

**Household Hazardous Waste Element  
City of Palo Alto, California**

**Prepared for  
City of Palo Alto  
June 5, 1991**

**Prepared by  
EMCON Associates  
1921 Ringwood Avenue  
San Jose, California 95131**

**Project 199-10.01**



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RESOLUTION NO. 7000  
RESOLUTION OF THE COUNCIL OF THE CITY OF PALO ALTO  
ADOPTING THE CITY'S SOURCE REDUCTION AND RECYCLING  
ELEMENT AND HOUSEHOLD HAZARDOUS WASTE ELEMENT  
PURSUANT TO PUBLIC RESOURCES CODE SECTION 40000 ET  
SEQ.

WHEREAS, California Public Resources Code Section 41000 requires the City of Palo Alto (the "City") to prepare, adopt and submit to Santa Clara County (the "County") a Source Reduction and Recycling Element ("SRRE") that proposes programs to reduce or recycle twenty-five percent of the City's solid waste currently landfilled by January 1, 1995, and fifty percent by January 1, 2000; and

WHEREAS, Public Resources Code Section 41500 requires the City to prepare, adopt and submit to the County a Household Hazardous Waste Element ("HHWE") that proposes programs to safely collect, recycle, treat and dispose of household hazardous wastes generated by households in the City and which should be separated from the solid waste stream; and

WHEREAS, pursuant to Public Resources Code Section 41793, the City held a noticed public hearing on January 22, 1991 to receive testimony on the preliminary drafts of the SRRE and the HHWE; and

WHEREAS, pursuant to Section 18766 of Title 14, Chapter 9, of the California Code of Regulations, the City has conducted a second public hearing on the final drafts of the SRRE and the HHWE and the City Council has considered all the comments of the members of the Council and the public on the SRRE and the HHWE;

NOW, THEREFORE, the Council of the City of Palo Alto does hereby resolve as follows:

SECTION 1. The City Council has considered and hereby approves the negative declaration prepared for the SRRE and the HHWE and finds that the project will have no significant environmental effects, as shown in said negative declaration, for purposes of the California Environmental Quality Act.

SECTION 2. The Council hereby approves the SRRE and the HHWE, attached hereto as Exhibits A and B, respectively, and made a part hereof by this reference.

SECTION 3. The Council hereby directs the City Manager or his designee to transmit the SRRE and the HHWE, on behalf of the City, to the County for incorporation into the Countywide Integrated Waste Management Plan.

INTRODUCED AND PASSED: June 17, 1991

AYES: Andersen, Cobb, Fazzino, Kniss, Levy, Renzel, Woolley

NOES:

ABSENT: Sutorius, McCown

ABSTENTIONS:

ATTEST:

*Gloria Young*  
City Clerk

APPROVED AS TO FORM:

*Karen Kelleher*  
Assistant City Attorney

APPROVED:

*Gary Fazzino*  
Mayor

*[Signature]*  
City Manager, Asst

*David Malen*  
Director of Public Works

THE FOREGOING DOCUMENT IS CERTIFIED TO BE A CORRECT COPY OF THE ORIGINAL ON FILE

GLORIA YOUNG  
CITY CLERK,  
CITY OF PALO ALTO

"I certify (or declare) under penalty of perjury that the foregoing is true and correct."

6/25/91  
Date & Place  
Palo Alto, CA

*Ms. Geraldine C. Jackson*  
Signature

## CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

1020 Ninth Street, Suite 100  
Sacramento, California 95814



Mr. Mike Miller  
City of Palo Alto  
Department of Public Works  
P.O. Box 10250  
Palo Alto, CA 94403

RECEIVED June 17, 1991

JUN 25 1991

CITY OF PALO ALTO  
PUBLIC WORKS-OPERATIONS

RE: Response to comments for the Negative Declaration pertaining to Source Reduction and Recycling Element (SRRE) and the Household Hazardous Waste Element (HHWE) concerning compliance with the California Environmental Quality Act (CEQA) for the City of Palo Alto, (SCH # 91053042)

Dear Mr. Miller,

Many of the comments originally presented in the two memorandums dated June 10 by Board staff were made with regard to impacts and mitigation measures for specific projects. Board staff presented those comments because they were unaware that any subsequent environmental documentation would be prepared by the Lead Agency for those specific projects. If the City intends to prepare subsequent environmental documentation for those specific projects at a later date, Board staff considers the Negative Declaration prepared for the environmental aspects of the HHWE and SRRE adequate for local adoption.

Thank you for the opportunity to review these comments. If you have any questions regarding these comments, please contact me at (916) 327-0450 or Vincent Paul of the Environmental Review Branch at (916) 327-2444.

Sincerely,

A handwritten signature in cursive script, appearing to read "John D. Smith".

John D. Smith, Acting Chief  
Local Planning Division



# City of Palo Alto

P. O. BOX 10250  
PALO ALTO, CALIFORNIA 94303

Department of Planning and  
Community Environment  
(415) 329-2440

250 Hamilton Avenue  
Post Office Box 10250  
Palo Alto, CA 94303

June 20, 1991

Santa Clara County Clerk  
Administrative Services  
191 First Street  
San Jose, CA 95113

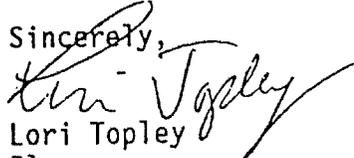
Dear Sir or Madam:

Attached are notices of determination completed by the City of Palo Alto, numbered and dated as indicated below. The action that has been taken on each project is indicated on the forms.

We are sending you the original and two copies of each document. Will you please stamp each with the date of filing, retain one copy for your files, post one copy and return the original to us in the enclosed stamped, self-addressed envelope. Thank you for your cooperation in this matter.

We send you these documents in accordance with the State Guidelines for Implementation of the California Environmental Quality Act of 1970, as amended.

Sincerely,

  
Lori Topley  
Planner

Attachments:

<u>PROJECT IDENTIFICATION NO.</u>	<u>ACTION TAKEN</u>	<u>DATE OF ACTION</u>
91-EIA-12	Approved	June 17, 1991

eiacrklr.tmp



Environmental Documents - City of Palo Alto

ENVIRONMENTAL ASSESSMENT

Project Description/Title: City of Palo Alto Source Reduction and Recycling Element and City of Palo Alto Household Hazardous Waste Element

Location/Address: City-wide (see attached location map)

Sponsoring Agency/Applicant: City of Palo Alto - Department of Public Works

Address and Telephone of Applicant: Mike Miller, Deputy Director of Public Works, Municipal Service Center, 3201 E. Bayshore Road, Palo Alto CA 94303

Application for: Not applicable  
(e.g., zoning change, subdivision of property, architectural review, use permit)

Zoning at Project Location: N/A Fee Receipt No.: N/A

NOTICE OF DETERMINATION

Based upon review of the project files, the undersigned member of the Planning Department has concluded:

Negative Declaration: The project has no significant environmental impact. No Environmental Impact Report is required. The reasons for a Negative Declaration are: in the attached Initial Study. A record of project action is available for review at the Palo Alto Municipal Service Center, Building C, located at 3201 E. Bayshore Road, Palo Alto

The project may have a significant environmental impact. An Environmental Impact Report will be prepared.

Planning Department Official: *Ken Topley*

Planning Director: *Kenneth R. Schreiber* Date: 5/13/91

The project has been approved. Date: 6/17/91

The project has been denied. Date: \_\_\_\_\_

Revised 8/1/79

File No.: 91-EIA-12



Santa Clara County  
Superior Court

Office of the County Clerk

191 North First Street  
San Jose, California 95113  
(408) 299-2074



\*ENVIRONMENTAL DECLARATION

NAME OF APPLICANT AND LEAD AGENCY:

City of Palo Alto - Public Works Dept.  
3201 E. Bayshore Road, Palo Alto CA 94303

FOR COURT USE ONLY

FILING NO.

CLASSIFICATION OF ENVIRONMENTAL DOCUMENT:

1.  NOTICE OF PREPARATION  
- NO FEE -
2.  NOTICE OF EXEMPTION/STATEMENT OF EXEMPTION  
- NO FEE -
3. NOTICE OF DETERMINATION  
 A - NEGATIVE DECLARATION PURSUANT TO SECTION 21080(C) OF  
THE PUBLIC RESOURCES CODE  
\$1,250.00 (Twelve Hundred Fifty Dollars) - STATE  
FILING FEE  
\$25.00 (Twenty-five Dollars) - CLERK FEE  
 B - CERTIFICATE OF EXEMPTION DE MINIMIS IMPACT FINDING  
- NO FEE -
4. NOTICE OF DETERMINATION  
 A - ENVIRONMENTAL IMPACT REPORT PURSUANT TO SECTION 21152  
OF THE PUBLIC RESOURCES CODE  
\$850.00 (Eight Hundred Fifty Dollars) - STATE FILING  
FEE  
\$25.00 (Twenty-five Dollars) - CLERK FEE  
 B - CERTIFICATE OF EXEMPTION DE MINIMIS IMPACT FINDING  
- NO FEE -

\*THIS FORM MUST BE COMPLETED AND FILED WITH ALL ENVIRONMENTAL  
DOCUMENTS FILED WITH THE SANTA CLARA COUNTY CLERK'S OFFICE.

MAKE CHECKS PAYABLE TO: COUNTY CLERK



CERTIFICATE OF FEE EXEMPTION

Department of Fish and Game de Minimis Impact Finding

To: County Clerk  
County of Santa Clara  
Administrative Services  
191 First Street  
San Jose, CA 95113

From: Department of Planning and  
Community Environment  
City of Palo Alto  
P. O. Box 10250  
Palo Alto, CA 94303

Project Title: City of Palo Alto Source Reduction and Recycling Element and  
City of Palo Alto Household Hazardous Waste Element

Project Location: City of Palo Alto

Project Description: Adoption of a Source Reduction and Recycling Element and  
a Household Hazardous Waste Element, which set forth programs designed to  
ensure that at least 50% of the City's solid waste is diverted from landfills  
by the year 2000. The diversion is to be achieved through source reduction  
(reducing the amount of waste generated, recycling and composting.

Findings of Exemption:

1. An initial study has been conducted by this lead agency (see  
attached 91-EIA-12) which has evaluated the potential for this  
project to cause an adverse effect--either individually or  
cumulatively--on wildlife resources. For this purpose, wildlife is  
defined as "all wild animals, birds, plants, fish, amphibians, and  
related ecological communities, including the habitat upon which the  
wildlife depends for its continued viability." (Section 711.2, Fish  
and Game Code)
2. Per the attached Environmental Impact Assessment, there is no  
evidence that the proposed project would have any potential for  
adverse effect on wildlife resources.

Certification:

I hereby certify that the City of Palo Alto, as lead agency, has made the  
above findings and that the proposed project will not individually or  
cumulatively have an adverse effect on wildlife resources, as defined in  
Section 711.2 of the Fish and Game Code.

  
\_\_\_\_\_  
Signature

Planner  
\_\_\_\_\_  
Title

6/20/91  
\_\_\_\_\_  
Date

Exempt.frm



Environmental Documents - City of Palo Alto

ENVIRONMENTAL ASSESSMENT

Project Description/Title: City of Palo Alto Source Reduction and Recycling Element and City of Palo Alto Household Hazardous Waste Element

Location/Address: City-wide (see attached location map)

Sponsoring Agency/Applicant: City of Palo Alto - Department of Public Works

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Application for: Not applicable  
(e.g., zoning change, subdivision of property, architectural review, use permit)

Zoning at Project Location: N/A Fee Receipt No.: N/A

NOTICE OF DETERMINATION

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Negative Declaration: The project has no significant environmental impact. No Environmental Impact Report is required. The reasons for a Negative Declaration are: in the attached Initial Study. A record of project action is available for review at the Palo Alto Municipal Service Center, Building C, located at 3201 E. Bayshore Road, Palo Alto

The project may have a significant environmental impact. An Environmental Impact Report will be prepared.

Planning Department Official: Kim Topley

Planning Director: Dennett R. Schaefer Date: 5/13/91

The project has been approved. Date: \_\_\_\_\_

The project has been denied. Date: \_\_\_\_\_

Revised 8/1/79

File No.: 91-EIA-12



ENVIRONMENTAL DOCUMENTS - PALO ALTO

INITIAL STUDY\* \*\*

- I. Project Title/Address: City of Palo Alto Source Reduction and Recycling Element and City of Palo Alto Household Hazardous Waste Element - City of Palo Alto
- II. Project Description: See Attached Project Description (attachment A)
- III. Environmental Setting: City-Wide (see attached location map)
- IV. Environmental Impact Checklist (Explanation of all "yes" answers are in Section V)

1. <u>Earth.</u> Will the proposal result in:	<u>YES</u>	<u>MAYBE</u>	<u>NO</u>
a. Unstable earth conditions or changes in geologic substructures?	___	___	<u>X</u>
b. Disruptions, displacements, compaction or overcovering of the soil?	___	<u>X</u>	___
c. Change in topography or ground surface relief features?	___	___	<u>X</u>
d. The destruction, covering or modification of any unique geologic or physical features?	___	___	<u>X</u>
e. Any increase in wind or water erosion of soils, either on or off the site?	___	___	<u>X</u>
f. Exposure of people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure or similar hazards?	___	___	<u>X</u>
g. Changes in siltation, deposition, or erosion which may modify the channel of a river or the bed of a bay or inlet?	___	___	<u>X</u>

\* Adapted from Appendix I, California Guidelines for Implementation of CEQA, December 14, 1976.

\*\* Updated May 1982, June 1983



- | 2. | <u>Air.</u> Will the proposal result in:   | <u>YES</u> | <u>MAYBE</u> | <u>NO</u> |
|----|--|------------|--------------|-----------|
|    | a. Substantial air emissions or deterioration of ambient air quality?  | ___        | ___          | _X_       |
|    | b. The creation of objectionable odors?  | ___        | _X_          | ___       |
|    | c. Alteration of air movement, moisture temperature, or any change in climate, either locally or regional?   | ___        | ___          | _X_       |
| 3. | <u>Water.</u> Will the proposal result in:   |            |              |           |
|    | a. Changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff?   | ___        | ___          | _X_       |
|    | b. Alterations to the course or flow of flood waters?  | ___        | ___          | _X_       |
|    | c. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?  | ___        | ___          | _X_       |
|    | d. Alteration of the direction or rate of flow of ground waters?   | ___        | ___          | _X_       |
|    | e. Exposure of people or property to water related hazards such as flooding or tidal wave?   | ___        | ___          | _X_       |
|    | f. Change in the quantity of ground waters, either through direct additions or withdrawals, or through interceptions of an aquifer by cuts or excavations? | ___        | ___          | _X_       |
| 4. | <u>Plant Life.</u> Will the proposal result in:  |            |              |           |
|    | a. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, microflora and aquatic plants)?          | ___        | ___          | _X_       |
|    | b. Reduction of the numbers of any unique, rare or endangered species of plants?   | ___        | ___          | _X_       |
|    | c. Introduction of new species of  |            |              |           |



	<u>YES</u>	<u>MAYBE</u>	<u>NO</u>
plants into an area, or in a barrier to the normal replenishment of existing species?	___	___	<u>X</u>
d. Reduction in acreage of any agricultural crop?	___	___	<u>X</u>
5. <u>Animal Life.</u> Will the proposal result in:			
a. Change in the diversity of species, or of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects or microfauna)?	___	___	<u>X</u>
b. Reduction of the numbers of any unique, rare or endangered species of animals?	___	___	<u>X</u>
c. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?	___	___	<u>X</u>
d. Deterioration in existing fish or wildlife habitat?	___	___	<u>X</u>
6. <u>Noise.</u> Will the proposal result in:			
a. Increases in existing noise levels?	___	<u>X</u>	___
b. Exposure of people to severe noise levels?	___	___	<u>X</u>
7. <u>Light and Glare.</u> Will the proposal produce new light and glare?	___	___	<u>X</u>
8. <u>Land Use.</u> Will the proposal result in a substantial alteration of the present or planned land use of an area?	___	___	<u>X</u> *
9. <u>Energy/Natural Resources.</u> Will the proposal result in:			
a. Use of substantial amounts of fuel or energy:	___	___	<u>X</u>
b. Substantial increase in demand upon existing sources of energy, or			

\* See discussion in Section V.



	<u>YES</u>	<u>MAYBE</u>	<u>NO</u>
require the development of new sources or energy?	_____	_____	<u>X</u>
c. Increase in the rate of use of any natural resources?	_____	_____	<u>X</u>
d. Substantial depletion of any nonrenewable natural resource?	_____	_____	<u>X</u>
10. <u>Risk of Upset</u> . Does the proposal involve a risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals or radiation) in the event of an accident or upset?	<u>X</u>	_____	_____
11. <u>Population/Housing</u> .			
a. Will the proposal alter the location, distribution, density, or growth rate of the human population of an area?	_____	_____	<u>X</u>
b. Will the proposal effect existing housing, or create a demand for additional housing?	_____	_____	<u>X</u>
12. <u>Transportation/Circulation</u> . Will the proposal result in:			
a. Generation of substantial additional vehicular movement?	_____	<u>X</u>	_____
b. Effects on existing parking facilities, or demand for new parking?	_____	_____	<u>X</u>
c. Alterations to present patterns of circulation or movement of people and/or goods?	<u>X</u>	_____	_____
d. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?	_____	_____	<u>X</u>
13. <u>Public Services</u> . Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas:			
a. Fire protection?	_____	_____	<u>X</u>



	<u>YES</u>	<u>MAYBE</u>	<u>NO</u>
b. Police protection?	___	___	_X_
c. Schools?	___	___	_X_
d. Parks or other recreational facilities?	___	___	_X_
e. Maintenance of public facilities, including roads?	_X_	___	___
f. Other governmental services?	_X_	___	___
14. <u>Utilities.</u> Will the proposal result in a need for new systems, or substantial alterations to the following utilities:			
a. Power or natural gas?	___	___	_X_
b. Communications systems?	___	___	_X_
c. Water?	___	___	_X_
d. Sewer or septic tank?	___	___	_X_
e. Storm water drainage?	___	___	_X_
f. Solid waste and disposal?	_X_	___	___
15. <u>Human Health.</u> Will the proposal result in:			
a. Creation of any health hazard or potential health hazard (excluding mental health)?	___	_X_	___
b. Exposure of people to potential health hazards?	___	_X_	___
16. <u>Aesthetics.</u> Will the proposal result in the obstruction of any scenic vista or view open to the public; or will the proposal result in the creation of an aesthetically offensive site open to public view?	___	_X_	___
17. <u>Recreation.</u> Will the proposal result in an impact upon the quality or quantity of existing recreational opportunities?	___	___	_X_



	<u>YES</u>	<u>MAYBE</u>	<u>NO</u>
18. <u>Cultural Resources.</u>			
a. Will the proposal result in the alteration of/or the destruction of a prehistoric or historic archaeological site?	___	___	<u>X</u>
b. Will the proposal result in adverse physical or aesthetic effects to a prehistoric or historic building, structure; or object?	___	___	<u>X</u>
c. Does the proposal have the potential to cause a physical change which would affect unique cultural values?	___	___	<u>X</u>
d. Will the proposal restrict existing religious or sacred uses within the potential impact area?	___	___	<u>X</u>
19. <u>Mandatory Findings of Significance.</u>			.
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	___	___	<u>X</u>
b. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time while long-term impacts will endure well into the future.)	___	___	<u>X</u>
c. Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact			



	<u>YES</u>	<u>MAYBE</u>	<u>NO</u>
on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant.)	___	___	_X_
d. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	___	___	_X_

V. Explanation of "yes" and "maybe" answers in environmental checklist.  
 See attached explanation (Attachment B).



## ATTACHMENT A

### II. PROJECT DESCRIPTION

Preparation of the Palo Alto Source Reduction and Recycling Element (SRRE) is mandated by the California Integrated Waste Management Act of 1989 (Assembly Bill [AB] 939, Public Resources Code Section 40000 et. seq.). The main purpose of the legislation is to divert materials from landfills in order to preserve decreasing landfill capacity and natural resources. Each California city and county is required to divert 25 percent of all solid waste from landfill or transformation facilities by January 1, 1995, and 50 percent by January 1, 2000. The diversion can be achieved through source reduction, recycling and composting activities.

As required by AB 939, the City of Palo Alto has prepared an SRRE which includes all of the following components for management of solid waste generated within the city:

- a waste generation study
- a source reduction component
- a recycling component
- a composting component
- a disposal facility capacity component
- an education and public information component
- a funding component
- a special waste component
- an integration component

Companion legislation to AB 939, Assembly Bill [AB] 2707 (Public Resources Code Section 41500 et. seq.), requires each city to prepare a separate Household Hazardous Waste Element to ensure the diversion from landfills of hazardous wastes generated by individual households. AB 939 originally included household hazardous waste as a component of the Source Reduction and Recycling Element. AB 2707 elevated the status of this component to that of "Element".

Both the Source Reduction and Recycling Element and the Household Hazardous Waste Element (HHWE) are addressed in this Initial Study.

Each component of the SRRE and the HHWE identifies several alternatives for reducing the amount of solid waste presently going to the landfill. However, not all of the alternatives have been chosen to be implemented by the City.



Only those alternatives specifically identified to be implemented by the City have been evaluated in this Initial Study.

Palo Alto currently diverts approximately 17.5 percent of its total waste stream through existing recycling and composting programs. The SRRE focuses on increasing diversion to meet or exceed the goals set by the State through increased recycling, composting, and source reduction efforts. Most of this increase can be integrated fairly easily into existing programs.

The SRRE includes participation by Palo Alto in a mechanized material recovery operation (Sunnyvale Materials and Recovery Transfer (SMaRT) Station) to be located in the City of Sunnyvale and, as most currently being negotiated, operated by a private company. Approximately two-thirds of Palo Alto's waste would be taken to the SMaRT station instead of the City landfill. Approximately 20 percent of the waste delivered to the station would be recycled. The remaining waste would be landfilled at a location under contract to the SMaRT Station (most likely Kirby Canyon landfill located in San Jose). This would result in the life span of the City landfill being extended from year 2002 (if all SRRE programs are fully met) to year 2029.

Should the City not contract for use of the SMaRT Station, alternative programs involving increased recycling efforts (e.g., mandatory commercial recycling) would need to be implemented to make up for the 20 percent diversion estimated to result from use of the SMaRT Station. Additional environmental review may be required at the time of the selection of these alternative programs.

#### SOURCE REDUCTION AND RECYCLING ELEMENT SUMMARY

An Executive Summary of the City of Palo Alto Source Reduction and Recycling Element is attached.

#### HOUSEHOLD HAZARDOUS WASTE ELEMENT SUMMARY

A summary of the Palo Alto Hazardous Household Waste Program is provided below.

The main short- and medium-term objectives of the Palo Alto Household Hazardous Waste Element are to:

- provide disposal alternatives for Household Hazardous Waste (HHW) generated in the city, including the development of a permanent collection facility;
- provide education programs to reduce the volume and hazards of HHW entering the waste stream by encouraging:
  - proper use and disposal of hazardous products,
  - waste reduction, including the use of safer alternatives;



- promote proper storage and handling methods to protect the public's health and safety;
- establish a waste exchange program at the permanent HHW facility to reduce the amount of HHW requiring disposal;
- recycle HHW to the extent possible

To ensure these objectives are met, the element proposes continuation or implementation of the following programs:

1. *Monthly Collection Events.* These events are on-going and have been successful in the past. More than 1,226 vehicles, representing 1,442 households, participated in the first eight collection events held in FY 1990-91. The collection events are currently held at the Regional Water Quality Control Plant located on Embarcadero Way in Palo Alto. These events will continue to be held on a monthly basis until a permanent collection facility is operational.

2. *Permanent Collection Facility.* To operate a permanent collection program, the City will need to develop a collection and storage facility. Suitable locations for such a facility are currently being evaluated. Such a facility is considered desirable because it will help reduce the amount of HHW disposed of in the landfill by offering residents an ongoing disposal option. Additionally, such a facility can sponsor a program for exchanging suitable materials to reduce the quantity of HHW requiring collection and disposal.

3. *Curbside Collection Program.* Palo Alto currently operates a curbside collection program for used oil. This curbside collection program is proposed to be expanded to accept antifreeze. Antifreeze can easily be incorporated into the existing oil pickup program because it can be transported in the same collection vehicle compartment as oil.

4. *Load-Checking Program.* 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 landfill and at the working face. Palo Alto has been operating a load-checking program since 1987 and, as required by law, will continue to operate this program.

5. *Recycling Program for Waste Oils, Paints and Batteries.* Palo Alto currently recycles selected HHW through several programs, including: a) used oil curbside collection; b) used oil and vehicle batteries collection at the Drop-Off Center; and, c) latex paint recycling during temporary collection events. Since a Hazardous Waste permit is no longer needed for collection and reuse of some HHW, an expanded recycling program will be included in the operations of the Drop-Off Center and, eventually, the permanent facility. The following materials will be accepted for recycling at the Drop-Off Center, until the permanent facility is constructed: latex paint; used oil; antifreeze;



spent lead-acid batteries; nickel-cadmium, alkaline and carbon-zinc, and other small batteries. The City will continue to recycle these household wastes at the Drop-Off Center and the periodic collection events. The recycling activities will be relocated to the permanent collection facility once it is operational.

6. *Public Education and Information.* Education and public information programs proposed by the City include informing the public about services available through (1) the curbside collection program, (2) the Drop-Off Center, and (3) collection events. Once the permanent collection facility is operational, the information program would be geared towards informing residents about the services available at the facility.



## ATTACHMENT B

### V. EXPLANATION OF "YES" AND "MAYBE" ANSWERS IN ENVIRONMENTAL CHECKLIST

#### 1.b. Earth.

The City currently operates a yard waste composting program which recovers approximately 45 percent of the total yard waste generated by the City. The composting operations site is located along the west side of the City's refuse disposal area and consists of approximately 10 acres. The SRRE proposes to ultimately increase the yard waste diversion rate from 52 percent to 75 percent through increased program participation. In order to handle the additional yard waste materials, and produce a higher quality compost, further site preparation, including grading, may be needed.

#### Mitigation

Prior to any site preparation activities, a grading and drainage plan will be required to be approved by both the City Public Works Engineering Division and the City Building Division.

#### 2.a. Air and 16. Aesthetics.

Expansion of the City's compost program will result in greater amounts of yard waste being processed and stored at the composting operations area. As noted above, the composting operations area is located at the landfill, along the west side of the disposal area. The Byxbee Park Master Plan approved by the City (see discussion below under "Land Use") calls for the creation of a park as the landfill is phased out. Some areas of the park adjacent to the active landfill area will be accessible to the public. Although not anticipated, increased composting activities could result in additional odor or visual impacts to park users. Potential conflicts between landfill activities and park users were addressed in the environmental assessment prepared for the Master Plan and the Phase I park improvements (SCH# 89081506, City reference 89-EIA-06). Odors are not expected to be a significant concern for park users due to the prevalent northwesterly winds. These winds disperse odor generated by landfill operations away from currently approved park development.

#### Mitigation

Future phases of the park improvements will be evaluated for any additional environmental impacts at the time details for each phase are presented to the City's Architectural Review Board (ARB) for approval. Should the City receive complaints from park users regarding odor or visual problems associated with increased composting operations, the composting operations area can be moved to another area of the refuse disposal site which creates less impact.



#### 6.a. Noise.

Increased pick up of recyclable materials by trucks on City streets would be necessary in order to meet the recycling goals established by the SRRE. Currently, two trucks make three trips to pick up garbage and recyclable materials. One truck picks up garbage and then returns for the compost materials; the second truck picks up the other recyclable materials. In order to increase the amount and types of recyclable materials being collected, the City's waste hauler will need to increase the number of trips and/or the number of trucks used to collect materials. This could result in a slight increase in noise levels where additional truck trips are needed. This is not expected to have an impact on commercial and industrial land uses, where most of the increase is expected. On residential streets, some residents may be bothered by the additional noise generated by an additional pick up.

#### Mitigation

In order to reduce disturbance to neighborhoods, garbage and recycling pick ups do not begin in residential areas before the hour of 6:00 a.m. The City's waste hauler (PASCO) will continue this practice. PASCO currently receives on average only two complaints each month regarding noise from garbage and recycling trucks. Although no significant noise impacts are anticipated as a result of increased recycling operations, an employee will be designated to handle any complaints from residents resulting from additional recycling truck pick ups. When necessary, the designated employee will work with the City's waste hauler to alter pick up times or pick up routes, or find other acceptable means to minimize noise disturbance.

8. Land Use. (Although this item is marked "no" on the checklist, some comments are provided here for explanation).

Palo Alto has approved a master plan for the reuse of the City's landfill as a park (Byxbee Landfill Park Master Plan). The continued operation of a portion of the landfill well into the future, and the phased construction of the park improvements as other portions of the landfill are closed, was considered by the Master Plan. Therefore, no changes in the expected land use of the landfill area are anticipated by the SRRE. Potential conflicts between park users and the active landfill were addressed by the environmental assessment prepared for the Master Plan and Phase I park improvements (SCH# 89081506, City reference 89-EIA-06).

Future phases of the park improvements will be evaluated for any additional environmental impacts at the time details for each phase are presented to the City's Architectural Review Board for approval.

#### 10. Risk of Upset.

To ensure proper disposal of household hazardous waste and increase the amount of hazardous waste diverted from landfills, the City proposes to locate and



operate a permanent household hazardous waste collection facility. This facility would collect recyclable hazardous waste, such as latex paint, used oil, antifreeze, spent lead-acid batteries and nickel-cadmium, alkaline carbon-zinc and other small batteries, in addition to non-recyclable household hazardous waste. Potential public health risks and safety hazards associated with the collection of household hazardous waste include spills, fires, leaks and explosions resulting from improper collection, storage, handling or transport of the hazardous materials.

Until the new permanent facility is built, the City will continue to operate periodic household hazardous waste collection events at the Regional Water Quality Control Plant located on Embarcadero Way in Palo Alto. This program has been in operation since 1983. Additionally, the City will begin accepting recyclable household hazardous materials at the existing recycling drop-off center. Once the permanent facility is in operation, collection will be moved from the drop-off facility to the permanent facility.

### Mitigation

Proper design, equipment, and health and safety training can minimize potential hazards associated with a permanent household hazardous waste collection facility. The construction and operation of the waste facility must meet specific local, state and federal safety operating standards. A facility should have separate storage bays to prevent spills or leaks of incompatible wastes from mixing, explosion proofing, grounding columns, proper containment, sufficient ventilation, and adequate emergency response and safety equipment. Detailed environmental analysis (most likely an Environmental Impact Report) will be completed at the time the City locates a potential site for the permanent collection facility and submits a proposal for review.

The existing periodic collection events at the Regional Water Quality Control Plant will continue to be operated in a safe manner, using proper equipment, storage techniques and health and safety training for personnel. There have been no reported accidents at any collection event held in Palo Alto.

Effective January 1, 1991 (pursuant to AB 2597), collection of household hazardous waste will no longer require a Hazardous Waste Permit if the 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. Drop-off collection will be limited to these materials. The drop-off center is equipped with a double-walled waste oil tank that can be emptied as needed to accommodate an increase in waste oil collection. The center is also equipped to accept batteries and latex paints.

### 12.a. Transportation/Circulation.

Increased pick up of recyclable materials by trucks on City streets would be necessary in order to meet the recycling goals established by the SRRE.



Currently, two trucks make three trips to pick up garbage and recyclable materials. One truck picks up garbage and then returns for the compost materials; the second truck picks up the other recyclable materials. In order to increase the amount and types of recyclable materials being collected, the City's waste hauler may need to increase the number of trips and/or the number of trucks used to collect materials. The additional truck trips needed to handle increased recycling levels (pickup in most cases is limited to once per week) are considered to be minimal, and are not expected to result in any traffic impacts.

#### 12.c. Transportation/Circulation.

The Palo Alto SRRE proposes to divert two-thirds of Palo Alto's refuse from the Palo Alto landfill to the Sunnyvale Materials Recovery and Transfer (SMaRT) Station to be located in the City of Sunnyvale. This would result in a majority of refuse truck trips travelling on Highway 101 to the SMaRT Station instead of travelling on Embarcadero Road to the City of Palo Alto landfill. The impact of this increased traffic on Highway 101 was analyzed in the Environmental Impact Report prepared for the SMaRT Station ("Final Environmental Impact Report for the Sunnyvale Materials Recovery and Transfer Station", dated June 18, 1990 (SCH #89022812), prepared for the City of Sunnyvale Public Works Department by Thomas Reid Associates). A copy of this EIR is available for review at the Palo Alto Public Works Operations Division, Municipal Service Center.

Project-generated PM peak hour traffic on Highway 101 as a result of Palo Alto and Mountain View's use of the SMaRT Station was projected at 28 trips, a 0.2% increase in existing Highway 101 peak hour traffic. Total daily weekday trips to the SMaRT Station from Palo Alto was estimated at 116 truck trips and 124 public trips. The impacts of this traffic on Highway 101 were found to not be significant and no mitigations were identified (Chapter 4, pages 19-39).

#### 13.e. and f. Public Services.

A permanent Household Hazardous Waste collection facility is proposed to be located in the City to provide greater opportunities for residents to properly dispose of household hazardous waste. This new facility would require careful and proper maintenance to avoid potential risks associated with collection and storage of these materials.

In order to meet the State mandated goal of 50 percent waste diversion by year 2000, the Palo Alto SRRE proposes adding new, and expanding existing recycling and composting programs. These new and expanded programs will result in the need for a slight increase in governmental services to start-up and maintain their operation.



## INCREASED COMPOST AND MIXED PAPER STOCKPILING

As a result of increased recycling efforts and potentially slow markets for some materials, additional stockpiling of materials such as compost and mixed paper may be necessary. There may be potential fire and health hazards associated with the stockpiling of mixed paper waste. Because the City is currently operating a successful composting program in an area adjacent to the active landfill, impacts associated with expanding the program and increasing the amount of stockpiled compost are expected to be minimal.

### Mitigation

The composting area is monitored regularly for vectors and other health hazards as part of the landfill operations. Fire hazards associated with increased stockpiling of compost are minimal, due to the interior moisture content of the composting material. Fire safety is additionally improved through the ready availability of water through the existing irrigation system and the provision of open aisles between the windrows.

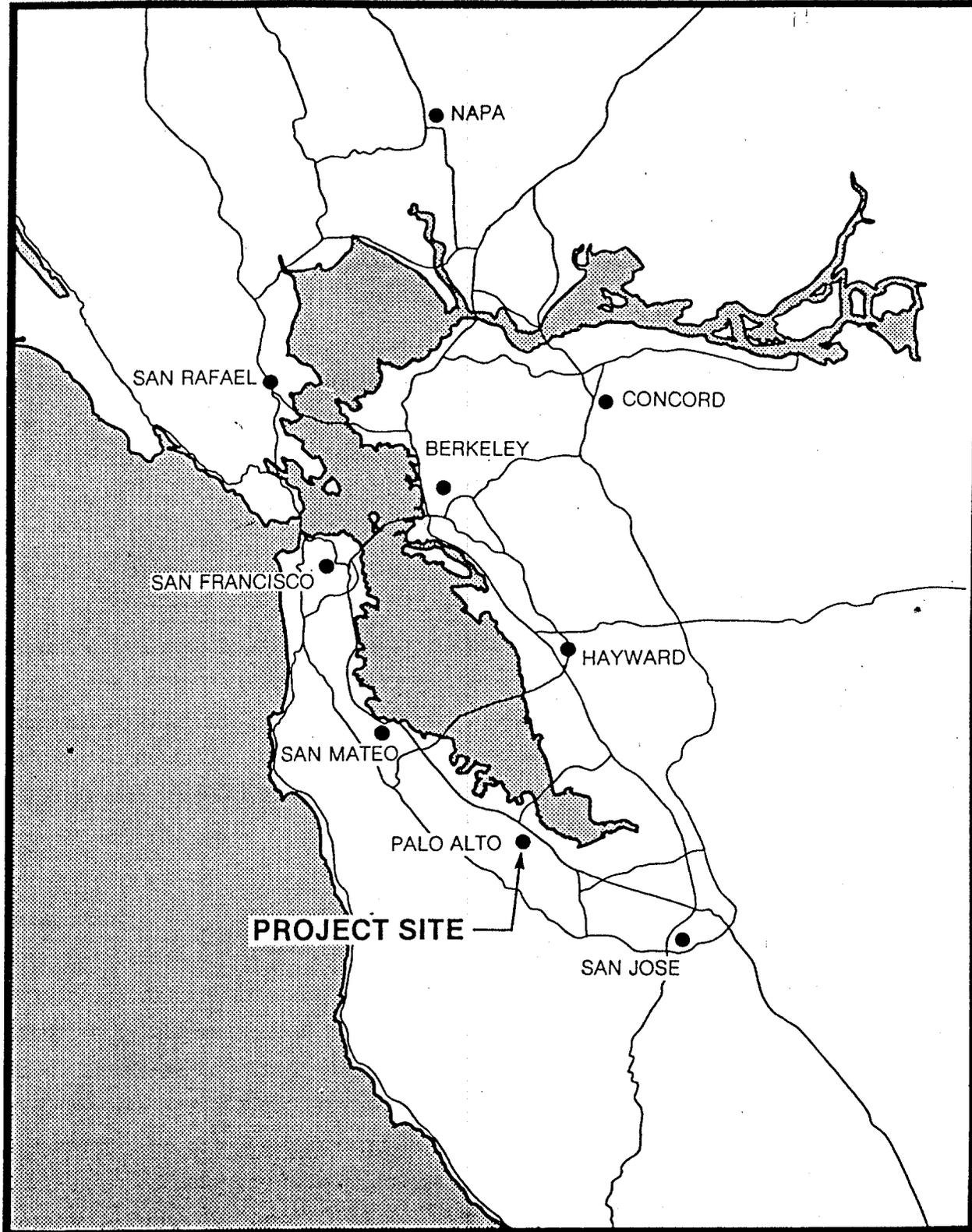
The City will monitor the amount of stockpiled compost. If a reduction in the stockpiles is needed, the City will offer the compost to Palo Alto residents.

Stockpiled mixed waste paper must be stored in such a manner as to reduce any fire risk. PASCO, the City's waste hauler, will consult the City Fire Department for proper storage requirements. Additionally, if wrappers from foodstuffs are to be included in the pickup program, they must be treated properly if they are to be stored for more than one week. If the market for mixed waste paper is slow, and PASCO cannot treat foodstuff wrappers, they will be kept out of the collection program.

## PERMANENT HOUSEHOLD HAZARDOUS WASTE COLLECTION FACILITY

Please see "Risk of Upset" above for a discussion of impacts associated with the proposed permanent household hazardous waste collection facility.





DATE: 5/91

SCALE: MILES 0 5 10 20

FILE NO. 91-EIA-12

PROJECT: Palo Alto Source Reduction and Recycling Element  
and Household Hazardous Waste Element

LOCATION MAP: Palo Alto in its Regional Setting



NORTH



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# 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). 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 lists hazardous materials commonly found around the home, garage, and garden.

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.

In response to the growing awareness of the HHW issue and the need for proper disposal of these wastes, Palo Alto has offered community collection and recycling programs for better management of these wastes.

## **2 OBJECTIVES**

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

### **2.1 Short-term Planning Period**

- provide disposal alternatives for HHW generated in the city, including the development of a permanent collection facility
- promote proper storage and handling methods to protect the public's health and safety
- recycle HHW to the extent possible

### **2.2 Medium-term Planning Period**

- continue to provide disposal alternatives for HHW generated in the city
- operate a permanent HHW facility
- establish a waste exchange program at the permanent HHW facility to reduce the amount of HHW requiring disposal
- continue education and public information programs implemented in the short-term planning period
- recycle HHW to the extent possible

### **2.3 Targeted Materials**

All household materials that have the characteristics of hazardous waste, including ignitability, toxicity, corrosivity, and reactivity, have been targeted

for collection, except those excluded by the DHS. Excluded household wastes include compressed gases, explosives, and infectious or radioactive wastes.

### **3 EXISTING CONDITIONS DESCRIPTION**

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Palo Alto currently provides a comprehensive program for HHW management including (1) periodic collection events, (2) curbside pickup of used motor oil, (3) auto battery and used motor oil collection at the Palo Alto Drop Off Center, (4) public education programs to reduce the use of HHW products, and (5) a load-checking program at the Palo Alto landfill.

The waste disposal characterization conducted as part of the SRRE at the Palo Alto landfill indicated that hazardous waste comprises approximately 0.09 percent of the waste stream, representing approximately 104 tons of HHW improperly disposed of annually. Approximately 169 tons was collected in 1990 via existing HHW programs including periodic collection events, curbside collection of oil, oil and vehicle battery recycling at the Drop-Off Center, and the load-checking program at the landfill.

An estimated 273 tons of HHW are generated by Palo Alto residents representing approximately 20.8 pounds per household per year. On an annual basis, Palo Alto collects approximately 12.9 pounds, representing 62 percent of HHW generated per household while 7.9 pounds, or 38 percent of HHW is improperly disposed by residents at the Palo Alto landfill.

Approximately 75 percent of the hazardous materials identified in the Waste Generation Study originated from residential loads. For the purpose of this element, the total quantity of hazardous material identified in the Waste Generation Study is assumed to be of residential origin, since unscrupulous residents can dump HHW in commercial and industrial dumpsters and debris boxes. In addition, the landfill operates a extensive load checking program capable of identifying hazardous materials from commercial and industrial loads much easier than residential loads where wastes are bagged.

### **3.1 Periodic Collection Events**

The City of Palo Alto began addressing the problems caused by improper disposal of HHW in 1983, before most communities were aware that problems existed. Palo Alto's HHW collection program began as a pilot project in response to community, staff, and city council concerns about the storage and potential dangers of commonly found hazardous consumer goods within the community. The pilot program was the second of its kind in the state of California and the first in Santa Clara County. The pilot project was funded by the City of Palo Alto Utilities Department, the services donated by a local hazardous waste handling firm, and volunteer assistance from local industrial environmental professionals. The 1983 pilot program collected enough HHW from over 350 residents to fill more than 80 50-gallon drums. In 1984, the city gave resounding support for an ongoing collection program to be offered quarterly to residents. Use of the program by residents has exceeded staff expectations. In 1990, the City experienced a 9.4 percent participation rate. The total amount of HHW collected during fiscal year 1989-90 is summarized in Table 2, (CIWMB Form 303). Table 3 summarizes the participation rate and the drums collected on an annual basis.

The collection events are sponsored by the City, through the Department of Public Works. The City has contracted with hazardous waste management firms to staff the collection events, and to transport and dispose of the collected HHW in compliance with federal, state, and local regulations. The collection events were open to Palo Alto residents from 10:00 a.m. to 3:00 p.m. on specified weekend days. The number of collection events held per year has varied somewhat over the years.

In June 1990 the City of Palo Alto decided to expand the HHW program to monthly events. These monthly events started in September 1990, are open to Palo Alto residents from 9:00 a.m. to 12:00 p.m. on specified weekend days. The City plans to compare the effectiveness of monthly collection events versus quarterly collection events. The program is budgeted out of the Refuse Fund.

Palo Alto's ongoing, fully funded municipal program has received a resounding welcome in the community. The results of the program and the staff's experience in developing it have been shared at regional and state conferences and symposia, and the program continues to receive nationwide attention.

### **3.2 Curbside Collection of Used Motor Oil**

The City's comprehensive HHW management program includes curbside collection of waste oil. The curbside collection program has been accepting used motor oil for recycling since 1978. Used motor oil which is collected on the same day as refuse must be placed in a 1-gallon plastic or metal container with a tight-fitting lid. The oil is taken to the Recycling Drop-Off Center where it is placed in a collection tank along with used oil that is taken directly to the Recycling Drop-Off Center by residents. A total of 9,637 gallons of used motor oil was collected in fiscal year 1989-90.

### **3.3 Battery and Used Motor Oil Collection at Drop-Off Center**

Vehicle batteries and used motor oil are accepted at the Recycling Center, located at the Palo Alto landfill. The center is operated on City property by the Palo Alto Sanitation Company (PASCO), the City's contracted refuse collection company.

The positive response to this program by residents during the past few years has resulted in a 26 percent increase in waste oil recovered for recycling and a 55 percent increase in battery recycling. A total of 13,143 gallons of waste oil and 16.44 tons of batteries was collected for recycling in fiscal year 1989-90.

### **3.4 Load Checking Program**

The Palo Alto landfill has operated a load checking program since 1987, with the objective of discouraging the improper disposal of prohibited waste. Common examples of prohibited wastes are paints, solvents, other flammables, pesticides, asbestos, polychlorinated biphenyls (PCBs), and inks. Approximately, 83 gallons of HHW (latex paint and oil base paint) is discovered each year through the load checking program.

Incoming loads are randomly inspected for prohibited waste. The gate attendant asks the public using the site whether they are disposing of HHW. If HHW is being disposed, the person is informed that hazardous materials are not accepted at the landfill. Residents are also informed of the date of the next HHW collection event. At the working face of the landfill, between 6 to 8 loads per week are inspected for prohibited materials.

A public awareness program has been developed by the City to educate landfill users about disposal restrictions at the landfill. Notices are sent to all households, businesses, and industries in the City explaining the types of wastes that are prohibited from the landfill. Garbage collectors also visually inspect the waste that is being collected, and are instructed not to collect refuse with prohibited materials. Because most of the waste is collected mechanically, refuse collectors find inspecting the waste to be difficult. To prevent hazardous waste from getting in the refuse, PASCO places notices on all collection bins and dumpsters that warn against the disposal of hazardous or toxic substances.

### **3.6 Status of Programs**

None of the programs are planned to decrease during the short- and medium-term planning periods.

## 4 EVALUATION APPROACH

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### 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*, requires certain criteria to be used in evaluating alternative programs for HHW. All criteria have been assigned a scale of high, medium, and low, with high being positive.

The following criteria, required by the Planning Guidelines, and reworded so that all are viewed in the positive, are used for evaluating alternative programs for HHW.

#### 4.1.1 Absence of Hazard

*Absence of hazard* reflects the extent to which hazards could impact the alternative. Hazards could include health risks, injury, fire, or others identified for the alternative.

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

Medium: Potential hazards are known and controllable. Some impacts remain.

High: There are few or no potential hazards or unmitigated impacts.

#### 4.1.2 Flexibility

*Flexibility* measures the alternative's ability to accommodate changing economic, technological, and social conditions.

**Low:** The alternative has a limited ability to respond to changing conditions. Limitations may include inflexible or unpredictable markets for diverted materials, operational limitations, or others identified for the alternative.

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

**High:** The alternative is anticipated to be readily adaptable in meeting changing conditions. No significant changes in the program are necessary.

#### **4.1.3 Ease of Implementation**

*Ease of implementation* measures the extent to which the alternative can be relatively quickly implemented, i.e. whether it can be implemented in the short-term or medium-term planning periods.

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

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

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

#### **4.1.4 Facility Needs**

*Facility needs* measures the need for expanding existing facilities or building new facilities to support the implementation of the alternative.

**Low:** New facilities must be developed to accommodate implementation of the alternative.

**Medium:** Existing facilities must be expanded or altered to accommodate implementation of the alternative.

**High:** The alternative can be easily integrated into existing facilities.

#### **4.1.5 Consistency with Local Policies**

*Consistency with local policies* measures the alternative's compatibility with existing local plans, policies, and ordinances.

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

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

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

#### **4.1.6 Absence of Institutional Barriers**

*Absence of institutional barriers* evaluates the extent to which institutional barriers, such as long-term franchise agreements or other contracts, may impact the implementation of the alternative.

**Low:** The alternative is impacted by existing institutional barriers which are not under the control of the jurisdiction.

**Medium:** The alternative is impacted by existing institutional barriers over which the jurisdiction maintains some control.

**High:** There are no existing institutional barriers to the alternative.

#### **4.1.7 Estimated Cost**

*Estimated cost* is the estimated cost of the alternative, including capital costs and operating costs over the lifetime of the alternative. This may also be presented by a range of costs.

**Low:** > \$200,000

**Medium:** \$50,000-200,000

**High:** \$0-50,000

#### **4.1.8 End Uses**

*End uses* measures the short-term marketability of the diverted materials.

**Low:** End uses are currently non-existent or unreliable, though the potential for the development of long-term or medium-term markets may exist.

**Medium:** End uses exist, but are subject to moderate fluctuations. The potential for the development of short-term markets may exist.

**High:** Existing end uses are relatively stable.

#### **4.2 Ranking System**

A numerical system has been developed for the evaluation criteria with points assigned as follows:

- high 3 points
- medium 2 points
- low 1 point

In addition, all criteria include a fatal flaw consideration. A fatal flaw is indicated by a zero. Any alternative with a fatal flaw is eliminated from consideration and does not receive a total point score. The fatal flaw designation was developed to prevent the possibility of an infeasible alternative from being selected due to its overall point score.

The total points are summed for each alternative and the results analyzed. Working with City staff, the alternatives are selected for implementation based on the ranking system results and professional judgement.

## 5 EVALUATION OF ALTERNATIVES

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This section presents an evaluation of alternative activities that can be used in the City of Palo Alto to meet HHW objectives. The results of the evaluation are summarized in Table 4. The following seven alternatives were evaluated:

- Alternative 1 - Existing Periodic HHW collection
  - Option 1 - Quarterly Events
  - Option 2 - Monthly Events
- Alternative 2 - Permanent HHW collection facility
- Alternative 3 - Mobile HHW collection
- Alternative 4 - Existing curbside HHW collection programs
- Alternative 5 - Existing load-checking program
- Alternative 6 - Recycling program for HHW
- Alternative 7 - Education and public information

### 5.1 Alternative 1 - Existing Periodic HHW Collection

#### Option 1 - Quarterly Events

The City of Palo Alto sponsored quarterly collection events until September 1990 when monthly collection events were initiated. Residents are informed about collection events via utility bill inserts and announcements in the local newspaper. The quarterly collection program is described in Section 3, "Existing Conditions Description." Table 5 summarizes the results from the past five quarterly collection events in Palo Alto.

**Absence of hazard.** 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 haz-

ardous materials. However, proper design, equipment, and health and safety training minimize any potential hazards. There have been no reported accidents at any collection event held in Palo Alto, so the risk is considered minimal.

**Flexibility.** Collection events have a limited ability to respond to changing conditions. Collection events cannot properly manage HHW if participation rates increase considerably. The result would be long lines, traffic queuing problems, and an increased potential for accidents associated with collection. In addition, collection events do not allow for flexibility in recycling options.

**Ease of Implementation.** The program has been in operation since 1983 and will continue to operate on a regular basis.

**Facility needs.** Collection events do not require expansion or development of facilities. The collection events are currently held at the Regional Water Quality Control Plant on Embarcadero Way.

**Consistency with local policies.** The City has supported the HHW collection program since its inception in 1983.

**Absence of institutional barriers.** Collection events offered quarterly provide residents with a reliable disposal option.

**Estimated cost.** The estimated budget for the fiscal year 1989-90 was \$160,000. The actual cost for the program was \$201,895. The cost of each collection event varies from \$38,739 to \$57,856, depending on the types of materials collected, the number of drums collected, and participation rates. The cost per household ranges from \$77 to \$117 per collection event.

**End uses.** Collection events divert latex paint from the waste stream via recycling. Nonrecyclable HHW collected through the events are either properly disposed of at a permitted hazardous waste disposal facility or incinerated.

## **Option 2 - Monthly Collection Events**

The City of Palo Alto sponsored quarterly collection events until September 1990 when monthly collection events were initiated. Residents are informed about collection events via utility bill inserts and an announcement in the local newspaper. The monthly collection program is described

in Section 2, "Existing Conditions Description." Tables 6 summarize the results from the first eight monthly collection events in Palo Alto.

**Absence of hazard.** 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. However, proper design, equipment, and health and safety training minimize any potential hazards. There have been no reported accidents at any collection event held in Palo Alto, so the risk is considered minimal.

**Flexibility.** Collection events have a limited ability to respond to changing conditions. Collection events cannot properly manage HHW if participation rates increase considerably. The results would be long lines, traffic queuing problems, and an increased potential for accidents associated with collection.

**Ease of implementation.** The program has been in operation since 1983 and will continue to operate on a regular basis.

**Facility needs.** Collection events do not require expansion or development of facilities. The collection events are currently held at the Regional Water Quality Control Plant on Embarcadero Way.

**Consistency with local policies.** The City has supported the HHW collection program since its inception in 1983.

**Estimated cost.** The cost for the first eight monthly collection events was \$204,183. When extrapolated, the estimated cost for 12 monthly collection events will be \$306,275, compared to \$201,895 for quarterly collection events. The cost for monthly collection events varies depending on the types of materials collected, the number of drums collected, and participation rates. The cost per household ranges from \$103 to \$261 per monthly collection events compared to \$77 to \$117 for quarterly.

**End uses.** Collection events divert latex paint, oil, and batteries from the waste stream through recycling. Nonrecyclable HHW collected through the events are 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 city residents at a fixed location and are 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 collection. The DHS encourages the exchange of materials as long as certain safeguards are maintained.

**Absence of hazard.** 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. However, proper design, equipment, and health and safety training minimize any potential hazards. A permanent facility provides the safest means of collecting and properly disposing of HHW.

**Flexibility.** A permanent facility can accommodate changing social conditions by increasing or decreasing the days of operation, as needed. A permanent facility can process participants more efficiently than 1-day collection events, because of dedicated staffing and operational characteristics of the facility. In addition, recycling opportunities are enhanced from increased storage time and experienced staff.

**Ease of implementation.** The implementation phase for a permanent facility requires approximately 2 to 4 years for site assessment, CEQA compliance, permitting, design, and construction.

**Facility needs.** This alternative requires the development of a 30' x 60' building for processing and storage of HHW. An 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, grounding columns, proper containment, sufficient ventilation, and adequate emergency response and safety equipment. A 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 policies.** A permanent facility is consistent with local policies, plans, and ordinances. The City of Palo Alto is evaluating potential sites for a permanent collection facility.

**Absence of institutional barriers.** Institutional barriers are anticipated to have little impact on this alternative.

**Estimated cost.** The total estimated capital costs for a permanent facility are approximately \$420,000. Annual operating costs, dependent upon the participation rate, range from approximately \$400,000 to \$500,000, including public education and information. To reduce disposal fees, items such as paint, oil, and automotive batteries can be recycled and a waste exchange program implemented.

**End uses.** 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.

### **5.3 Alternative 3 - Mobile HHW Collection**

A mobile waste collection program consists 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 in a short time, once a collection event is completed. A mobile waste collection program is most likely implemented on a county-wide basis. Residents in suburban communities and unincorporated areas should be assured that a mobile collection unit would be within a 15- to 20-minute drive from their home sometime during the year.

A mobile collection program is an effective collection approach for a dispersed population. In Palo Alto, the residential areas are fairly dense and are more efficiently serviced by a centrally located collection program that is only 15 to 20 minutes from any one resident in the city.

**Absence of hazard.** 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. However, proper design, equipment, and health and safety training minimize any potential hazards.

**Flexibility.** A mobile collection program is only viable on a county-wide basis due to high capital costs. Replacing the current monthly collection

program with a mobile facility would reduce the number of collection events offered to Palo Alto residents.

**Ease of Implementation.** Approximately 1 to 2 years is required to purchase and modify equipment needed to operate a mobile collection facility. The DHS regulates mobile collection programs similarly to a temporary collection facility: the permitting process would therefore require approximately the same amount of time.

**Facility needs.** 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 lots, or a school parking lot.

**Consistency with local policies.** Since the alternative is designed to service a dispersed population, Palo Alto would not benefit from shifting from monthly collection events to a mobile collection program.

**Absence of institutional barriers.** There are several problems associated with mobile collection events. The location is constantly changing, which makes finding sites with adequate access, convenience, and safety difficult. The public must also be informed in advance of the time and location of events in order to have a successful participation rate.

**Estimated cost.** Based on available data, a mobile facility would cost approximately \$90,000 to \$110,000. Other costs would include waste management, personnel, public education, and equipment totalling approximately \$300,000 to \$400,000 per year. The costs for a mobile collection program appear to be higher than for a periodic collection program or permanent facility.

**End uses.** 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 HHW Collection Programs**

A HHW curbside program offers residents an opportunity to place HHW at the curb for collection. HHW collection can be combined with refuse pickup or curbside recycling programs. Vehicles used for this type of pro-

gram are specially equipped to handle hazardous waste and require a staff trained in hazardous waste identification. Once collected, the waste is lab packed or bulked and either recycled or disposed of properly.

**Absence of hazard.** 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. However, proper design, equipment, and health and safety training minimize any potential hazards.

Another problem of 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.

**Flexibility.** Effective January 1, 1991, pursuant to AB 2597, a hazardous waste permit is no longer needed for collection of recyclable HHW. Antifreeze can be incorporated into the existing curbside program for used oil.

To collect other HHWs, additional trucks and drivers would be needed. The area used for storing the hazardous materials would also need to be expanded, if participation increases.

**Ease of implementation.** Since a curbside program collecting all types of HHW has not been implemented in the State of California, determining the time that would be needed to obtain the necessary permits for operating the program is difficult.

**Facility needs.** 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. An area is also needed to store materials once collected.

**Consistency with local policies.** The City of Palo Alto provides curbside service for used motor oil. Currently, three collection vehicles are used to collect (1) curbside recyclables, (2) yard waste, and (3) refuse. Expanding the curbside program to include another collection vehicle for HHWs, would increase truck traffic to three collection vehicles, excluding refuse collection. An expanded curbside program would therefore not be consistent with existing conditions. Including antifreeze in the curbside collection program, however, is feasible, since it could be combined with the used oil pickup and thus would not require additional collection vehicles.

**Absence of institutional barriers.** The liabilities of a curbside collection program are significant including 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 cost.** A collection tank for antifreeze at the Drop Off Center would cost approximately \$10,000. Annual collection costs for used motor oil and antifreeze are approximately \$2,200.

**End uses.** End uses for antifreeze and used oil are presented in section 5.6, the recycling alternative.

### **5.5 Alternative 5 - Load-Checking Program (Existing Program)**

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 landfill and at the working face. 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. A description of Palo Alto's load checking program is given in section 2.4.

**Absence of hazard.** The potential hazards involved in a load checking program include the risk from exposure to the prohibited waste while inspecting the waste or handling it. Both the engineering technician and the response teams would be at risk.

**Flexibility.** A load-checking program selects random loads for prohibited wastes. It is difficult to determine who is the generator of HHW, which limits the effectiveness of the program as an educational tool for residents. However, self-haul wastes are also checked periodically. The program is more effective at identifying hazardous wastes originating from a business.

**Ease of implementation.** The load-checking program has been in operation since 1987 and will continue to operate.

**Facility needs.** No facilities are needed for a load-checking program.

**Consistency with local policies.** The load-checking program is consistent with the City's policy of keeping prohibited wastes from entering the Palo Alto landfill.

**Absence of institutional barriers.** A load-checking program is required in the State of California. The State Water Resources Control Board 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. Hazardous waste will be stored for less than 90 days, no HW permit is needed, as long as the facility complies with state regulations. If HW will be stored for more than 90 days, the solid waste facility must apply to DHS for a hazardous waste facility permit or variance.

**Estimated cost.** The costs for the load checking program are approximately \$12,000 and includes staffing.

**End uses.** Not applicable.

## **5.6 Alternative 6 - Recycling Program for Waste Oils, Paints, and Batteries**

A recycling program for HHW can help reduce the high costs of disposal at a permitted hazardous waste disposal facility. Many communities have integrated recycling programs for latex paint, oil, and batteries into collection events, drop-off centers, and curbside recycling programs. By recycling HHW, the City can help divert these materials from disposal and preserve natural resources.

Palo Alto currently recycles selected HHW through several programs including

- used oil via curbside collection
- used oil and vehicle batteries via the Recycling Center
- latex paint via periodic collection events

**Absence of hazard.** 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.

**Flexibility.** Recycling programs are flexible to changing conditions. The Recycling Center is equipped with a double-walled waste-oil tank that can be emptied as needed to accommodate an increase in waste oil collection. The center is also equipped to accept auto batteries.

**Ease of Implementation.** Recycling operations can be relatively easy to implement with existing or planned programs.

**Facility needs.** The Recycling Center at the Palo Alto landfill houses the waste oil collection tank. Used batteries are also collected at the Recycling Center. Some bulking of paints is done at periodic HHW collection events.

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

**Absence of Institutional barriers.** 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 HW permit if materials accepted are limited to: (1) latex paint, (2) used oil, (3) antifreeze, (4) spent lead acid batteries, (5) nickel-cadmium, alkaline, carbon-zinc, and other small batteries.

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

Government Code Section 66798.9 (Statute, 1989) provides immunity for local agencies operating HHW programs unless the agencies act negligently. Additional immunity from state liability is provided in Health & Safety Code, Section 25366.5, for local governments or their contractors who are running HHW facilities and events.

**Estimated cost.** Annual recycling costs for used motor oil and auto batteries are approximately \$7,500. Recycling costs for latex paint are included in the monthly collection event program.

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

- Latex paint can be collected, sorted, consolidated, blended, repackaged, and sold or given to local public agencies and nonprofit groups. It is commonly used to cover graffiti. It can also be 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, 7 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 industry. 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).

## **5.7 Alternative 7 - Education and Public Information**

The City's existing public education and information programs are limited to publicizing the monthly collection events via utility bill inserts and the local newspaper, and by distributing a *Safer Alternatives* pamphlet to residents participating in the events. Unfortunately, the pamphlet only provides education materials to residents who are informed about the pro-

gram. In order to effectively manage HHW, an education program that is targeted at all age groups needs to be implemented. Education must be an on-going effort to inform residents of the hazards of some household materials and the proper avenues available to them to dispose of HHW once they are no longer needed.

An effective program must inform the community about the available recycling and disposal options available, in addition to educating the public about the dangers of HHW and safer alternatives. The City will expand its existing program by publicizing the program via door hangers, public service announcements, and a newsletter. In addition, the City will offer promotional materials including posters, buttons, stickers, and bookcovers, to educate the community on the HHW issue. The City may coordinate efforts with the County of Santa Clara, local community organizations, and store owners to disseminate pamphlets on safer alternatives to HHW. The City may also consider offering coupons or rebates for less toxic items such as fly swatters.

**Absence of hazard.** The information regarding safer alternatives to HHW must be accurate to minimize hazards.

**Flexibility.** A public education program should be flexible to account for changing conditions in demographics, products, etc. The program should serve to educate consumers about the hazards of household products, and the proper management of these products. An education program should (1) encourage the use of less toxic products, (2) buying household hazardous materials only in quantities that will be used, (3) proper storage, and (4) proper disposal of HHW when the products are no longer needed.

**Ease of implementation.** Additional education and public information programs will be developed during the short-term planning period.

**Facility needs.** No additional facilities are needed. Existing facilities could serve as locations for seminars and educational workshops.

**Consistency with local policies.** Education and public information are consistent with City policies.

**Absence of institutional barriers.** There are no barriers to offering the public educational materials. However, reaching the public requires much effort and the City of Palo Alto does not have adequate staffing to provide an effective on-going public education program.

**Estimated cost.** The current budget for education and public information is \$2,000. A more aggressive public education program would increase public awareness of the dangers of household hazardous substances. If such a program is pursued, participation in the City's collection program should increase. The budget for the public education program should be increased to \$25,000 in order to increase public awareness and participation rates. Additional staffing is needed to implement additional public education and information programs. The public education program for HHW can be part of a larger education program incorporating many components of the SRRE. The City should allocate at least one full-time staff position for implementation of public education programs for the waste diversion components of the SRRE and the HHW element.

The City can obtain education materials from the DHS, other state agencies, and non-profit organizations for a nominal fee to minimize costs for materials.

**End uses.** Not applicable



## 6 PROGRAM SELECTION

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The selection of programs was based on the evaluation criteria and the ease of implementation in the City of Palo Alto. Based on the dynamics of the City, a combination of programs was selected to provide the most comprehensive approach to managing HHW.

Table 7 identifies the evaluation point totals for each category of alternatives.

### 6.1 Alternatives Selected

#### 6.1.1 Short-term Planning Period

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

- periodic collection events (existing program)
- collection of recyclable HHW at the Recycling Center
- curbside collection of antifreeze and used oil
- education and public information
- load-checking program at the Palo Alto landfill (existing program)

Periodic collection events - Alternative 1. Collection events will offer Palo Alto residents a disposal option for their HHW in the short-term while a permanent HHW facility is being developed. However, collection events are not an effective long-term HHW management option. The collection events are effective in collecting HHW from a small percentage of the residents. Collection events are not however, an effective long-term HHW management option.

Collection of Recyclable HHW at the Recycling Center - Alternative 6. The City will collect recyclable HHW for reuse. Effective January 1, 1991,

pursuant to AB 2597, HHW collection agencies will no longer need a HW permit for collection of recyclable HHW, if the 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. Since an HW permit is no longer needed to collect recyclable HHW, latex paint, oil, and auto batteries will be collected at the Recycling Center until the permanent facility is developed. Offering the public an ongoing HHW recycling program will reduce the congestion at collection events, since fewer materials will need processing.

Curbside collection of used oil and antifreeze - Alternative 4. The City of Palo Alto provides curbside collection service for used motor oil. Antifreeze should be incorporated into the existing program because antifreeze can be transported in the same collection vehicle compartment as oil is currently collected. Costs for the program would therefore be minimal.

Public education and information - Alternative 7. A public education program that informs the community about HHW and its proper disposal will be implemented. The education program will emphasize the use of non- or less hazardous products. See Section 9 for a complete description of the education and public information program.

Load-checking program - Alternative 5. A load checking program detects prohibited wastes from entering the landfill. Palo Alto has been operating a load-checking program since 1987. The State Water Resources Control Board requires landfills to operate hazardous waste load-checking programs.(Section 2523, Title 23, CCR). Since it is required by law, the load checking program will continue as an on-going program.

### **6.1.2 Medium-term Planning Period**

The programs selected to manage HHW during the short-term planning period will continue during the medium-term planning period. Periodic collection events, however, will be phased out and replaced with a permanent collection facility.

Permanent HHW collection facility - Alternative 2. The permanent facility will offer the public a convenient, fixed location to deposit their HHW. A permanent facility will also reduce the potential liability to the City from the improper disposal of HHW, in the landfill. The facility will also recycle and reuse HHW to the extent possible. The facility is expected to be devel-

oped during the short-term planning period and operational in the medium-term planning period.

## **6.2 Types and Quantities of HHW Anticipated to be Collected, Recycled, and/or Disposed**

The HHW programs selected for the City of Palo Alto are designed to increase the collection of HHW and the public's awareness of the hazards of HHW.

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. Approximately 10,000 gallons of used oil and 2,000 gallons of antifreeze are expected to be collected yearly via curbside collection; an additional 13,000 gallons of used motor oil are estimated to be collected at the drop-off center. The collection events and later the permanent facility will collect the remaining materials. At present, determining the quantities of HHW that will be collected through the permanent facility is difficult. The facility will, however, be designed to accept varying quantities of HHW, if the quantities anticipated to be collected increase. As the public begins to reduce the quantity of HHW generated, however, the quantities should decrease.

## **6.3 Recycling and Reuse Efforts**

Since an HW permit is no longer needed for collection and reuse of some HHW, a recycling program will be included in the operations of the Drop-Off Center and permanent facility. The following materials will be accepted for recycling at the Drop-Off Center, until the permanent facility is constructed: (1) latex paint, (2) used oil, (3) antifreeze, (4) spent lead-acid batteries. As markets develop for other recyclable HHW, these materials will be added to the recycling program.

A permanent collection facility will include a program for exchanging materials. The material should be in its original container, and if opened, its contents must be judged sound and uncontaminated by the sponsors of the exchange event. Once that has been done, the party accepting the

material should be asked to sign a liability waiver releasing the HHW facility operator from responsibility pertaining to the materials received."

#### **6.4 Education and Public Information Programs**

See Section 9 for a description of education and public information programs.

#### **6.5 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 endorses the County program, but will not participate until the first year costs per participant are known. City staff will then compare the costs of the County's first year program to Palo Alto's monthly program and present the information to City Council for a recommendation after July 1992.

The County of Santa Clara is also developing a county-wide public education program for HHW. The City (Department of Public Works, Department of Utilities, and the Palo Alto Regional Water Quality Control Plant) will work closely with the County of Santa Clara and the County of Santa Clara Valley Water District on a public education program regarding the illegal disposal of HHW down the drain and into storm sewers. See Section 9 for a description of countywide education and public information programs.

#### **6.6 Facilities Needed for Implementation**

A permanent collection facility will enable the periodic collection events currently offered to residents to be phased out. The facility will initially accept recyclable HHW until the proper permits are obtained to accept all HHW. The City may elect to expand the facility's scope of services to accept hazardous materials from small businesses generating less than 100 kilograms (kg) of wastes per month (Small Quantity Generators). AB 2641 requires the DHS to allow cities and counties with a HHW collection program to accept hazardous materials from small quantity generators, if the amount collected is less than 100 kg per month.

## **6.7 Handling and Disposal Methods**

Proper handling and disposal methods are guided by state and federal regulations. The existing collection events are staffed by professional certified to handle hazardous materials. The staff for the permanent facility will be trained in handling of HHW.

Once a site is selected for the permanent facility, the City must submit an application to the DHS to operate the facility. The DHS is currently revising its regulations guiding operations of permanent HHW facilities. The permit-by-rule regulations should shorten the permitting process for the City, and will allow the facility to accumulate HHW up to one year provided the specific permit by rule provisions are met.

The City must determine whether the operation of the facility will be conducted by City staff, or contracted out. Nonetheless, the City will be required to contract with licensed hazardous waste haulers to remove the collected materials. Markets for recyclable materials must be established and maintained.



## **7 PROGRAM IMPLEMENTATION**

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

### **7.1 Government Agencies Responsible for Implementation**

The Department of Public Works is currently responsible for management of the HHW collection events, the curbside collection program, the Drop-Off Center, and education and information regarding both solid waste and HHW. The Department of Public Works will also be responsible for the permanent collection facility.

The Department of Public Works is required to follow all applicable state regulations regarding HHW.

The City (Department of Public Works, Department of Utilities, and the Palo Alto Regional Water Quality Control Plant) will consider coordinating implementation of public education programs with the County of Santa Clara and the Santa Clara Valley Water District since HHWs are often disposed of illegally down the drain and into storm sewers.

### **7.2 Tasks Necessary to Implement Program**

The City of Palo Alto will continue some existing programs in the short-term planning period including

- temporary collection events
- used oil curbside collection
- used oil and battery collection at the Drop-Off Center
- load checking program at the Palo Alto landfill
- public information programs

Several existing programs will also be expanded to include collection of additional materials, including

- integrating collection of antifreeze into existing curbside program for used oil
- expanding the scope of the Drop-Off Center to include collection of (1) latex paint, (2) used oil, (3) antifreeze, and (4) spent lead-acid batteries

Several tasks will be needed in the short-term planning period in order to have the permanent facility operational before the medium-term planning period; including

- evaluate alternative sites and select site
- prepare permitting documents and EIR
- specify facility's service area (is it only Palo Alto or does it include surrounding communities)
- 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

### **7.3 Short-term and Medium-term Planning Period Implementation Schedule**

The schedule in Figure 1 presents the schedule for implementation of HHW programs in the short-term and medium-term planning periods.

### **7.4 Implementation Costs**

See Section 10, Funding for a discussion of revenue sources and funding requirements.

## 8 MONITORING AND EVALUATION

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### 8.1 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 disposal alternatives, including a permanent collection facility**

- monitor the implementation of the permanent facility against the implementation schedule to determine if facilities will be developed on schedule
- determine the funding needed to ensure continued operation of the facility
- prepare summary reports and evaluations of the status of the permanent facility

**Objective: Improve the load inspection and diversion program at the landfill to reduce improper HHW disposal**

- Monitor the quantities of HHW discovered in the load-checking program for increases or decreases from previous years. If possible, determine if specific truck routes tend to produce more HHW than others.
- Prepare an annual report on the inspection and diversion efforts conducted by landfill personnel.

**Objective: Establish a waste exchange program at the permanent HHW facility 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 at the permanent facility

**Objective: Recycle HHW to the extent possible**

- provide an annual report on the types and quantities of HHW being recycled

## **8.2 Written Criteria for Evaluating Program's Effectiveness**

The City of Palo Alto will evaluate the success of each HHW program implemented by the following criteria:

- **Total and type of HHW collected.** The total and type of HHW collected or otherwise diverted from disposal should be recorded by specific waste type using CIWMB Form 303 (see Table 2), with units of weight always recorded.
- **Disposal quantity.** The amount of collected HHW disposed of should be summarized by waste type and weight along with the cost of disposal.
- **Recycled quantity.** The amount of collected recycled HHW should 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 should 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.

- **Markets for recyclable HHW materials.** The markets for recyclable materials will be monitored to determine if additional markets are necessary or if additional materials can be added to the program.

### **8.3 Responsible Parties for Monitoring, Evaluation, and Reporting**

The Palo Alto Public Works Department will oversee responsibility of the permanent facility including monitoring, evaluating and reporting. With the implementation of the permanent facility would come an increased need for HHW staffing. At minimum, a half-time person is needed to implement public education programs and inform residents about changes and additions to existing HHW programs. This staff position could manage education and public information for source reduction, recycling, and composting programs as well.

### **8.4 Monitoring and Evaluation Funding Requirements**

Additional funding is needed to monitor and evaluate the effectiveness of the selected programs including

- staffing for recordkeeping
- monitoring recyclable materials markets
- tracking the demographics of participants utilizing the program

Each of the monitoring and evaluation tasks will be conducted by staff responsible for specific programs. The Public Works Department will require approximately one full-time staff person for three weeks to one month to prepare the necessary monitoring and evaluation tasks.

### **8.5 Contingency Measures**

If the HHW objectives described in section 1 fail to meet the goals of reducing and recycling HHW, the following tasks can be implemented:

- increase the level of effort for education and public information
- increase the hours of operation at the permanent facility

- **increase staffing**
- **revise the implementation schedule**

## **9 EDUCATION AND PUBLIC INFORMATION**

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

### **9.1 Objectives for Short- and Medium-Term Planning Period**

The City of Palo Alto selected the following education and public information objectives to augment the selected HHW programs.

#### **9.1.1 Objective #1 Increase Residents' Awareness of Source Reduction, Safer Use, and Proper Disposal of HHW**

**Multidisciplinary education and public information program.** The City of Palo Alto will participate in public education programs which will be coordinated by the Countywide HHW Program. The Countywide HHW Program will coordinate public education efforts with the Nonpoint Source Pollution Control Program, the wastewater treatment plants' source reduction programs, the school science education curriculums, and non-profit educational organizations.

**City public education and information programs.** The City of Palo Alto will provide information to residents regarding the following city-sponsored HHW programs.

- periodic collection events
- curbside collection of used motor oil and antifreeze
- battery, latex paint, and used motor oil collection at drop-off center
- permanent HHW facility
- waste exchange at permanent HHW facility

**Source reduction.** Residents will be informed of the availability of non-hazardous substitutes. The need for public support for development of products which do not result in the generation of household hazardous waste will be included in public education materials.

**Proper use and storage.** Residents will be informed about the hazardous nature of some products and methods for proper use and storage of such products.

**Proper disposal.** Residents will be informed of the environmental hazardous associated with improper disposal of HHW, and will receive guidance on proper disposal methods.

### **9.1.2 Objective #2 Increase the Accuracy and Uniformity of HHW Information Disseminated by Public Agencies**

**County of Santa Clara Training for Use of Guidebook.** Employees of public agencies and organizations in Santa Clara County who respond to public inquiries regarding HHW will be eligible to participate in training on the use of the "Guidebook for Proper Management of Household Waste for the Protection of Our Local Environment." The Guidebook will be distributed to approximately 250 agencies and organizations in the Spring of 1991. The City of Palo Alto will participate in the training program and will utilize the guidebook.

**Guidebook updates.** The County Hazardous Waste Planning staff will oversee updates/supplements of the manual as necessary.

## **9.2 Existing Education and Public Information Programs**

### **9.2.1 City-Sponsored Education Efforts**

The City of Palo Alto has sponsored educational efforts to inform residents of proper disposal methods of HHW. In addition, residents have received guidance on how to generate less hazardous waste by using less- and non-hazardous alternatives. These efforts include:

- Publication and distribution of a pamphlet entitled *Take Me Shopping—A Consumer Guide to Safer Alternatives for Household Hazardous Products*. The pamphlet promotes source reducing HHW by providing nonhazardous alternatives for commonly used household

products. The information is distributed at HHW collection events and is mailed upon request. Approximately 3,000 copies were distributed by the City to residents in 1990.

- Publication and distribution of a brochure entitled *Your Home and Hazardous Materials*. The brochure contains information on safe-to-use alternatives and information on disposing of caustics, solvents paints, pesticides and herbicides, aerosol sprays, and automotive products.
- Phone inquiries from residents regarding HHW disposal and alternative products are answered by City staff. In 1990, approximately 360 calls were handled.
- Information table at the Annual Police and Fire Safety Show held at the Stanford Shopping Center.
- Public awareness program to educate landfill users about disposal restrictions at the landfill
  - notices are sent to all households, businesses, and industries explaining the types of wastes that are prohibited from the landfill
  - PASCO places notices on all collection bins and dumpsters that warn against the disposal of hazardous or toxic substances
- Advertising for periodic collection events consists of the following methods:
  - messages in utility bills
  - advertisements in local newspapers
  - flyers given to HHW event participants

### **9.2.2 Non-profit and Volunteer Organization Efforts**

**League of Women Voters.** In 1990, the League of Women Voters sponsored the production and distribution of a video entitled *Cleanup Up Toxics at Home*. The League distributed copies of the video to 16 libraries, 15 city governments, the County Hazardous Waste Management Pro-

gram, 7 junior colleges, 3 universities, and 8 perinatal education groups in Santa Clara County.

The League also printed and distributed 4,000 copies of *Take Me Shopping*, as well as a flyer entitled *Cleanup Up Toxics*, in 1990.

### **9.2.3 Public Agency-Sponsored Programs with Participation of City of Palo Alto**

**Nonpoint Source Pollution Control Program.** In 1988, the City joined the Nonpoint Source Pollution Control Program, (NSPCP) a project of the Santa Clara Valley Water District. Nonpoint source water pollution refers to pollutants which run off from broad areas of land rather than enter the water through a discrete pipe or conduit. The purpose of the NSPCP is to reduce stormwater-borne pollutants entering the southern San Francisco Bay. Specific pollutants of concern, in order of priority, are heavy metals (cadmium, copper, lead, mercury, nickel, silver, and selenium); hydrocarbons (contained in oil and grease); pesticides and herbicides; suspended sediments; and organic pollutants.

The NSPCP's Public Information/Participation Plan aims to inform the public about the causes and origins of nonpoint source pollution, explain the correct practices for controlling pollutants at their source, and involve the active support of the public in implementing these practices. The NSPCP aims to reduce improper disposal of HHW into nonpoint pathways and at the same time discourage disposal of HHW into the solid wastestream.

In 1991, the NSPCP began its public educational efforts with publication of a brochure entitled *The Bay Begins at Your Front Door!* The brochure explains how residents can prevent pollution of the San Francisco Bay by keeping hazardous materials from entering the storm drain system. The NSPCP plans to distribute this brochure and several pollutant specific brochures focusing on motor oil and pesticides. Additional educational programs are under development.

**Wastewater Treatment Plants.** The Palo Alto Regional Water Quality Control Plant is located in the City of Palo Alto and serves the cities of Palo Alto, East Palo Alto, Mountain View, Los Altos, the town of Los Altos Hills, as well as Stanford University in the unincorporated area of the County. Beginning in 1990, the Plant has sponsored a special public education effort aimed at reducing the accumulation of silver in the San

Francisco Bay. Residents are urged to deliver spent photographic fixer and other HHW to a household hazardous waste collection event.

**Santa Clara County Office of Education.** The County Office of Education oversees the implementation of the State Department of Education's mandated Science Framework in the 37 school districts in Santa Clara County. A revised science curriculum is being phase into the schools in 1990 and 1991 and contains lessons on hazardous materials for grades Kindergarten through twelfth.

**Santa Clara County Hazardous Waste Management Plan (Tanner Plan).** The Santa Clara County Tanner Committee developed the following three public education policies for management of HHW. The Plan was formally approved by the City of Palo Alto and will be adopted by the City upon approval of the Plan by the State Department of Health Services.

Public Education Policy #1

The County and Cities shall coordinate the development of a program for the proper management and disposal of household hazardous waste on a countywide basis in accordance with the waste management hierarchy and considering existing programs and conditions.

This policy resulted in the formation of the Household Hazardous Materials Working Group. The Working Group is composed of representatives from each of the cities; County hazardous waste, solid waste, and environmental health staff; private solid waste contractors; and community advisory members. The Working Group conducted a thorough evaluation of HHW management alternatives. This evaluation resulted in a design to implement a pilot countywide HHW collection and public education program in fiscal year 1991-1992.

Public Education Policy #2

The County, in coordination with the Cities, shall initiate a public education campaign which will inform all county residents about the potential hazards associated with household products, how to dispose of them safely, and safe substitute products and practices that can be used in place of hazardous substances.

Several educational publications have been produced: *Take Me Shopping—A Consumer Guide to Safer Alternatives for Household Hazardous Products* and *The Guidebook for Proper Management of Hazardous*

**Wastes.** Additional countywide educational activities are currently under development and area described in detail in this document.

Public Education Policy #3

The County, in coordination with the Cities and industry, shall engage in direct public education concerning hazardous waste reduction and management such as workshops, utilization of the media, school programs, and information dissemination.

As a result of this policy, industry-specific waste minimization workshops have been held in the county. Workshops for the metal finishing industry and the automotive service industry provided up-to-date waste minimization and regulatory compliance information to over 500 local businesses as of March 15, 1991. In addition, Palo Alto is working with its local industry in developing a pilot educational program to provide waste minimization information to all types of hazardous waste generators. Business and industry associations are also participating in these efforts. In addition, an effort to coordinate hazardous waste public education programs with local schools is underway, and includes the participation of several local community colleges.

## **9.3 Implementation of Education and Public Information Programs**

### **9.3.1 Program Description**

**City efforts.** The public information efforts currently underway in the City are described under Section 9.2.1 "Existing Conditions." It is anticipated that these city-sponsored programs will be continued into the short- and medium-term planning periods. A summary of public education activities to be carried out in the short- and medium-term planning period follows.

- HHW information telephone line
- Printing and distribution of *Take Me Shopping* at HHW events and upon request
- Use of the *The Guidebook for Proper Management of Hazardous Wastes*
- Advertising in local papers
- Non-point Source Pollution Control Program Public Education brochures

- Information booth at Police and Fire show

**Countywide efforts.** The City of Palo Alto plans to participate in the educational efforts coordinated by the Countywide HHW Program. Residents will be informed about how to use, store, and dispose of household hazardous waste properly. An aggressive source reduction component will be included to promote less hazardous alternatives and thereby reduce generation of HHW.

The Countywide HHW Program will coordinate educational efforts with participating cities, non-profit organizations, and public agencies such as the Nonpoint Source Control Program, wastewater treatment plants, and local schools.

### **9.3.2 Community Audiences to be Targeted**

The City of Palo Alto intends to provide HHW collection services and source reduction public information for all residents. However, in order to achieve this goal, it may be useful to identify the various "publics" or audiences that exist within the population of the city.

### **9.3.3 Agencies Responsible for Implementation of Education and Public Information Program**

The Public Works Department is responsible for oversight of the HHW education and public information programs in the City of Palo Alto. The Environmental Control Program manager will be the liaison between the City and the Countywide HHW Program and will participate in education and public information activities as they pertain to the city.

The County Department of Planning and Development will serve as the lead agency for public education. The Planning Department will coordinate the educational efforts with participating cities, County Environmental Health, Santa Clara Valley Water District, the wastewater treatment facilities, schools, and non-profit agencies.

### **9.3.4 Implementation Tasks**

#### **Public education.**

- Advertise periodic collection events 1991, ongoing
- Participate in training for use of the guidebook 1991-1992

- Review the guidebook annually
- Reproduce and distribute the "Take Me Shopping" booklet 1991, ongoing
- Establish City HHW telephone information line 1991
- Participate in ongoing multi-agency HHW public education efforts 1991, ongoing
- Develop and disseminate source reduction and product-specific information messages 1991, ongoing

### **9.3.5 Costs and Sources of Funding for Implementation of Education and Public Information Programs**

The City of Palo Alto HHW education and public information programs are anticipated to cost approximately \$25,000 per year. Funding sources for these programs are discussed in Section 10.

## **9.4 Monitoring and Evaluation**

### **9.4.1 Evaluation Methods**

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

#### **Objective - Increase Residents' Awareness of Source Reduction, Safer Use, and Proper Disposal of HHW**

**Evaluation Method 1.** Residents will be surveyed annually to determine the extent to which buying habits have changed towards the purchase of non-hazardous products and also to determine whether residents' awareness has increased regarding safe use and disposal practices. Results of the surveys will be included in the annual reports. When possible, changes in purchasing behavior may also be monitored using locally-obtained retail sales data or regional marketing data.

**Evaluation Method 2.** The evaluations of number of participants will be analyzed to determine the adequacy of HHW program advertising efforts.

**Evaluation Method 3.** An annual survey of retail businesses will be done to monitor availability of non-hazardous alternatives to specific products.

#### **9.4.2 Written Criteria for Evaluating Program Effectiveness**

The City of Palo Alto 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.

#### **9.4.3 Agencies Responsible for Monitoring, Evaluation, and Reporting**

The agencies responsible for monitoring, evaluation, and reporting include the Public Works Department of the City of Palo Alto, the County Division of Environmental Health Services, and the County Department of Planning and Development.

#### **9.4.4 Funding Requirements and Sources for Monitoring and Evaluation**

Monitoring and evaluation of HHW management in the City of Palo Alto will be funded through the Refuse Enterprise Fund.

#### **9.4.5 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

#### **9.4.6 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 October 1992.



## 10 FUNDING

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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.

This section demonstrates how the City of Palo Alto has sufficient funds and allocation of resources for the planning, development, and implementation of the new and existing HHW programs identified in this document. This section includes a description of the current mechanisms used to fund solid waste and HHW programs in the City of Palo Alto; and provides cost estimates for the planning, development, and implementation of new programs. In addition, this section lists future potential revenue sources and contingency revenue sources.

### 10.1 Current Funding Sources

The source of funding for solid waste and HHW management activities in Palo Alto is the Refuse Enterprise Fund. It is comprised of refuse collection fees paid by city residents and commercial collection customers, disposal area fees, interest income, lease and royalty income from Palo Alto Landfill Gas Corporation and other sources. Collection costs for garbage in Palo Alto are approximately \$44.00 per ton. Disposal costs for garbage are approximately \$45.00 per ton. The minimum charge is based upon the collection of refuse from one 32-gallon container. Collection fees charged to customers are based upon the combined net costs of City refuse collection operations, recycling collection operations, and tipping fees at the landfill. This fund adequately covers all costs for the current solid waste management system in the City.

Described below are programs funded by the Refuse Enterprise Fund. HHW program is a subprogram of the Environmental Control Program. Specific information on revenues and expenditures for 1989 through 1992 for each of these programs is presented in Appendix A.

1. **Administration and General Program.** Provides for the effective planning, evaluation, and implementation of various controls and aspects of solid waste management.
2. **Material Resource Recovery Program.** Conserves landfill space by reducing municipally-generated solid waste, and by increasing the recovery of reusable materials.
3. **Disposal Operation Program.** Provides for the disposal of solid wastes in a sanitary, economic, effective, and safe manner in compliance with regulatory agencies. This program includes refuse collection and landfill disposal operations.
4. **Street Cleaning Program.** Provides for the cleaning of city streets, parking lots, and other city facilities.
5. **Systems Improvement Program.** Provides engineering and support for physical improvements at the Refuse Disposal Area so that disposal and recycling operations will be efficient, and eventual closure of the landfill will be in conformance with regulatory requirements and city policy.
6. **Environmental Control Program.** Provides environmental control programs and projects which comply with local, state, and federal mandates. This is a new program that consolidates the growing environmental protection and compliance costs associated with the closure of the landfill. These include costs for (1) the household hazardous waste program; (2) ground-water monitoring; (3) well sampling; (4) maintenance of the leachate system; (5) operation of the methane gas collection and piping system; and (6) waste discharge permits.

## **10.2 Estimated Program Costs**

Estimated costs have been determined for each of the new or expanded programs that have been identified in Section 5 for implementation during the short-term planning period. Table 8 shows the estimated capital and operating costs for each of these programs, by year, for 1991 through 1995. Capital costs include equipment purchases, and new or improved

structures. Operating costs include operations and maintenance, publications, and other promotional materials, Palo Alto staff time, and other expenses. Costs shown include those costs which will be incurred by the City, and those costs, excluding staff time, that will be incurred by PASCO. A  $\pm 5$  percent annual inflation rate is used for cost estimating.

### **10.3 Revenue Source for New and Expanded Programs**

The new and expanded programs to be implemented during the short-term planning period in the City of Palo Alto will be funded by a proposed 30 percent maximum increase in refuse collection rates. A 30 percent increase will generate monies which will be available through the Refuse Enterprise Fund. This increase is sufficient for funding the planning, development, and implementation in the short-term planning period of the selected new and expanded programs.

### **10.4 Contingency Funding Sources**

The System Improvement Reserve of the Refuse Fund currently at \$2.0 million, will serve as the main source of contingency funds. This fund will be utilized to provide for unbudgeted and emergency expenses. It will also be used to smooth year to year fluctuations in capital project expenditures and to fund landfill costs. Further funding sources and mechanisms that could be explored by Palo Alto if a shortfall in solid waste and HHW management funds occurs are as follows:

- *Rate structure modification.* This includes a subscribed variable where the level of payment varies with a measure of the volume of waste disposed.
- *Non-discretionary HHW grant* - Four million dollars is available annually for the grant program. Funding eligibility is open to cities, counties and local agencies that have implemented household hazardous programs such as construction of a permanent HHW facility, sponsorship of periodic collection day programs, and operation of load checking programs, etc.

Funds generated from these two sources will be put back in the Reserve Fund.

Table 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 (I,T)
- toilet bowl cleaners (C,T)
- floor and furniture polish (T)
- aerosol sprays (R, I)
- moth repellents (T)
- rubbing alcohol (T, I)
- silver and brass polishes (T)
- hair colorings (T)
- nail acrylics (T, I)
- hair spray (I)
- pharmaceuticals (T)

**Hobby/Workshop**

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

**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 (I)
- kerosene (I)
- car waxes (I,T)
- antifreeze (I)
- brake fluid (I,T)
- used oil (T)
- propane cylinders (I)

**Key to Symbols:**

- (C) corrosive
- (I) ignitability
- (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.

**HOUSEHOLD HAZARDOUS WASTE COLLECTION INFORMATION**

CIWMB-303 (1/90) EVENT DATES - 1/22/89, 10/21/89, 1/20/90, 4/28/90

Name of Local Agency: City of Palo Alto Phone: (415) 496-6966  
Public Works Department

Address: P.O. Box 10250 Palo Alto City: Santa Clara County: California State: Zip: 94303

(Please Use Applicable Units of Measurement)

Waste Category	Gallons	Pounds	Number of Containers	Number of Drums (55 gal)	Management Method
<b>A. Flammable</b>					
1. Used Oil	_____	_____	_____	_____	_____
2. Paints					
a. Latex	<u>4259</u>	<u>3825</u>	_____	<u>23</u>	<u>D/RU/RE/OTHER</u>
b. Oil Base	_____	<u>16010</u>	_____	<u>56</u>	<u>D/T-1</u>
3. Solvents, thinners, and stains	_____	<u>15300</u>	_____	<u>43</u>	<u>RE/OTHER</u>
4. Gasoline and oil (mixed)	_____	_____	_____	_____	_____
5. Aerosols (excluding pesticides/herbicides)	_____	<u>7230</u>	_____	<u>38</u>	<u>T-1</u>
6. Other	_____	<u>130950</u>	_____	<u>327</u>	<u>D/RE/OTHER</u>
<b>FLAMMABLE SUBTOTAL</b>	<u>4259</u>	<u>178315</u>	_____	<u>487</u>	_____

**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>B. Pesticides</b>					
Such as herbicides, insecticides, fungicides, etc.	_____	<u>15585</u>	_____	<u>54</u>	<u>D</u>
PESTICIDE SUBTOTAL	_____	<u>15585</u>	_____	<u>54</u>	_____
<b>C. Corrosives</b>					
1. Acids					
a. Oxidizing	_____	<u>4010</u>	_____	<u>13</u>	<u>D/OTHER</u>
b. Non-Oxidizing	_____	_____	_____	_____	_____
2. Alkaline	_____	<u>6710</u>	_____	<u>20</u>	<u>D</u>
CORROSIVES SUBTOTAL	_____	<u>10720</u>	_____	<u>33</u>	_____
<b>D. Oxidizers</b>					
Excluding acids	_____	<u>1637</u>	_____	<u>10</u>	<u>T-1</u>
OXIDIZERS SUBTOTAL	_____	<u>1637</u>	_____	<u>10</u>	<u>T-1</u>
<b>E. Miscellaneous</b>					
1. Car Batteries	_____	_____	_____	_____	_____
2. Dry Cells	_____	_____	_____	_____	_____
3. Mercury	_____	_____	_____	_____	_____
4. Other	_____	<u>27680</u>	_____	<u>70</u>	<u>D/OTHER</u>
MISC. SUBTOTAL	_____	<u>27680</u>	_____	<u>70</u>	_____
TOTAL WASTE COLLECTED	<u>4259</u>	<u>233937</u>	_____	<u>654</u>	_____

**Table 3**  
**Annual Quantities of Collected Wastes**

<b>Year</b>	<b>Number of Residents Participating</b>	<b>Drums Collected</b>
1983	150	30
1984	393	115
1985	406	177
1986	746	331
1987	1,034	456
1988	350	175
1989	1,004	386
1990	2,461	575

Table 4  
Summary of Alternatives Evaluation

Program Alternatives	Criteria			
	Absence of Hazard	Flexibility	Ease of Implementation	Facility Needs
Collection Events	medium	low	high	high
Permanent Facility	high	high	high	low
Mobile Collection	medium	low	high	medium
Curbside Collection	low	medium	medium	medium
Load Checking Program	medium	medium	high	high
Recycling Program	medium	high	high	medium
Public Education	high	high	high	N/A

Program Alternatives	Additional Considerations			
	Consistent Policies	Absence of Institutional Barriers	Estimated Costs	End Uses
Collection Events	high	high	low	high
Permanent Facility	high	high	low	high
Mobile Collection	low	low	low	high
Curbside Collection	medium	low	high	high
Load Checking Program	high	high	high	low
Recycling Program	high	medium	high	high
Public Education	high	high	medium	N/A

Note: the criteria have been assigned a scale of high, medium, and low, with high being positive.  
See Section 4, Evaluation Approach, for an explanation of the rating with respect to each criteria.

Table 5  
Quarterly Events

Location	Date	No. Vehicles	No. Households	New Partic.	% Partic.	Total Waste* (lbs)	No. Gal. Paint Rcl.	Cost Per Event	Cost per Drum
WQCP	07/28/90	449	536	216	2.27	18,074	1,345	\$58,410	\$460
Recy. Cen.	04/28/90	538	641	305	2.72	22,430	1,262	\$49,038	\$350
Recy. Cen.	01/20/90	423	462	232	1.96	27,197	556	\$43,276	\$346
Recy. Cen.	10/21/89	470	541	187	2.29	69,624	180	\$63,395	\$236
Recy. Cen.	07/22/89	398	463	223	1.96	25,660	2,133	\$46,674	\$389

\* Total waste collected is estimated quantity of waste before drum packaging.

Table 6  
Monthly Events

Location	Date	No. Vehicles	No. Households	New Partic.	% Partic.	Total Waste* (lbs)	No. Gal. Paint Rcl.	Cost Per Event	Cost per Drum
WQCP	09/15/90	203	215	110	0.91	10,122	195	\$25,224	\$601
WQCP	10/13/90	263	348	154	1.47	14,364	168	\$35,730	\$503
WQCP	11/03/90	231	259	126	1.10	5,592	369	\$34,360	\$563
WQCP	12/01/90	95	95	53	0.40	4,408	95	\$23,893	\$664
WQCP	01/05/91	75	84	43	0.36	3,367	55	\$18,676	\$644
WQCP	02/02/91	98	112	46	0.47	3,698	162	\$19,657	\$678
WQCP	03/02/91	128	138	63	0.58	3,000	295	\$21,122	\$640
WQCP	04/06/91	133	191	63	0.81	6,117	168	\$25,521	\$773

\* Total waste collected is estimated quantity of waste before drum packaging.

**Table 7  
HHW Alternatives  
POINT TOTALS**

<b>CRITERIA</b>	Collection Events	Permanent Facility	Mobile Collection	Curbside Collection	Load Checking Program	Recycling Program	Public Education and Information
	Absence of Hazard Flexibility	2	3	2	1	2	2
Limited Shift in Waste Type Generation	1	3	1	2	2	3	3
Facility Needs	3	3	2	3	3	3	3
Consistency with Local Policies	3	2	1	2	3	2	3
Absence of Institutional Barriers	3	3	1	2	3	3	3
Estimated Cost	1	1	1	1	3	2	3
End Uses	3	3	3	3	1	3	N/A
<b>TOTAL</b>	19	21	12	17	20	21	21

Note: The ranking system on which this table is based is explained in Section 4, Evaluation Approach.

Table 8  
Implementation Costs  
for Selected Programs

	FY 1991-1992	FY 1992-1993	FY 1993-1994	FY 1994-1995	FY 1995-1996
<b>Alternative 1 - Collection Events</b> Planning Development Implementation	310,000	325,000	340,000	357,000	375,000
<b>Alternative 2 - Permanent Collection Facility</b> Planning Development Implementation		80,000			340,000
<b>Alternative 3 - Curbside Collection of Used Oil and Antifreeze</b> Planning Development Implementation	10,000 2,200	2,300	2,400	2,500	2,600
<b>Alternative 4 - Load Checking Program</b> Planning Development Implementation	12,000	12,500	13,200	13,900	14,500
<b>Alternative 5 - Recycling Program at Drop-Off Center</b> Planning Development Implementation	7,500	7,800	8,200	8,600	9,000
<b>Alternative 6 - Public Education and Information</b> Planning Development Implementation					
<b>TOTAL</b>	<u>366,700</u>	<u>453,700</u>	<u>390,800</u>	<u>410,500</u>	<u>771,100</u>
	<u>25,000</u>	<u>26,000</u>	<u>27,000</u>	<u>28,500</u>	<u>30,000</u>





## **ACRONYMS**

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



## GLOSSARY OF TERMS

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**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 facilities.

**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 facilities, and at treatment works for water and waste water, which are collected and transported under the authorization of a jurisdiction or are self-hauled.

**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 facilities subsequent to any recycling or composting activities at those solid waste facilities; and (3) which are allowed to be considered in the establishment of the base amount of solid waste from which source reduction, recycling, and composting levels shall be calculated, pursuant to the limitations listed in Public Resources Code section 41781(b).

**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 Facilities 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<sup>1</sup>** - 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 good 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.

**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 period 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.

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<sup>1</sup> As defined by the national Recycling Advisory Council in *Recycling Times*, December 18, 1990.

**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 facilities.

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



**Two Year Budget Summary  
(Excluding SRRE Implementation Budget)**



**PUBLIC WORKS DEPARTMENT**  
Refuse Enterprise Fund Summary

SOURCE AND USE OF FUNDS STATEMENT

	<u>Actual 1988-89</u>	<u>Adopted Budget 1989-90</u>	<u>Adjusted Budget 1989-90</u>	<u>Proposed Budget 1990-91</u>	<u>% Change Adjusted Budget</u>	<u>Proposed Budget 1991-92</u>	<u>% Change Proposed Budget</u>
<b>REVENUE:</b>							
Customer Service	\$6,734,001	\$ 8,709,000	\$ 8,709,000	\$ 9,118,000	4.7%	\$10,940,000	20.0%
Disposal Area Fees	271,524	290,000	290,000	315,000	8.6	315,000	0.0
Stanford Contract	423,193	407,000	407,000	0	(100.0)	0	0.0
Interest	826,567	1,000,000	1,000,000	667,567	(33.2)	665,682	(0.3)
Other Revenue	225,945	442,100	442,100	84,600	(80.9)	88,300	4.4
Allocated Revenue	<u>117,146</u>	<u>123,000</u>	<u>123,000</u>	<u>222,530</u>	<u>80.9</u>	<u>257,704</u>	<u>15.8</u>
<b>TOTAL REVENUE</b>	<b>8,598,376</b>	<b>10,971,100</b>	<b>10,971,100</b>	<b>10,407,697</b>	<b>(5.1)</b>	<b>12,266,686</b>	<b>17.9</b>
Encumbrance/Reappropriations	394,686	0	250,500	0	(100.0)	0	0.0
From Reserves:							
System Improvement	335,189	0	459,923	3,120,283	578.4	54,421	(98.3)
Debt Service	<u>280,943</u>	<u>280,943</u>	<u>280,943</u>	<u>280,943</u>	<u>0.0</u>	<u>16,225</u>	<u>(94.2)</u>
<b>TOTAL SOURCE OF FUNDS</b>	<b>\$9,609,194</b>	<b>\$11,252,043</b>	<b>\$11,962,466</b>	<b>\$13,808,923</b>	<b>15.4%</b>	<b>\$12,337,332</b>	<b>(10.7)%</b>

**PUBLIC WORKS DEPARTMENT**  
Refuse Enterprise Fund Summary

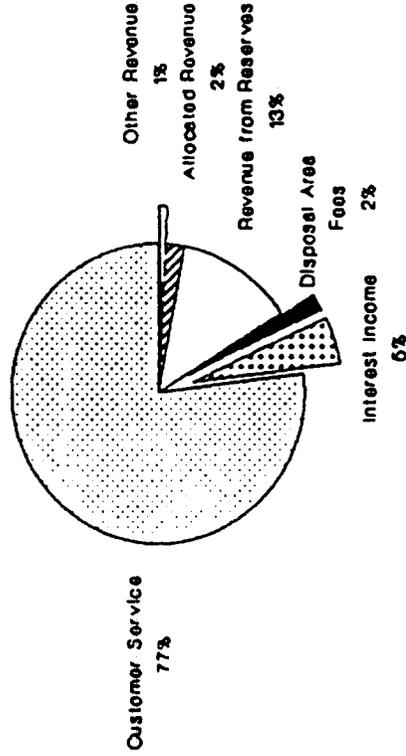
**SOURCE AND USE OF FUNDS STATEMENT**

	<u>Actual</u> <u>1988-89</u>	<u>Adopted</u> <u>Budget</u> <u>1989-90</u>	<u>Adjusted</u> <u>Budget</u> <u>1989-90</u>	<u>Proposed</u> <u>Budget</u> <u>1990-91</u>	<u>% Change</u> <u>Adjusted</u> <u>Budget</u>	<u>Proposed</u> <u>Budget</u> <u>1991-92</u>	<u>% Change</u> <u>Proposed</u> <u>Budget</u>
<b><u>APPLIED TO:</u></b>							
Purchases	\$4,275,105	\$ 3,708,000	\$ 3,708,000	\$ 4,223,000	13.9 %	\$ 4,392,000	4.0 %
Operating Expenditures	1,808,433	2,589,741	2,969,056	2,798,599	(5.7)	2,905,069	3.8
Capital Expenditures	792,268	290,000	753,000	1,193,316	58.5	15,159	(98.7)
Contingency	0	99,500	99,500	117,000	17.6	124,000	6.0
Allocated Charges	1,177,385	1,462,457	1,462,457	1,378,838	(5.7)	1,548,263	12.3
Debt Service	280,943	280,943	280,943	280,943	0.0	16,225	(94.2)
Transfers:							
Facilities Rent	1,275,060	2,474,100	2,474,100	2,663,781	7.7	2,796,970	5.0
Vehicle Replacement Fund				188,000	-		(100.0)
Other Operating Transfers	0	13,550	215,410	0	(100.0)	0	0.0
To Reserves:							
System Improvement Reserve	0	333,752	0	0	0.0	0	0.0
Advance Reserve	0	0	0	426,000	-		(100.0)
Landfill Closure Reserve	0	0	0	539,446	-	539,446	0.0
<b>TOTAL USE OF FUNDS</b>	<b>\$9,609,194</b>	<b>\$11,252,043</b>	<b>\$11,962,466</b>	<b>\$13,808,923</b>	<b>15.4 %</b>	<b>\$12,337,332</b>	<b>(10.7)%</b>

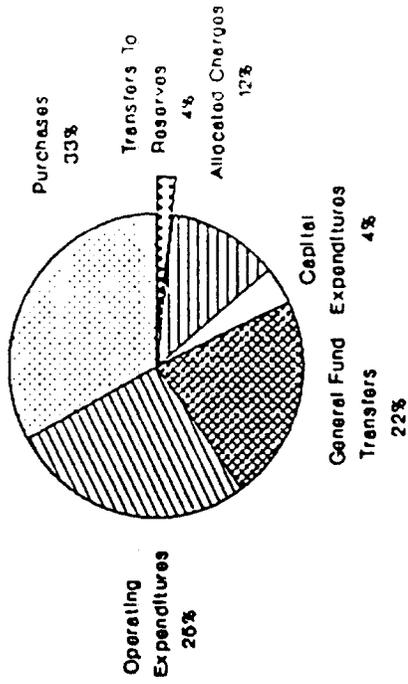
1990-91 & 1991-92

# PUBLIC WORKS DEPARTMENT REFUSE FUND

SOURCE OF REVENUE



DISTRIBUTION OF EXPENDITURES



# PUBLIC WORKS DEPARTMENT

## Refuse Enterprise Fund Summary

### EXPENDITURES

<u>BY PROGRAM</u>	<u>Actual 1988-89</u>	<u>Adopted Budget 1989-90</u>	<u>Adjusted Budget 1989-90</u>	<u>Proposed Budget 1990-91</u>	<u>% Change Adjusted Budget</u>	<u>Proposed Budget 1991-92</u>	<u>% Change Proposed Budget</u>
Administration and General	\$1,215,302	\$ 1,587,878	\$ 1,694,448	\$ 1,305,061	(23.0)%	\$ 1,379,518	5.7 %
Material Resource Recovery	183,526	293,574	326,638	471,694	44.4	502,011	6.4
Disposal Operation	871,153	1,012,473	1,034,424	825,010	(20.2)	928,245	12.5
Street Cleaning	493,822	570,773	593,603	627,548	5.7	684,165	9.0
System Improvement	221,088	587,500	782,400	154,000	(80.3)	154,000	0.0
Environmental Control	<u>0</u>	<u>0</u>	<u>0</u>	<u>794,124</u>	<u>-</u>	<u>805,393</u>	<u>1.4</u>
<b>TOTAL PROGRAM EXPENSE</b>	<b>2,984,891</b>	<b>4,052,198</b>	<b>4,431,513</b>	<b>4,177,437</b>	<b>(5.7)</b>	<b>4,453,332</b>	<b>6.6</b>
Contingency	0	99,500	99,500	117,000	17.6	124,000	6.0
Advance Reserve	0	0	0	426,000	-	0	(100.0)
Purchases	4,275,105	3,708,000	3,708,000	4,223,000	13.9	4,392,000	4.0
Capital Expenditures	792,268	290,000	753,000	1,193,316	58.5	15,359	(98.7)
Facilities Rental	1,275,060	2,474,100	2,474,100	2,663,781	7.7	2,796,970	5.0
Operating Transfers	0	13,550	215,410	188,000	(12.7)	0	(100.0)
Allocated Charges	927	0	0	0	0.0	0	0.0
Debt Service	<u>280,943</u>	<u>280,943</u>	<u>280,943</u>	<u>280,943</u>	<u>0.0</u>	<u>16,225</u>	<u>(94.2)</u>
<b>TOTAL EXPENDITURES</b>	<b>\$9,609,194</b>	<b>\$10,918,291</b>	<b>\$11,962,466</b>	<b>\$13,269,477</b>	<b>10.9 %</b>	<b>\$11,797,886</b>	<b>(11.1)%</b>

# PUBLIC WORKS DEPARTMENT

## Refuse Enterprise Fund Summary

### EXPENDITURES

<u>BY CATEGORY</u>	Actual 1988-89	Adopted Budget 1989-90	Adjusted Budget 1989-90	Proposed Budget 1990-91	% Change Adjusted Budget	Proposed Budget 1991-92	% Change Proposed Budget
Employee Services	\$ 959,205	\$ 1,113,572	\$ 1,180,387	\$ 1,249,556	5.9 %	\$ 1,328,673	6.3 %
Contract Services	390,162	1,038,825	1,261,625	1,014,900	(19.6)	1,014,900	0.0
Supplies & Materials	166,219	231,900	268,000	204,240	(23.8)	204,240	0.0
General Expense	93,984	176,944	210,544	292,168	38.8	323,756	10.8
Rents & Leases	2,828	10,000	10,000	10,000	0.0	10,000	0.0
Fac & Equip Purchases	196,035	18,500	38,500	27,785	(27.8)	23,500	(15.4)
Capital Expenditures	792,268	290,000	753,000	1,193,316	58.5	15,359	(98.7)
Purchases	4,275,105	3,708,000	3,708,000	4,223,000	13.9	4,392,000	4.0
Debt Service	280,943	280,943	280,943	280,943	0.0	16,225	(94.2)
Contingency	0	99,500	99,500	117,000	17.6	124,000	6.0
Advance Reserve				426,000	-		(100.0)
Facilities Rental	1,275,060	2,474,100	2,474,100	2,663,781	7.7	2,796,970	5.0
Allocated Charges	1,177,385	1,462,457	1,462,457	1,378,838	(5.7)	1,548,263	12.3
Operating Transfers		<u>13,550</u>	<u>215,410</u>	<u>188,000</u>	<u>(12.7)</u>	<u>0</u>	<u>(100.0)</u>
<b>TOTAL EXPENDITURES</b>	<b>\$9,609,194</b>	<b>\$10,918,291</b>	<b>\$11,962,466</b>	<b>\$13,269,527</b>	<b>10.9 %</b>	<b>\$1,797,886</b>	<b>(11.1)%</b>

# PUBLIC WORKS DEPARTMENT

## Refuse Enterprise Fund Summary

### EXPENDITURES

	<u>PERSONNEL</u>			
Regular	24.00	25.00	26.00	26.00
Temporary	1.00	1.00	1.00	1.00
Overtime	<u>.45</u>	<u>.45</u>	<u>.45</u>	<u>.45</u>
<b>TOTAL PERSONNEL</b>	<b>25.45</b>	<b>26.45</b>	<b>27.45</b>	<b>27.45</b>

### EXPLANATION OF CHANGES

No rate increase is proposed for 1990-91, while a 20 percent rate increase is proposed for 1991-92. Customer Service Revenue is increasing in 1990-91 to correspond with actual revenue receipts from 1989-90. The rate increase in 1991-92 is required to meet costs for expanded environmental control and recycling mandates. New ongoing costs include a State tax on landfill tonnage to fund State solid waste related programs, as well as approximately \$539,000 annually to set up a mandated Landfill Closure and Post-closure Maintenance Reserve. The State requires landfill operators to set aside funds over time to cover all projected landfill closure and post-closure maintenance costs. Finally, a one-time study is proposed for 1990-91 to meet State mandates to reduce landfill disposal by 25 percent in 1995 and 50 percent by the year 2000.

A new program, Environmental Control, is proposed for 1990-91, consolidating various environmental costs into one program. A new position, added mid-year in 1989-90, Manager of Environmental Control, will manage the program. 1991-92 is also the last scheduled debt service payment to be made on the former Los Altos Treatment Plant site, after which the Refuse Fund will own half interest in the site.

**PUBLIC WORKS DEPARTMENT**  
Refuse Enterprise Fund

ADMINISTRATION AND GENERAL PROGRAM

PURPOSE/GOAL:

To provide for the effective planning, evaluation, and implementation of various controls and aspects of Solid Waste Management.

<u>EXPENDITURE CATEGORY</u>	<u>Actual 1988-89</u>	<u>Adopted Budget 1989-90</u>	<u>Adjusted Budget 1989-90</u>	<u>Proposed Budget 1990-91</u>	<u>% Change Adjusted Budget</u>	<u>Proposed Budget 1991-92</u>	<u>% Change Proposed Budget</u>
Employee Services	\$ 190,473	\$ 201,162	\$ 213,232	\$ 102,556	(51.9)%	\$ 108,979	6.3%
Contract Services	137,865	231,600	293,600	2,600	(99.1)	2,600	0.0
Supplies & Materials	2,010	5,000	5,000	5,000	0.0	5,000	0.0
General Expense	67,764	162,494	194,994	221,768	13.7	253,406	14.3
Fac & Equip Purchases	9,985						
Allocated Charges	<u>807,205</u>	<u>987,622</u>	<u>987,622</u>	<u>973,137</u>	<u>(1.5)</u>	<u>1,009,533</u>	<u>3.7</u>
Total Expenditures	\$1,215,302	\$1,587,878	\$1,694,448	\$1,305,061	(23.0)%	\$1,379,518	5.7%

1990-91

EXPLANATION OF CHANGES

Proposed Employee Services funding is decreasing, as two existing positions are being transferred to the newly created Environmental Control program. Contract Services is decreasing, as funding for Household Hazardous Waste disposal is also being shifted to the new Environmental Control program. General Expenses are increasing to meet Assembly Bill 939's charges on landfills to fund State recycling efforts.

1991-92

General Expenses are increasing for a higher charge from the State for recycling in 1992.

PUBLIC WORKS DEPARTMENT

Refuse Enterprise Fund

MATERIAL RESOURCE RECOVERY PROGRAM

PURPOSE/GOAL:

To conserve landfill space by reducing municipally-generated solid waste, and by increasing the recovery of reusable materials.

EXPENDITURE CATEGORY

	Actual 1988-89	Adopted Budget 1989-90	Adjusted Budget 1989-90	Proposed Budget 1990-91	% Change Adjusted Budget	Proposed Budget 1991-92	% Change Proposed Budget
Employee Services	\$ 91,093	\$184,403	\$195,467	\$196,989	0.8 %	\$209,965	6.6 %
Contract Services	4,760	42,625	43,525	192,000	341.1	192,000	0.0
Supplies & Materials	4,767	13,300	13,300	16,290	22.5	16,290	0.0
General Expense	1,822	2,450	3,550	2,850	(19.7)	2,850	0.0
Rents & Leases	572	1,000	1,000	1,000	0.0	1,000	0.0
Fac & Equip Purchase	17,133	12,500	32,500	21,785	(33.0)	17,500	(19.7)
Allocated Charges	63,379	37,296	37,296	40,780	9.3	62,406	53.0
Total Expenditures	\$183,526	\$293,574	\$326,638	\$471,694	44.4 %	\$502,011	6.4 %

1990-91

EXPLANATION OF CHANGES

Contract Services are increasing to fund a one-time study on options for meeting State recycling mandates. Facilities and Equipment Purchase expenses are decreasing due to one-time purchases during 1989-90 for recycling bins.

1991-92

Facilities and Equipment Purchase expenses are decreasing due to one-time purchases during 1990-91 for computer equipment. Allocated Charges are increasing for higher vehicle replacement charges.

# PUBLIC WORKS DEPARTMENT

## Refuse Enterprise Fund

### STREET CLEANING PROGRAM

**PURPOSE/GOAL:**

To maintain the streets, bike paths, parking lots, alleyways, and other City facilities in a clean and safe condition.

<u>EXPENDITURE CATEGORY</u>	<u>Actual 1988-89</u>	<u>Adopted Budget 1989-90</u>	<u>Adjusted Budget 1989-90</u>	<u>Proposed Budget 1990-91</u>	<u>% Change Adjusted Budget</u>	<u>Proposed Budget 1991-92</u>	<u>% Change Proposed Budget</u>
Employee Services	\$328,281	\$380,495	\$403,325	\$400,818	(0.6)%	\$426,025	6.3%
Contract Services	24,478	46,300	46,300	49,300	6.5	49,300	0.0
Supplies & Materials	11,536	12,750	12,750	12,650	(0.8)	12,650	0.0
General Expense	206						
Fac & Equip Purchase	3,710	5,000	5,000	5,000	0.0	5,000	0.0
Allocated Charges	<u>125,611</u>	<u>126,228</u>	<u>126,228</u>	<u>159,780</u>	<u>26.6</u>	<u>191,190</u>	<u>19.7</u>
Total Expenditures	\$493,822	\$570,773	\$593,603	\$627,548	5.7 %	\$684,165	9.0%

### EXPLANATION OF CHANGES

1990-91 and 1991-92

Allocated Charges are increasing due to higher vehicle replacement charges for street sweeping vehicles.

PUBLIC WORKS DEPARTMENT

Refuse Enterprise Fund

DISPOSAL OPERATION PROGRAM

PURPOSE/GOAL:

To dispose of solid wastes in a sanitary, economical, effective and safe manner in compliance with regulatory agencies.

<u>EXPENDITURE CATEGORY</u>	<u>Actual 1988-89</u>	<u>Adopted Budget 1989-90</u>	<u>Adjusted Budget 1989-90</u>	<u>Proposed Budget 1990-91</u>	<u>% Change Adjusted Budget</u>	<u>Proposed Budget 1991-92</u>	<u>% Change Proposed Budget</u>
Employee Services	\$ 349,358	\$ 347,512	\$ 368,363	\$ 369,969	0.4 %	\$ 393,211	6.3%
Contract Services	160,534	260,800	260,800	166,300	(36.2)	166,300	0.0
Supplies & Materials	11,622	80,850	81,950	71,600	(12.6)	71,600	0.0
General Expense	1,913	2,000	2,000	2,000	0.0	2,000	0.0
Rents & Leases	2,256	9,000	9,000	9,000	0.0	9,000	0.0
Fac & Equip Purchases	165,207	1,000	1,000	1,000	0.0	1,000	0.0
Allocated Charges	<u>180,263</u>	<u>311,311</u>	<u>311,311</u>	<u>205,141</u>	<u>(34.1)</u>	<u>285,134</u>	<u>39.0</u>
Subtotal	871,153	1,012,473	1,034,424	825,010	(20.2)	928,245	12.5
Payments to PASCO	<u>4,275,105</u>	<u>3,708,000</u>	<u>3,708,000</u>	<u>4,223,000</u>	<u>13.9</u>	<u>4,392,000</u>	<u>4.0</u>
Total Expenditures	\$5,146,258	\$4,720,473	\$4,742,424	\$5,048,010	6.4 %	\$5,320,245	5.4%

EXPLANATION OF CHANGES

Contract Services are decreasing, as costs for the landfill gas collection system maintenance have been shifted to the new Environmental Control program. Supplies and Materials are decreasing, as dirt cover purchases for State performance requirements have gone down with the availability of some amounts of free dirt from various contractors. Allocated Charges are decreasing to comply with a changing methodology of spreading city overhead costs to Refuse. Payments to PASCO are increasing to fund: general salary increases; a higher rate of return target due to a higher fixed asset base; and higher operating expenses due to changes in the City's curbside compostable debris collection program.

**PUBLIC WORKS DEPARTMENT**

**Refuse Enterprise Fund**

**SYSTEMS IMPROVEMENT PROGRAM**

**PURPOSE/GOAL:**

To provide engineering and support for physical improvements at the Refuse Disposal area so that disposal and recycling operations will be efficient, and the eventual closure will be environmentally acceptable to regulatory agencies and the community.

<u>EXPENDITURE CATEGORY</u>	<u>Actual 1988-89</u>	<u>Adopted Budget 1989-90</u>	<u>Adjusted Budget 1989-90</u>	<u>Proposed Budget 1990-91</u>	<u>% Change Adjusted Budget</u>	<u>Proposed Budget 1991-92</u>	<u>% Change Proposed Budget</u>
Contract Services	\$ 62,525	\$457,500	\$617,400	\$ 54,000	(91.3)%	\$ 54,000	0.0%
Supplies & Materials	136,284	120,000	155,000	90,000	(41.9)	90,000	0.0
General Expense	<u>22,279</u>	<u>10,000</u>	<u>10,000</u>	<u>10,000</u>	<u>0.0</u>	<u>10,000</u>	<u>0.0</u>
<b>Total Expenditures</b>	<b>\$221,088</b>	<b>\$587,500</b>	<b>\$782,400</b>	<b>\$154,000</b>	<b>(80.3)%</b>	<b>\$154,000</b>	<b>0.0%</b>

**1990-91** **EXPLANATION OF CHANGES**

Contract Services are decreasing, as various landfill costs have been shifted to the capital budget.

**PUBLIC WORKS DEPARTMENT**  
**Refuse Enterprise Fund**

**ENVIRONMENTAL CONTROL PROGRAM**

**PURPOSE/GOAL:**

To provide environmental control programs and projects which comply with local, state and federal mandates.

<b><u>EXPENDITURE CATEGORY</u></b>	<b><u>Actual 1988-89</u></b>	<b><u>Adopted Budget 1989-90</u></b>	<b><u>Adjusted Budget 1989-90</u></b>	<b><u>Proposed Budget 1990-91</u></b>	<b><u>% Change Adjusted Budget</u></b>	<b><u>Proposed Budget 1991-92</u></b>	<b><u>% Change Proposed Budget</u></b>
Employee Services				\$179,224	-	\$190,493	6.3%
Contract Services				550,700	-	550,700	0.0
Supplies & Materials				8,700	-	8,700	0.0
General Expense				<u>55,500</u>	-	<u>55,500</u>	<u>0.0</u>
Total Expenditures				\$794,124	-	\$805,393	1.4%

**EXPLANATION OF CHANGES**

**1990-91 and 1991-92**

A new program is proposed, staffed by the addition of one Manager of Environmental Control, which was added mid-year in 1989-90. In addition, two positions previously budgeted in Administration and General have been shifted to this program. The program will consolidate the growing environmental protection and compliance costs facing the landfill. These costs include:

- o Household Hazardous Waste Program
- o Groundwater monitoring
- o Well sampling
- o Maintenance on the leachate system, methane gas collection and piping system.
- o Waste discharge permits

**Revised Budget Summary  
(Including SRRE Implementation Budget)**



**ENTERPRISE FUNDS  
PUBLIC WORKS DEPARTMENT  
Refuse Fund**

	<u>Actual</u> <u>1989-90</u>	<u>Adjusted</u> <u>Budget</u> <u>1990-91</u>	<u>Original</u> <u>Budget</u> <u>1991-92</u>	<u>Adjustments</u>	<u>Proposed</u> <u>Budget</u> <u>1991-92</u>
<u>Revenues:</u>					
Sales to Customers	8,811,278	9,118,000	10,940,000	993,835 (1)	11,933,835
Sales to City Departments	161,003	222,530	190,999	17,855 (1)	208,854
Interest Income	789,526	667,567	665,682	(17,242) (2)	648,440
Other Income	1,330,647	535,201	470,005		470,005
<b>Total Revenues</b>	<b>\$11,092,454</b>	<b>\$10,543,298</b>	<b>\$12,266,686</b>	<b>\$994,448</b>	<b>\$13,261,134</b>
<b>Use of Reappropriation/ Encumbrance Reserves</b>	<b>0</b>	<b>3,108,156</b>	<b>0</b>		<b>0</b>
<b>From Reserves</b>	<b>240,119</b>	<b>4,094,181</b>	<b>763,836</b>	<b>(747,836) (3)</b>	<b>16,000</b>
<b>Total Source of Funds</b>	<b>\$11,332,573</b>	<b>\$17,745,635</b>	<b>\$13,030,522</b>	<b>\$246,612</b>	<b>\$13,277,134</b>
<u>Expenditures:</u>					
Utility Purchases	4,586,908	4,895,000	5,091,000	94,066 (4)	5,185,066
Salaries & Benefits	1,134,684	1,243,102	1,409,672	177,376 (5)	1,587,048
Contract Services	531,905	1,685,929	1,014,900	70,000 (6)	1,084,900
Supplies & Materials	44,413	210,989	204,240		204,240
General Expenses	187,639	604,785	350,981		350,981
Rents & Leases	7,201	10,000	10,000		10,000
Facilities & Equipment Purchases	36,165	29,086	23,500		23,500
Contingencies	0	473,000	43,000		43,000
Allocated Charges	1,472,772	1,379,711	1,537,738	(17,410) (7)	1,520,328
<b>Subtotal</b>	<b>\$8,001,687</b>	<b>\$10,531,602</b>	<b>\$9,685,031</b>	<b>\$324,032</b>	<b>\$10,009,063</b>

**ENTERPRISE FUNDS  
PUBLIC WORKS DEPARTMENT**

<b>Refuse Fund</b>	<b>Actual 1989-90</b>	<b>Adjusted Budget 1990-91</b>	<b>Original Budget 1991-92</b>	<b>Adjustments</b>	<b>Proposed Budget 1991-92</b>
<b>Operating Transfers Out:</b>					
General Fund	2,439,360	2,675,095	2,797,000	(110,370) (8)	2,686,630
Capital Improvement Program	13,548	112,448	9,491	(1,297) (9)	8,194
Vehicle Replacement Fund	201,860	188,000	0		0
<b>Total Transfers</b>	<b>2,654,768</b>	<b>2,975,543</b>	<b>2,806,491</b>	<b>(111,667)</b>	<b>2,694,824</b>
<b>Total Operating Expenditures</b>	<b>\$10,656,455</b>	<b>\$13,507,145</b>	<b>\$12,491,522</b>	<b>\$212,365</b>	<b>\$12,703,887</b>
<b>Capital Expenditures</b>	<b>676,118</b>	<b>3,699,490</b>	<b>0</b>		<b>0</b>
<b>Landfill Closure Reserve</b>	<b>0</b>	<b>539,000</b>	<b>539,000</b>	<b>29,000 (10)</b>	<b>568,000</b>
<b>Balance to Reserves</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5,247</b>	<b>5,247</b>
<b>Total Use of Funds</b>	<b>\$11,332,573</b>	<b>\$17,745,635</b>	<b>\$13,030,522</b>	<b>\$246,612</b>	<b>\$13,277,134</b>

**Explanation of Proposed Adjustments:**

- (1) A rate increase of 30% is recommended to cover increased costs for recycling and a more frequent household hazardous waste program, and to maintain the System Improvement Reserve (SIR) close to recommend level of \$2.0 million. Higher costs are highlighted in 4-10 below.
- (2) Reduced interest earnings as reserves were reduced in 1990-91 in-lieu of a rate increase.

**PUBLIC WORKS-Refuse Fund (continued)**

- (3) Proposed rate increase will eliminate the amount of funding that would come out of reserves, and will provide additional funding to the reserve of \$5,247.
- (4) PASCO costs have increased due to higher gasoline and vehicle maintenance and additional recycling equipment costs.
- (5) Changes reflect 3 new positions (Solid Waste Manager, (2) Program Assistants), and social security coverage for temporary employees in compliance with federal mandates.
- (6) Increase reflects the change of frequency from quarterly to monthly for the Household Hazardous Waste events.
- (7) Reduction in Allocated Charges is for a reduction in vehicle rentals somewhat offset by additional charge for bill processing expense.
- (8) Rent payments to General Fund are decreasing due to partial closure of the landfill.
- (9) Reduced CIP reimbursement to the General Fund.
- (10) Earlier estimate for Landfill Closure Reserve payment increased to comply with State mandates.

**PUBLIC WORKS-Refuse Fund (continued)**

**CHANGES TO PERFORMANCE MEASURES 1991-92:**

	<u>1990-91</u>	<u>1991-92</u>	<u>1991-92</u>	<u>1991-92</u>
	<u>TARGET</u>	<u>TARGET</u>	<u>CHANGE</u>	<u>REVISED</u>
<b>Environmental Control Program:</b>				
Household hazardous waste pickups	4	4	8	12
Increase in performance is due to hazardous waste pickups changed from quarterly to monthly.				
<b>Street Cleaning Program:</b>				
Cubic yards of leaves for processing at City composite site	20,000	20,000	10,000	30,000

Increase in performance is due to startup of curbside compostable program last fiscal year.