HHW program advertising efforts.

8.5.2 Written Criteria for Evaluating Program Effectiveness

The City of Morgan Hill will prepare annual reports describing the findings of the evaluation outlined above. Education and public information programs will be evaluated to determine changes in purchasing habits, level of awareness of proper use and disposal, level and distribution of participation, and changes in availability of non-hazardous products.

8.5.3 Agencies Responsible for Monitoring, Evaluation, and Reporting

The City of Morgan Hill Community Development Department will be responsible for monitoring, evaluation, and reporting.

8.5.4 Funding Requirements and Sources for Monitoring and Evaluation

See Chapter 10, Funding, for a discussion of monitoring and evaluation funding requirements.

8.5.5 Contingency Measures

Should annual evaluations indicate a shortfall in attainment of the education and public information objectives, the following measures may be implemented:

- Analyze existing programs for obstacles to successful implementation
- Increase or improve education and advertising efforts
- Increase funding and staff
- Modify objectives
- Increase frequency of program monitoring and review

8.5.6 Program Monitoring and Reporting Schedule

Annual reports will be written and distributed at the end of each 12 months of operation. It is anticipated that the first annual report will be written in 1992.

9 MONITORING AND EVALUATION

9.1 Methods to Quantify and Monitor Achievement of Objectives

To effectively monitor the achievement of the objectives, several tasks should be performed, these are summarized below.

Objective: Provide education programs to promote the reduction of HHW entering the waste stream

- Survey collection program participants to determine if their buying practices have changed towards the purchase of safer alternatives
- Survey residents to determine if they are aware of the proper use of and disposal requirements for hazardous products

Objective: Provide disposal alternatives

- Monitor the implementation of the selected programs against the implementation schedule
- Determine the funding needed to ensure continued operation of the program
- Prepare annual summary reports and evaluations of the status of the programs

Objective: Establish a waste exchange program to reduce the amount of HHW requiring disposal

- Provide an annual report on the types and quantities of HHW that is reused through a waste exchange program

Objective: Recycle HHW to the extent possible

- Provide an annual report on the types and quantities of HHW being recycled
- Survey residents to determine if they are aware of the recycling program for used oil, vehicle batteries, and latex paint

9.2 Written Criteria for Evaluating Program's Effectiveness

The City of Morgan Hill will evaluate the success of each HHW program implemented by the following criteria:

- **Quantity and type of HHW collected.** The quantity and type of HHW collected or otherwise diverted from disposal will be recorded by specific waste type using CIWMB Form 303 (see Table 2), with units of weight recorded.
- **Disposal quantity.** The quantity of collected HHW disposed of will be summarized by waste type and weight along with the cost of disposal.
- **Recycled quantity.** The amount of recycled HHW will be summarized by waste type and weight along with the cost for recycling.
- **Staffing requirements.** The level of staffing needed to effectively manage the selected HHW programs will be evaluated to determine if adequate staffing is being allocated for the proposed programs.
- **Households utilizing programs.** Each program will monitor the locations of residents utilizing the programs to determine if residents in certain areas need to be targeted for education and public information or if additional collection programs need to be implemented to serve these residents

9.3 Responsible Parties for Monitoring, Evaluating, and Reporting

The City of Morgan Hill Community Development Department will oversee the responsibility of the HHW program, including monitoring, evaluating, and reporting.

9.4 Monitoring and Evaluation Funding Requirements

Additional funding is needed to monitor and evaluate the effectiveness of the selected programs. Staff duties will include:

- recordkeeping
- tracking the demographics of participants utilizing the program

Each of the monitoring and evaluation tasks will be conducted by staff responsible for specific programs.

9.5 Measures to be Implemented if Shortfall in the HHW Objectives

If the HHW objectives described in Section 1 fail to meet the goals of reducing and recycling HHW, the following tasks will be considered for implementation:

- increase the level of effort for education and public information
- increase and/or change the days or hours of operation for selected programs

10 FUNDING COMPONENT

Adequate and long-term funding is an essential component of a successful HHW management system. Inadequate funding can cause an otherwise effective program to fail. The purpose of the funding component is to demonstrate that the City has sufficient funds and allocation of resources to plan, develop, and implement the programs identified in this document.

This section briefly describes (1) the current mechanisms used to fund solid waste and HHW programs (2) estimated costs for the programs scheduled for implementation in the short-term planning period, (3) revenue sources to support the programs, and (4) contingency funding sources.

10.1 Current Funding Sources

The source of funding for waste management activities is revenues generated by the franchise fee with SVRD. The franchise fee is a percentage of the waste collection fees. The current annual budget for HHW activities is approximately $10,000.

10.2 Estimated Program Costs

Estimated costs have been determined for each of the new or expanded programs that have been identified in Chapter 5 for implementation during the short-term planning period. Table 10-1 shows the estimated operating costs for each of these programs.

10.3 Revenue Source for New and Expanded Programs

City franchise fee revenues will provide the funding for City-sponsored HHW programs. Programs that are operated by SVRD will be funded through refuse collection fees.

10.4 Contingency Funding Sources

Funding sources and mechanisms that could be explored if a shortfall in waste management funds occurs are as follows:

- Special taxes or assessment. These can take the form of short-term taxes or assessments to develop HHW programs.
- CIWMB non-discretionary HHW grant - Four million dollars is available from the CIWMB annually for the grant program. Funding eligibility is open to cities, counties, and local agencies that have implemented HHW programs such as construction of a permanent HHW facility, sponsorship of periodic collection day programs, and operation of load checking programs, etc.

Table 10-1
Implementation Costs for Selected Programs

Programs	Estimated Annual Costs
Short-Term Programs	
Alternative 1	
- Periodic Collection Events	10,000
Alternative 5	
- Load Checking Program[1]	____[1]
Alternative 6	
- Recycling Program[1]	____[1]
Alternative 7	
- Public Education and Information[2]	____[2]

1. Program funded through SVRD's existing rate structure.
2. Costs are included in the public education costs identified in the SRRE.

ACRONYMS

DHS	Department of Health Services (California)
EPA	Environmental Protection Agency
HHW	Household Hazardous Waste
HSC	Health and Safety Code (California)
MSW	Municipal Solid Waste
PCB	Polychlorinated Biphenyl
RCRA	Resource Conservation and Recovery Act
SQG	Small Quantity Generator
TSDF	Treatment, Storage and Disposal Facility

GLOSSARY OF TERMS

Acid - Chemical compound or solution which has a low pH (below 7). Strong acids are corrosive to many materials, especially metals. Acids with pH equal to or below 2.0 are considered hazardous.

Capital Costs - Those direct costs incurred in order to acquire real property assets such as land, buildings and building additions; site improvements; machinery; and equipment.

Characteristics of Hazardous Wastes - Characteristics identifying substances as hazardous waste, by their physical and chemical properties. EPA has established four characteristics that can be determined by tests:

- Ignitability - The ability to catch fire.
- Corrosivity - The ability to wear away or destroy other materials, including human tissue.
- Reactivity - The ability to enter into a violent chemical reaction, which may involve explosion or fumes.
- EP (Extraction Procedure) Toxicity - The ability to release certain toxic constituents when leached with a mild acid.

Disposal - Abandoning, depositing, interring, or otherwise discarding waste as a final action after use has been achieved or a use is no longer intended. (Section 66048, Title 22, California Administrative Code; the Department of Health Services is proposing to revise this definition.)

Disposal Site - An area, location, tract of land, building, structure or premises used or intended to be used for disposal of refuse or hazardous waste.

Environmental Protection Agency - A federal agency, established in 1970, which, among other duties, has responsibility for ensuring that governmental, residential, commercial and industrial waste-disposal activities do not adversely impact the environment.

Flammable - Material which will burn below 140°F, either spontaneously or as a result of coming in contact with sparks or flame.

Generator - The person, company, or facility that, by nature or ownership, management or control, is responsible for producing (or allowing to be produced) the hazardous waste.

Hazard - Having one or more of the characteristics that cause a substance or combination of substances to qualify as a hazardous material, as defined by section 66084 of Title 22 of the California Code of Regulations.

Hazardous Waste - is a waste, or combination of wastes, which because of its quantity, concentration, physical, chemical, or infectious characteristics, may either (1) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness, or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of, or otherwise managed. The term "hazardous waste" includes extremely hazardous waste, unless otherwise specified (Section 25117 of the Health and Safety Code). Examples of hazardous wastes include strong acids, explosives, flammables, toxic chemicals, and corrosives.

Heavy Metals - A group of metallic elements with high atomic weights and densities. Toxic heavy metals include arsenic, cadmium, chromium, lead, mercury, nickel, selenium, and thallium.

Herbicide - A chemical used to kill plants.

Household Hazardous Wastes - Hazardous wastes resulting from the use of such household products as paint products, solvents, insecticides, oven cleaners, disinfectants, medications, and drugs. Generally any products labeled poison, corrosive, flammable, or toxic belong in this category.

Incineration - The controlled combustion of burning solid, liquid or gaseous waste, producing gases and ashy residue containing little combustible material. This reduces the volume and toxicity of the hazardous wastes.

Land Disposal Method - Disposal, storage or treatment of hazardous wastes on or into the land, including, but not limited to, landfill, surface impoundment, waste piles, deep-well injection, land spreading, and co-burial with municipal garbage.

Landfill - A disposal site employing an engineered method of disposing solid wastes on land in a manner that minimizes environmental hazards by spreading solid wastes in layers, compacting the waste to the smallest practical volume and applying cover materials at the end of each operating day.

Lead Agency - The public agency which has the principal responsibility for the execution or approval of the project. For example, under the California Environmental Quality Act, such an agency decides if an EIR or negative declaration will be required for the project and causes the document to be prepared.

Manifest - A State form which indicates generator, quantity, type of waste, and disposer of waste for each shipment of hazardous wastes handled in off-site facility.

Materials Recovery Facility - A permitted solid waste facility where solid wastes or recyclable materials are sorted or separated, by hand or by use of machinery, for the purposes of recycling or composting.

Medium-Term Planning Period - A period beginning in the year 1996 and ending in the year 2000.

Municipal Solid Waste or MSW - All solid wastes generated by residential, commercial, and industrial sources, and all solid waste generated at construction and demolition sites, at food-processing facility, and at treatment works for water and waste water, which are collected and transported under the authorization of a jurisdiction or are self-hauled.

Normally Disposed Of - Those waste categories and waste types which: (1) have been demonstrated by the Solid Waste Generation Study, conducted pursuant to CCR, Title 14, Section 18722, to be in a solid waste stream attributed to the jurisdiction as of January 1, 1990; (2) which are deposited at permitted solid waste landfills or transformation facility subsequent to any recycling or composting activities at those solid waste facility; and (3) which are allowed to be considered in the establishment of the base amount of solid waste from which source reduction, recycling, and composting levels shall be calculated, pursuant to the limitations listed in Public Resources Code section 41781(b).

On-Site Disposal - Treatment of waste material on the premises where they were generated.

Operator - A person, industry, or agency that conducts the treatment, disposal and/or storage of hazardous materials.

Permit to Operate - A mandate issued by Air Pollution Control Districts and Air Quality Management Districts, which is required before operation of a facility, based on a demonstration that the facility can comply with applicable rules, regulations and conditions imposed in the Authority to Construct.

Permitted Landfill - A solid waste landfill for which there exists a current Solid Waste Facility Permit issued by the local enforcement agency and concurred in by the California Integrated Waste Management Board.

Pyrolysis - The process of heating combustible hazardous waste in the absence of oxygen, usually breaking the waste down to a residue of reduced toxicity.

Re-Use - The use, in the same form as it was produced, of a material which might otherwise be discarded.

Recyclables - Materials that still have useful physical or chemical properties after serving their original purpose and that can, therefore, be reused or remanufactured into additional products.

Recycling[1] - A series of activities by which materials that would become or otherwise remain waste are diverted from the solid waste stream for collection, separation, and processing and are used as raw materials or feedstocks in lieu of, or in addition to, virgin materials in the manufacture of goods sold or distributed in commerce, or the reuse of such materials as substitutes for goods made from virgin materials.

Reduction - A chemical reaction involving the addition of electrons to atoms or compounds; the opposite of oxidation, (not the same as waste reduction).

Reusability - The ability of a product or package to be used more than once in its same form.

Short-Term Planning Period - A period beginning in the year 1991 and ending in the year 1995.

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[1] As defined by the natural Recycling Advisory Council in *Recycling Times*, December 18, 1990.

Small Quantity Generator (SQG) - A generator of waste material amounting to less than 1,000 kilograms of hazardous waste per month.

Solid Waste - Discarded material with insufficient liquid to be free-flowing. Examples of this include garbage, rubbish, paper, ashes, industrial wastes, abandoned vehicles, manure, vegetable or animal solid and semisolid wastes, and other discharged solid and semisolid wastes.

Solvent - A liquid capable of dissolving another substance. Common solvents include water, acetone, alcohol, and paint thinner.

Source Reduction - The design, manufacture, acquisition, and reuse of materials so as to minimize the quantity and/or toxicity of waste produced. Source reduction prevents waste either by redesigning products or by otherwise changing societal patterns of consumption, use, and waste generation.

Storage Facility - A hazardous waste facility at which hazardous waste is contained for periods greater than 96 hours at an off-site facility or for periods greater than 90 days at an on-site facility. (Health and Safety Code Section 25123.3)

Tipping Fee - A fee, usually dollars per ton, for the unloading or dumping of waste at a landfill, transfer station, recycling center, or waste-to-energy facility, usually stated in dollars per ton; also called a disposal or service fee.

Ton - A unit of weight in the U.S. Customary System of Measurement, an avoirdupois unit equal to 2,000 pounds. Also called short ton or net ton.

Toxic - Capable of producing injury, illness, or damage to humans, domestic livestock or wildlife through ingestion, inhalation, or absorption through any body surface.

Transfer Station - A fixed facility used for transferring waste from small collection trucks or trains, packaging for transport, and loading it into larger vehicles, and directing it toward large capacity treatment or disposal facility.

Treatment - Any method, technique or process, including neutralization, designed to change the physical, chemical or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material resources from the waste or so as to render such waste nonhazardous.

Treatment Facility - Any facility at which hazardous waste is subjected to treatment or where a resource is recovered from a hazardous waste.

TSDF - A treatment, storage or disposal facility. This may also include transfer stations. This term is used in definitions of federal regulations.

Variance - An exemption from the Department's permitting process which is granted under special, stated conditions. Notifications of variances are sent to the local environmental health and land use planning departments and such facility are still subject to local land use permits.

Volume - A three dimensional measurement of the capacity of a region of space or a container. Volume is commonly expressed in terms of cubic yards or cubic meters. Volume is not expressed in terms of mass or weight.

Waste - Material which is discarded by the generator as no longer useful to the generator.

Waste Exchange - A network connecting waste generators with parties that can use treated or untreated hazardous wastes as raw materials for industrial processes.

Waste Reduction - On-site practices that eliminate, reduce, or avoid the need for off-site hazardous waste facility.

Section 66680 of Title 22 of the CAC presents a list of chemicals and common wastes and their respective potential hazardous properties.