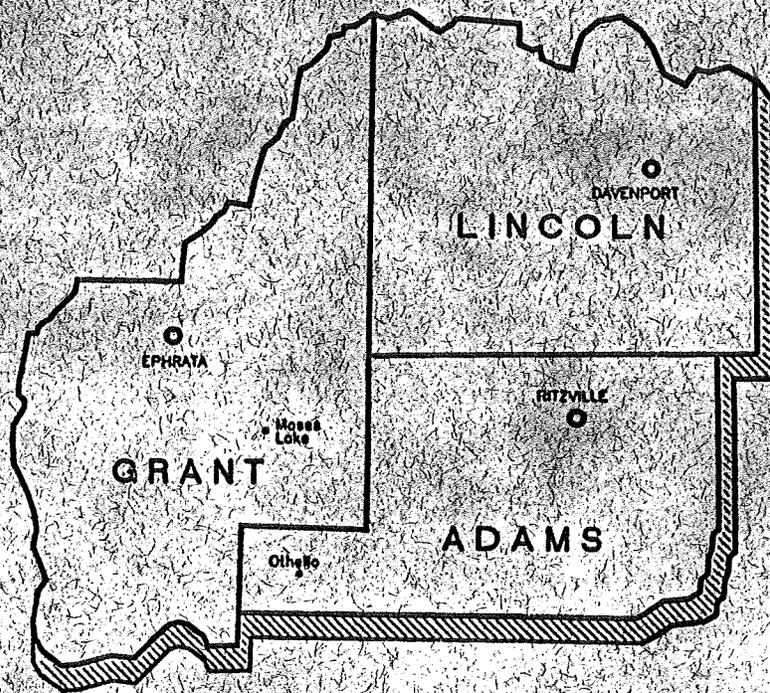


# REGIONAL LOCAL HAZARDOUS WASTE MANAGEMENT PLAN



## GRANT, ADAMS AND LINCOLN COUNTIES

December 1991

**R.W. BECK**  
**AND ASSOCIATES**



**REGIONAL LOCAL HAZARDOUS WASTE  
MANAGEMENT PLAN  
FOR  
GRANT, ADAMS AND LINCOLN COUNTIES**

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## LIST OF ABBREVIATIONS

Abbreviations used in this document include the following:

Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
Guidelines	Planning Guidelines for Local Hazardous Waste Plans
HHW	Household Hazardous Waste
HW Committee	Regional Local Hazardous Waste Plan Advisory Committee
MRW	Moderate Risk Waste (HHW and SQG Wastes)
MSW	Municipal Solid Waste
Plan	Grant, Adams and Lincoln Counties Regional Local Hazardous Waste Management Plan
POTWs	Publicly Owned Treatment Works
Region	Grant, Adams and Lincoln Counties
SQG	Small Quantity Generator
TSD	Hazardous Waste Treatment, Storage and Disposal Facility
Wastewater	Municipal Sewage or Septage

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### REGIONAL LOCAL HAZARDOUS WASTE PLAN ADVISORY COMMITTEE

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This plan was written by David Nightingale of R. W. Beck and Associates with assistance from Diane Pottinger, Tom Blood, Janice Yoshida, and Richard Clark. Brown, Vence and Associates also provided technical assistance primarily for the MRW inventory in Section IV.

**SECTION I**  
**INTRODUCTION, PUBLIC PARTICIPATION,**  
**AND GOALS**

**1. INTRODUCTION - HAZARDOUS WASTE AND THE PLANNING PROCESS**

This document is the Grant, Adams, and Lincoln Counties Regional Local Hazardous Waste Management Plan (Plan). The purpose of the Plan is to develop a document that, when adopted, will direct and guide the management of Moderate Risk Hazardous Wastes in Grant, Adams, and Lincoln Counties (the region). The recommendations which are developed in this Plan are designed to be implemented within the ensuing 5 years after adoption and are based on existing conditions and forecasts of future conditions in the region. To the extent that future conditions vary from these forecasts, the Plan will need to be revised or selected programs adjusted during the 5-year implementation time frame.

The primary focus of the Plan is on Moderate Risk Hazardous Wastes, also referred to simply as Moderate Risk Waste or MRW. MRW includes hazardous wastes generated by households or by certain businesses in small enough quantities that they are not regulated as hazardous wastes by State or Federal environmental agencies. These agencies are typically the Washington State Department of Ecology (Ecology) and United States Environmental Protection Agency (EPA).

This Plan includes the geographic area of Grant, Adams, and Lincoln Counties, both incorporated and unincorporated, and the lead agency in its development has been the Grant County Department of Public Works. The incorporated areas in the region have submitted documents of concurrence with the Plan. See Appendix A.

This is the first Plan developed for the region and has an implementation time frame of 5 years. Future updates of the Plan must have at least a 20-year planning horizon. The Plan was developed in accordance with the Hazardous Waste Management Act as amended in 1985 (70.105 RCW) which requires a draft plan by June 30, 1990 and implementation of the Plan by December 31, 1991. The Plan was also developed in coordination with, and within the overall constraints of, the region's Solid Waste Management Plans. This Plan was developed under the guidance and essential input of a nine-member Regional Local Hazardous Waste Plan Advisory Committee (HW Committee) consisting of three members from each of the three counties in the region. It is comprised of citizens, local business and governmental representatives. The Grant County Public Works Director, Solid Waste Supervisor, Ecology and Consultant representatives are ex-officio members of the HW Committee.

**a. Overview of the Hazardous Waste Problem  
and Regulations/Requirements**

The following discussion reviews the underlying problems related to local management of hazardous waste, focusing on the unregulated generators of these wastes.

Then, regulations pertaining to hazardous waste and planning requirements for local jurisdictions are briefly reviewed.

### **(1) The Local Hazardous Waste Problem**

The majority of MRWs are deposited in the municipal solid waste (MSW) stream, which is typically sent to local landfills, or they enter the sewer or septic systems.

MRW disposed of through the garbage, wastewater systems, poured on the ground, burned in a burn barrel, or through other improper methods create short- and long-term hazards. These hazards include potential damage or injury to: waste system equipment and workers, ground water and air purity, and the environmental resources upon which the public depends. For example, a car battery placed in a local garbage can leak acid that will ruin a metal garbage can. Other problems associated with a car battery disposed of in the garbage include its potential to chemically burn the waste collection workers, damage the collection vehicle and landfill machinery, combine with other materials in the landfill to create gases and/or react violently, and eventually leach acid and lead into the local ground water supply. Similarly, a pesticide, solvent or acid disposed of in a septic system often shuts down septic systems and could contaminate the local aquifer and water wells. Some publicly owned wastewater treatment works have been shut down due to the introduction of hazardous wastes into their systems. Furthermore, the residual sludges from these systems disposed of through land application in the region allow any residual hazardous wastes to enter the environment.

To mitigate these types of problems in the region, this Plan will identify targeted MRW for which the elimination of intentional disposal by landfilling, wastewater treatment, open burning, dumping and other inappropriate techniques will be the ultimate goal. This is in accordance with the Planning Guidelines For Local Hazardous Waste Management Plans (Guidelines) which were developed by Ecology for use by local planning jurisdictions under the State Hazardous Waste Management Act, Chapter 70.105 RCW.

It is estimated that 20% of all the current hazardous waste sites on the Federal EPA Superfund list were originally established as local municipal solid waste landfills. Because household, small and large quantity business generators of hazardous waste used these landfills for disposal of all their wastes, they are now very costly cleanup sites. To avoid the likelihood of this occurring at current landfills, the EPA and Ecology are encouraging local jurisdictions to find ways to reduce the generation of MRW and manage appropriately the MRW that continues to be generated.

If a municipal landfill were to become a superfund cleanup site, the EPA has indicated that any future liability for the cleanup would not be reduced in any way if the apparent cause of the contamination was due to MRW versus any other

hazardous waste sources. It appears that the EPA believes that there are no liability exclusions for superfund sites based on the source of contamination. In order to reduce the likelihood of local landfills becoming hazardous waste superfund cleanup sites, local jurisdictions now have the opportunity, and requirement from Ecology, to prepare Local Hazardous Waste Management Plans and implement their recommendations.

## **(2) Hazardous/Dangerous Waste Regulations**

Federal and State laws and regulations define the context in which all hazardous wastes, whether regulated or not, are managed, as well as the terminology used to discuss these wastes and waste management systems. Consequently, a brief overview of these pertinent hazardous waste laws, regulations, and their purposes are developed below.

### **(a) Federal**

In 1976 Congress passed the Resource Conservation and Recovery Act (RCRA) which established Federal policy and guidance for solid and hazardous wastes. RCRA was amended in 1980 by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as "Superfund," for the Federal cleanup of hazardous waste sites. RCRA Subtitle C includes the hazardous waste regulations. This subtitle was modified by RCRA amendments on November 8, 1984 to reduce the threshold of regulation for non-households down from facilities that generate 1,000 kilograms to 100 kilograms (about 220 pounds) of hazardous waste per month or batch. (Below the 100-kilogram or 220-pound generation regulatory thresholds are a category of generators called small quantity generators or SQGs according to Washington State terminology.)

On October 17, 1986, the Superfund Amendments and Reauthorization Act of 1986 (SARA) was enacted by Congress. This reauthorized RCRA and also included new local requirements for hazardous waste planning and response. Title III of SARA contained the Emergency Planning and Community Right-to-Know Act of 1986 which impacts local governments, businesses and citizens. The four major sections of Title III are Emergency Planning, Emergency Notification, Community Right-to-Know Reporting Requirements, and Toxic Chemical Release Reporting-Emissions Inventory. This legislation is aimed at helping businesses, governments, emergency services organizations, and communities to meet their responsibilities in regard to potential chemical emergencies as well as to increase the public's knowledge and access to information on the presence of hazardous chemicals

in their community and releases of these chemicals into the environment.

These federal laws are aimed primarily at the larger quantity fully regulated business generators of hazardous wastes and not the categories of businesses that generate MRW, SQGs. Because SQGs are not regulated does not imply that the proper management of their wastes is less important. They are unregulated as hazardous waste generators primarily for practical administrative reasons. Additionally, hazardous wastes generated by households are categorically exempt from federal regulation but also have the potential for creating public health hazards.

**(b) Washington State**

Ecology has the authority to implement most of the RCRA regulations with the notable exception of the Superfund cleanup programs. Consequently, Ecology regulates the larger hazardous waste generators in Washington instead of the EPA. If the non-household business generator creates 220 pounds or more of hazardous waste per month or batch or 2.2 pounds or more per month or batch of acutely hazardous waste according to the EPA definitions for these substances, the businesses are regulated by Ecology and are classified as a hazardous waste generator. Below these threshold quantities, hazardous waste generated by non-households are conditionally exempt from the hazardous waste regulations and are called SQGs.

Any non-household generator of waste has the potential to become an SQG. Under the Dangerous Waste Regulations, 173-303 WAC, an SQG must determine that it does not generate more than 220 pounds, approximately half of a 55-gallon drum, of dangerous waste or 2.2 pounds of extremely hazardous waste per month or batch. Solid wastes that do not meet the State characteristics or criteria in the dangerous waste regulations and hazardous materials that are to be used or sold should be excluded when determining the quantity of hazardous wastes generated per month or batch.

For non-household generators that are SQGs, there are relatively few requirements that they must follow in handling their wastes. According to EPA's "Understanding the Small Quantity Generator Hazardous Waste Rules: A Handbook for Small Business" and an SQG guide developed by Ecology and various agencies in the Puget Sound region called, "Hazardous Waste Disposal: A Guide for Businesses," the SQG requirements are as follows:

1. Determine the amounts, if any, of hazardous waste generated per month or per batch to verify your SQG status.
2. Identify why the waste is hazardous by determining whether it has dangerous waste characteristics: Ignitable, Corrosive, Reactive, EP Toxic, Carcinogenic, Persistent, or Toxic.
3. Properly package and label the hazardous waste according to the dangerous waste regulation.
4. Ensure that the wastes are delivered to either:
  - A permitted TSD facility,
  - A legitimate recycler, or
  - A licensed municipal landfill that will accept the waste. Local Health Departments generally determine what wastes are acceptable. Approval from the facility must be received prior to delivering hazardous wastes. Although this is a legal disposal method it is usually discouraged and is considered improper disposal for MRW.

A fifth requirement is that SQG's need to manage their MRW according to the recommendations of this plan.

Ecology's Dangerous Waste Regulations (Chapter 173-303 WAC), as the name implies, makes a distinction from "hazardous waste" in the Federal laws to "dangerous waste" in the State laws. Similarly "acutely hazardous waste" in the Federal law is approximated by the term "extremely hazardous waste" in the State law. This is needed to identify the slightly more stringent standards and inclusive number and type of wastes regulated by Ecology. Nonetheless, the generic term "hazardous waste" is commonly used to refer to all regulated hazardous wastes by the EPA and Ecology.

Ecology regulates the handling, storage, treatment, transportation, and disposal of hazardous wastes within Washington for generators that exceed the regulatory thresholds mentioned above under the Hazardous Waste Management Act (70.105 RCW) and the Model Toxics Control Act (70.105D RCW). Ecology has defined the term "Moderate Risk Waste" (MRW) for hazardous waste created in the home regardless of the quantity, and for SQGs. Both these sources are targets for this MRW plan.

Substances which are considered hazardous include those listed by the EPA and those which exhibit certain characteristics which include: Toxic (poisonous), Carcinogenic (causes cancer), Reactive (reacts violently with air or water, or is explosive), Corrosive (like acids and drain openers), Ignitable (burns readily and sustains a flame, like gasoline), and Persistent (does not degrade quickly under normal environmental conditions). A hazardous substance becomes a hazardous waste when its owner considers it as a waste. This Plan focuses on hazardous wastes as opposed to hazardous substances.

### (3) Planning Requirements

Although Ecology does not regulate MRW under the dangerous waste regulations, the typical poor management of these wastes has resulted in the need for management programs on the local level. Subsection 70.105.220 RCW requires the preparation of Local Hazardous Waste Plans. The general requirements and process for developing the Plan are contained in the **Planning Guidelines for Local Hazardous Waste Plans, WDOE 87-18 (Guidelines)**.

Although used oil is not regulated as a hazardous or dangerous waste by Ecology, because of its prevalence in the waste stream and inclusion as a HHW in the Planning Guidelines, it is considered a MRW for the purposes of this Plan.

The planning process must address the three basic sources of MRW: households and two types of SQGs which are categorized as either minor or major commercial generators. Major commercial generators generate MRW as a routine part of their operations whereas minor commercial generators only irregularly and infrequently generate MRW. An example of a major generator may be a dry cleaner, gas station, or photo processing lab where MRW is routinely generated. A grocery or hardware store may be a minor generator due to product spills, unscheduled cleanings, or remodeling projects. The other source of MRW is from households. Household hazardous wastes (HHW) are categorically exempt from regulation regardless of quantity.

In order to visualize the primary planning responsibility for various parts of the region's solid waste stream, see Figure I-1. This figure outlines the relationship of household and SQG MRW to the larger categories of hazardous wastes and solid wastes. It also identifies the split of planning responsibility for hazardous waste between the local community for unregulated MRW generators and State level for regulated hazardous waste generators.

The local Plan must consider the following priorities in descending order to be in compliance with RCW 70.105.150.

- Waste Reduction
- Waste Recycling

- Physical, Chemical and Biological Treatment
- Incineration
- Solidification/Stabilization Treatment
- Landfilling

According to the Guidelines, every plan must include\* seven parts which are:

- (a) Purpose and Introduction
- (b) Summary
- (c) Background of the Planning Area
- (d) Existing and Future Problems, Needs, and Conditions
- (e) Plan Objectives and Alternatives
- (f) Recommended Programs and Actions
- (g) Appendices

For plan approval by Ecology the final draft must be submitted including the following:

- A required elements checklist
- Resolutions of Plan Adoption by all participating cities and counties
- Completed State Environmental Policy Act (SEPA) Documentation
- The adopted plan including all appendices.

#### **b. Public Participation Process**

To assure that citizens and local businesses are given ample opportunity to become aware of the Plan and participate in its development, a public participation plan for the region was developed by the HW Committee. The public participation plan includes the following elements:

- (1) To raise the public's awareness of the planning process, press releases were developed for local newspapers and radio indicating the existence and purpose of the subcommittee in developing the Plan and the need for citizen and business participation. The press releases also announced that the region would be doing business and household surveys in the near future.
- (2) Additionally, existing newsletters of various agencies and other appropriate organizations were coordinated to further publicize information about the processes and actions of the HW Committee.
- (3) Surveys covering SQGs and households were performed to further involve the public as well as gain the information needed to inventory MRW generation in the region.

- (4) Service clubs and civic organizations were encouraged to invite speakers to address the MRW issue and development of the region's Plan.

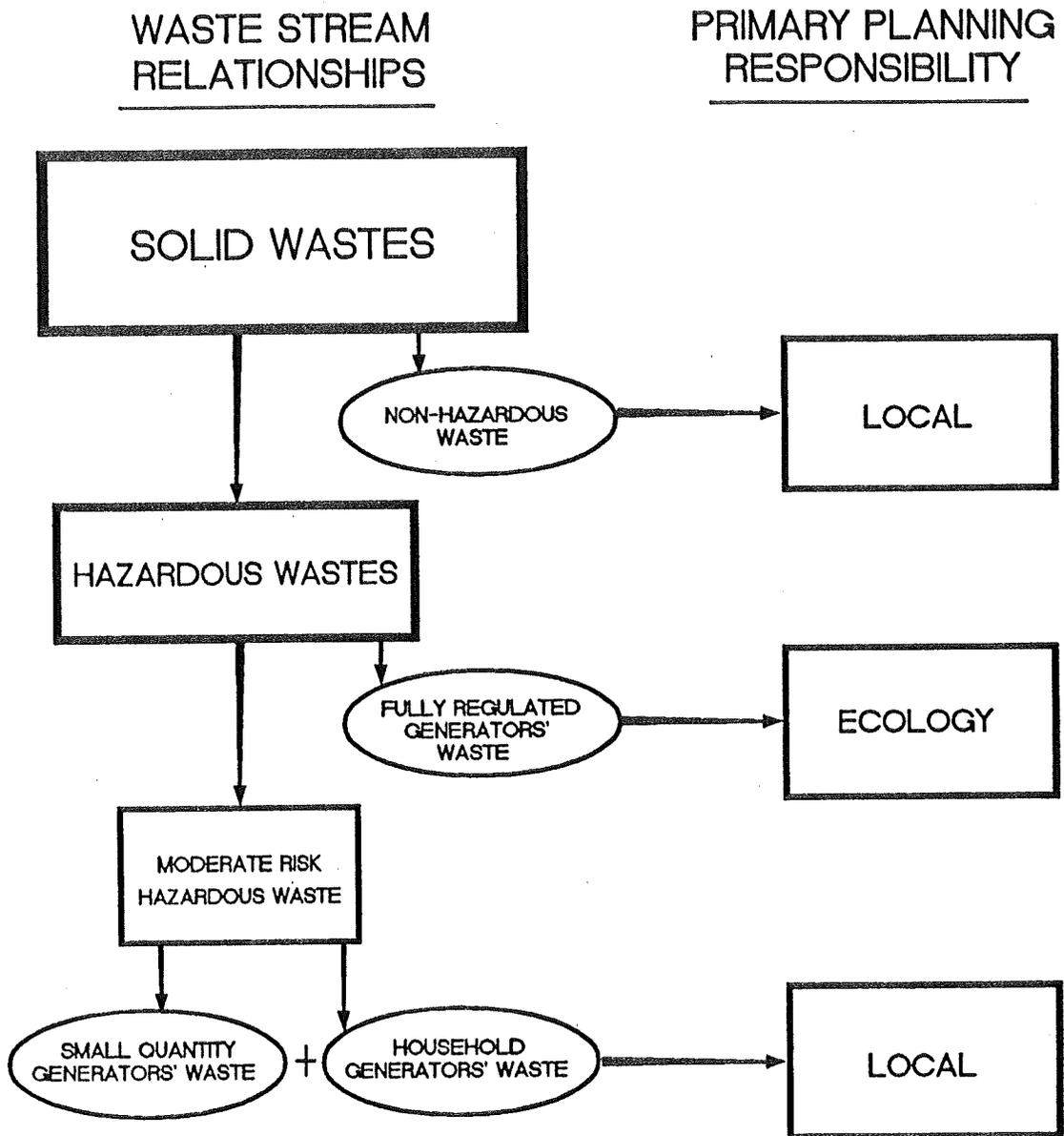
**c. Goals**

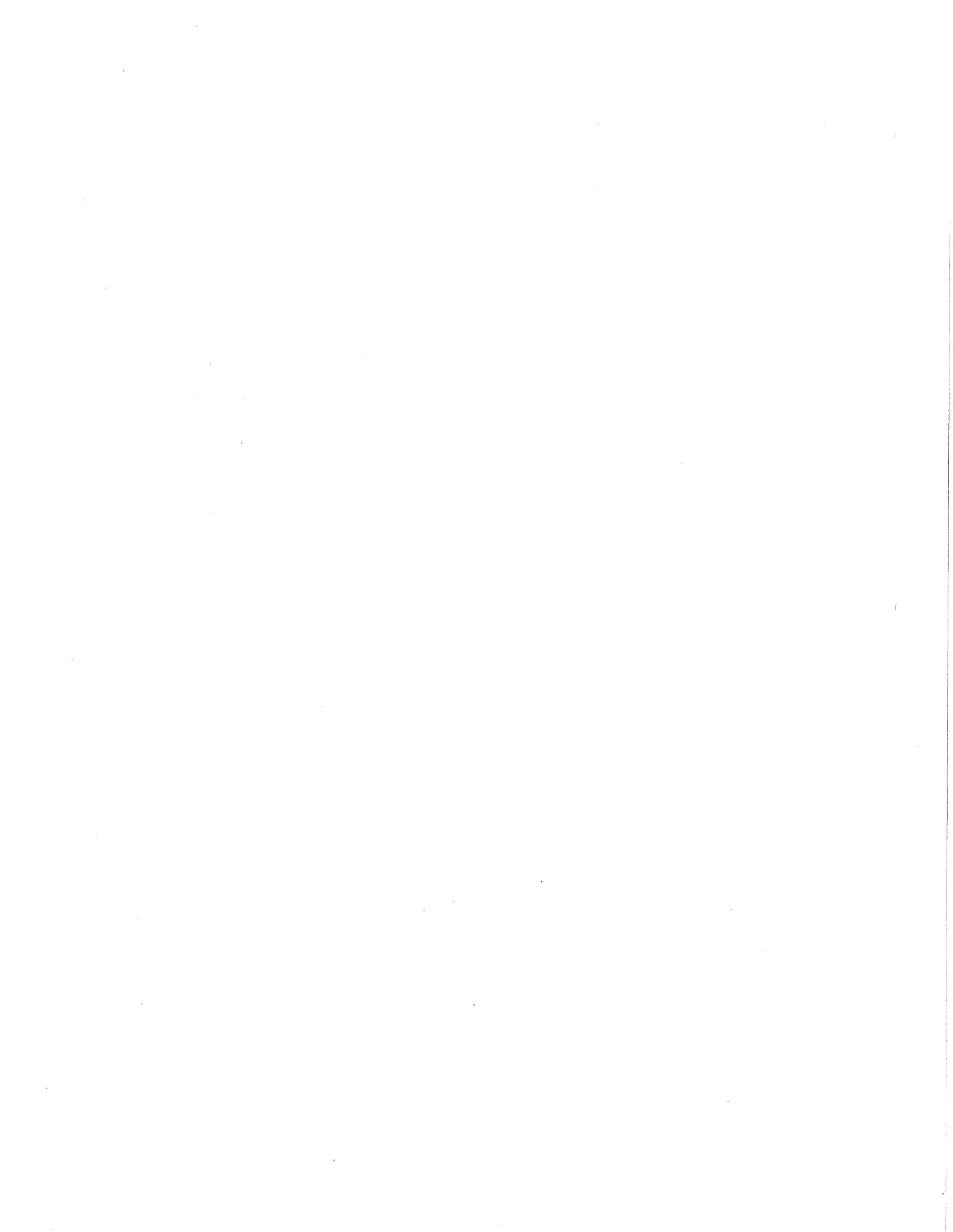
The following goals have been selected by the HW Committee to guide the development of the Plan and in choosing programs which meet the needs of the region.

- Protect public health and safety, and minimize damage to the environment (and protect property) from the adverse effects from improper handling and disposal of MRW.
- Develop a public awareness of and responsibility for MRW management and proper disposal techniques.
- Manage MRW so that it is consistent with the following order of priority: waste reduction, recycling and reuse, treatment, and residuals disposal.
- Develop a Regional Local Hazardous Waste Management Plan that can be reasonably implemented by the region while accomplishing the goals listed above.
- Ultimately, the elimination of improper MRW disposal is the goal for the future. It is recognized that only over time and with education can longstanding habits change to achieve this goal.

# FIGURE I-1

## MODERATE RISK WASTE STREAM RELATIONSHIP AND PLANNING RESPONSIBILITIES





## SECTION II

### SUMMARY

#### 1. SUMMARY OF PLANNING PROCESS, KEY FINDINGS, AND RECOMMENDATIONS

This section summarizes the findings of this Grant, Adams, and Lincoln Counties Regional Local Hazardous Waste Management Plan (Plan). The focus of this plan is on moderate risk waste (MRW). This waste category includes all household hazardous wastes as well as other hazardous wastes generated in small quantities by non-household establishments whether private or public entities. The non-household hazardous waste generators covered in this plan are ones that generate hazardous wastes in quantities below the state thresholds for fully regulated generators. The thresholds are 220 pounds or 2.2 pounds of hazardous waste generated per month or batch depending on the kind of hazardous waste generated. Non-household generators of hazardous wastes that fall below these monthly or batch thresholds are called small quantity generators or SQGs. According to WAC 173-303-040, batch means "any waste which is generated less frequently than once a month."

Based on a survey of households and local SQGs in the region approximately 696 tons of MRW per year are generated in the region. About 84% of this total, 586 tons per year, is generated by households. The remaining 110 tons per year is generated by SQGs. Approximately 439 tons per year of the MRW generated was considered to be improperly disposed, of which the majority, about 418 tons per year, is improperly disposed of by households.

Based on these findings and on an analysis of existing conditions in the region, the plan identifies the following program needs:

- a. Grant, Adams, and Lincoln Counties; some businesses; and most households lack a general awareness regarding the problems associated with MRW.
- b. Some SQGs lack adequate technical expertise and knowledge needed to manage MRW appropriately.
- c. Most households and some SQGs indicated the need for a moderate risk waste collection service.
- d. Training for landfill operators regarding proper battery disposal and alternative landfill battery collection facilities is a need stemming from requirements of the recently amended solid waste management law, Chapter 70.95 RCW, that prohibits landfilling of vehicle batteries.
- e. Regional businesses and households generate MRW which needs to be properly disposed. Now, much of this MRW ends up at the landfill, in wastewater treatment systems, or is disposed of by illegal burning, dumping or other methods.

These practices endanger sanitary workers and the environment. Also, the Guidelines state that the Plan needs to address MRW ordinances for handling and disposal.

In addition, the following administrative needs are identified:

- a. There needs to be clearly assigned responsibility for MRW management in Grant, Adams, and Lincoln Counties to implement and coordinate this Plan.
- b. There is a need to obtain ongoing funding to implement the selected program and administrative alternatives.
- c. Ongoing improvement of MRW management efforts will require examination and assessment of program successes and failures.
- d. A program needs to be established within the region to purchase equipment and share or rent it to the jurisdictions in the region.
- e. Special insurance requirements for hazardous waste activities need to be identified and periodically reviewed for the cities and counties in the region.

This Plan includes two schedules for implementing programs that address these needs. The first reflects a baseline program approach and the second reflects a more ideal program. These two schedules are shown as Table II-1, the baseline programs, and Table II-2, the ideal programs. The dollar amounts shown are for budgetary purposes. Only limited data was available to estimate some of the program costs shown. Local implementation experience of these programs in the early years will be the best method to project the estimate cost data in the later years.

It is the intent of the region to implement the baseline programs and some or all of the additional ideal programs as local and state funding is available during the implementation time-frame. As each of the selected alternatives is implemented, the locally acquired insight and experience in managing MRW in the region may point to areas where additional efforts are needed or redirection of resources is appropriate.

A plan update is required within 5 years of the original plan adoption and approval. Because the planning process can easily take a year or more the planning process should begin in about 4 years from the adoption of this plan.

TABLE II-1

BASELINE IMPLEMENTATION AND COST ESTIMATES (1)  
ESTIMATED RANGE OF COSTS (1991 DOLLARS, TO NEAREST \$1,000)

RECOMMENDED PROGRAM	ESTIMATED RANGE OF COSTS (1991 DOLLARS, TO NEAREST \$1,000)					
	1991	1992	1993	1994	1995	1996
HHW Collection	\$0	\$0	\$0	\$34,000 - \$48,000	\$35,000 - \$60,000	\$47,000 - \$78,000
Public Education - HHW	\$1,000 - \$5,000	\$38,000 - \$39,000	\$38,000 - \$39,000	\$38,000 - \$39,000	\$38,000 - \$39,000	\$38,000 - \$39,000
2 - Vehicle Battery Collection Facilities	\$1,500 - \$3,000	\$2,000 - \$4,000	\$2,000 - \$2,000	\$2,000 - \$2,000	\$2,000 - \$2,000	\$2,000 - \$2,000
8 - Used Oil Collection Facilities (2)	\$500 - \$1,500	\$16,000 - \$44,000	\$4,000 - \$4,000	\$4,000 - \$4,000	\$4,000 - \$4,000	\$4,000 - \$4,000
Public Education - SQG	\$0	\$18,000 - \$27,000	\$16,000 - \$25,000	\$16,000 - \$25,000	\$16,000 - \$25,000	\$16,000 - \$25,000
HW Disposal Ordinance	\$0	\$0	\$5,000 - \$5,000	\$0	\$0	\$0
Regional Coordination	\$500 - \$1,000	\$2,000 - \$4,000	\$2,000 - \$4,000	\$2,000 - \$4,000	\$2,000 - \$4,000	\$2,000 - \$4,000
Estimated Costs	\$3,500 - \$10,500	\$76,000 - \$118,000	\$67,000 - \$79,000	\$96,000 - \$122,000	\$97,000 - \$134,000	\$109,000 - \$152,000
Probable Ecology Funding (3)	\$2,600 - \$7,900	\$49,000 - \$77,000	\$44,000 - \$51,000	\$62,000 - \$79,000	\$63,000 - \$87,000	\$71,000 - \$99,000
Local Funding	\$900 - \$2,600	\$27,000 - \$41,000	\$23,000 - \$28,000	\$34,000 - \$43,000	\$34,000 - \$47,000	\$38,000 - \$53,000

(1) Includes funds from Ecology and each of the cities and counties through 1996

(2) Does not include disposal costs, assuming no revenue from used oil pick-up. Over time this may range plus or minus 20 cents per gallon.

(3) Assumes: Up to \$158,500 for Plan implementation and up to \$44,000 for SQG Ed. in 1991 at 75%.

Half of CPG used for Plan implementation, up to \$168,250, in 1992 and in 1993 at 65%\*.  
 Half of CPG used for Plan implementation, up to \$195,750, in 1994 through 1996 at 65%\*.  
 Grant County may apply for funding grants at a 75% level in 1992.  
 and beyond because of its status as a financially distressed county.  
 (See Section V for details about these Ecology grant programs. CPG means, "Coordinated Prevention Grants".)

\* Because this is a unified plan, Adams and Lincoln counties may ask for a 10% increase of grant funding at 60% instead of this amount at 65% and Grant County can ask for 10% more at the full 75%, as a financially distressed county

TABLE II-2  
IDEAL IMPLEMENTATION AND COST ESTIMATES (1)  
ESTIMATED RANGE OF COSTS  
(1991 DOLLARS, TO NEAREST \$1,000)

	1991	1992	1993	1994	1995	1996
<b>RECOMMENDED PROGRAM</b>						
Public Education - HHW	\$2,000 -	\$6,000	\$38,000 -	\$39,000	\$38,000 -	\$39,000
2 - Vehicle Battery Facilities	\$1,500 -	\$3,000	\$2,000 -	\$4,000	\$2,000 -	\$2,000
8 - Used Oil Collection Facilities (2)	\$1,000 -	\$3,000	\$16,000 -	\$44,000	\$4,000 -	\$4,000
Public Education - SGQ	\$0	\$0	\$18,000 -	\$27,000	\$16,000 -	\$25,000
HW Disposal Ordinance	\$0	\$0	\$0	\$0	\$5,000 -	\$5,000
Labeling Law (Local-Level, 3)	\$0	\$0	\$0	\$0	\$0	\$0
Permanent Collection Facility - SOG (4,5)	\$0	\$0	\$34,000 -	\$44,000	\$37,000 -	\$54,000
Permanent Collection Facility - HHW (5)	\$0	\$0	\$34,000 -	\$46,000	\$35,000 -	\$60,000
Regional Mobile Collection	\$0	\$0	\$76,000 -	\$93,000	\$50,000 -	\$86,000
On-Site HW Assistance for SOGs	\$0	\$0	\$4,000 -	\$8,000	\$4,000 -	\$8,000
Regional Coordination	\$2,000 -	\$4,000	\$4,000 -	\$8,000	\$4,000 -	\$8,000
Estimated Costs	\$6,500 -	\$16,000	\$184,000 -	\$268,000	\$153,000 -	\$244,000
Probable Ecology Grant (6)	\$4,900 -	\$12,000	\$120,000 -	\$168,000	\$99,000 -	\$159,000
Local Funding	\$1,600 -	\$4,000	\$64,000 -	\$100,000	\$54,000 -	\$85,000
					\$65,000 -	\$119,000
					\$106,000 -	\$196,000
					\$57,000 -	\$187,000
					\$68,000 -	\$357,000
					\$163,000 -	\$383,000
					\$195,000 -	\$553,000

(1) Includes funds from Ecology and each of the cities and counties through 1996  
 (2) Does not include disposal costs, assuming no revenue from used oil pick-up. Over time this may range plus or minus 20 cents per gallon.  
 (3) A local recommendation for the State, therefore, no costs are included at the regional level  
 (4) Assumed to operate independent of HHW facility  
 (5) Assumed construction of 1 facility per year until 3 facilities are built, one in each County  
 (6) Assumed: Up to \$158,500 for Plan implementation and up to \$44,000 for SOG Ed. in 1991 at 75%.  
 Half of CPG used for Plan implementation, up to \$168,250, in 1992 and in 1993 at 65%  
 Half of CPG used for Plan implementation, up to \$195,750, in 1994 through 1996 at 65%\*  
 Grant County may apply for funding grants at a 75% level in 1992 and beyond because of its status as a financially distressed county  
 (See Section V for details about these Ecology grant programs. CPG means, "Coordinated Prevention Grants".)

\* Because this is a unified plan, Adams and Lincoln counties may ask for a 10% increase of grant funding at 60% instead of this amount at 65%, and Grant County can ask for 10% more at the full 75%, as a financially distressed county

## SECTION III

### BACKGROUND OF THE PLANNING AREA

#### 1. LOCATION AND SIZE OF THE PLANNING AREA

The three-county planning region of Grant, Adams, and Lincoln Counties includes the majority of the central and eastern Washington area called the Columbia Plateau. The region stretches approximately 105 miles from east to west and 85 miles from north to south. The region is within 40 air miles of every major city in Washington east of the Cascades except Walla Walla. See Figure III-1. The region covers 6,875 square miles and accounts for approximately 10.3% of the State's land area.

The northern boundary of the region is described by a rough arc from Crescent Bar on the Columbia River to the north and then east to Soap Lake. From Soap Lake, a connected chain of lakes continues northeast to the Columbia River at Grand Coulee. From Grand Coulee the region's north boundary follows the Columbia and then Spokane River to just beyond Long Lake Dam.

The region's eastern boundary then proceeds due south just to the east of Reardan and Fishtrap, jogs about 7 miles west to the Adams County line, south of Sprague, and then due south again to the Palouse River. The region's southern boundary then follows the Palouse River to a point east of Washtucna then, west to the Columbia River southwest of Othello and follows the river upstream to Mattawa. Continuing upstream to Crescent Bar forms the western boundary of the region.

#### 2. AGRICULTURE

The region is largely a plateau of flat to rolling and in some areas steep terrain that supports an irrigated and dry land farm economy. Lands in the western parts of the region are more apt to be irrigated than in the eastern areas. Much of the irrigated lands have been created through a system of canals fed by water diverted from the Columbia River or deep well ground water pumping. Field crops are the major type of agricultural commodities grown in the region. Agriculture continues to be the economic backbone of the region.

#### 3. POPULATION

The largest population centers are also in the west and include Soap Lake, Ephrata, Quincy, Moses Lake, Warden and Othello. In the north, the main population centers are Grand Coulee, Wilbur and Davenport. The center of the region is anchored by Odessa. In the southeast, Ritzville is the primary population center. Many smaller incorporated areas and towns are scattered throughout the region but are under 1,000 inhabitants.

The estimated 1989 regional population is approximately 74,100 of which 47%, or approximately 34,600, reside in unincorporated areas. Within the region there are some notable population variations. The western side of the region, including Grant County and Othello, contains approximately 76% of the region's population, about 56,500 people. In the eastern side of the region, only Davenport and Ritzville exceed populations of 1,000 with 1,465 and 1,790 people estimated in 1989, respectively. The remainder of the eastern side of the region is characterized by evenly-dispersed, smaller cities and towns. Because of the differences in population and population density between the east and west sides of the region, the combination of best program alternatives may vary between these two areas within the region.

#### **4. GEOLOGY AND SOILS**

The region is included in the Columbia Basin, one of seven physiographic provinces (areas having distinctive land form) of Washington State. The physiographic provinces surrounding the region include the Cascade Mountains to the west, the Okanogan Highlands to the north, and the Blue Mountains to the southeast.

Formation of the Columbia Basin occurred in the early ages by massive volcanic eruptions of successive flows of basalt. The ancestral Columbia River developed, skirting the northern edge of the lava field. The great weight of this lava may have contributed to the slow subsiding of the Basin and the upfolding of northwest- to west-tending ridges, including Frenchman Hills and the Saddle Mountains. As volcanic activity diminished, the Columbia River maintained its course by cutting the Columbia Gorge through the rising ridges and the Cascade Mountains. The Columbia and Yakima Rivers had wide floodplains; as they overflowed, silt and clay were deposited. These deposits were blown over the Columbia Basin as the rivers receded, contributing to the soil characteristics existing in the region today.

Following the above-mentioned geologic activity, continental ice sheets moved into Washington from the north. One lobe came as far south as Coulee City forming a terminal moraine, part of which is now the west rim of the Upper Coulee of Grand Coulee. The ice sheet blocked the Columbia River at the present site of Grand Coulee Dam, and great quantities of meltwater spilled over and excavated the Upper and Lower Coulees of the Grand Coulee. As the ice dam melted and broke, the water returned to its earlier course.

The soils characteristics in the region are a direct result of past geologic activities and the erosional forces of wind and water. Large deposits of silty and sandy soils occur throughout the region. Many areas have outcroppings of basalt at or near the surface and are unsuitable for development.

#### **5. CLIMATE**

The climate in the Columbia Basin is a combination of marine and continental types. The Coastal Mountain Ranges and the Cascade Mountains to the west cause the prevailing moist ocean air to rise and release rain on the windward sides. As the winds descend into central and eastern Washington, very little moisture is deposited. The mean annual precipitation ranges

between 6 and 18 inches per year in the region with higher averages in the north and east edges of the region. The temperature during the summertime often exceeds 100°F, and in the winter months can drop below 0°F, although subzero temperatures are not typical.

Winds are strong to moderate in the winter and spring, and decrease in the summer. Although prevailing winds are from the northwest, strong winds occasionally come from the southwest. With irrigation improvements, dust storms have been minimized.

## **6. COMMERCIAL/INDUSTRIAL CENTERS**

The Moses Lake area represents the largest commercial center within the region. The principal activities surrounding the City of Moses Lake are processing agricultural products and high purity chemicals. Moses Lake and the City of Warden (to the southeast) both provide commercial services to the surrounding farmlands. Grant County Airport, located immediately north of Moses Lake, contains a sizeable Boeing Company facility. Some international airlines use the airport to train their Boeing 747 flight crews due to the large runway and excellent weather conditions.

The largest areas of employment in each of the three counties are retail and wholesale trade establishments. Businesses that process fruits and vegetables employ a large portion of the population in Grant County. Local government comprises the largest portion of the government positions.

Other commercial centers that influence the nearby rural areas of the region but are not in the region include Spokane, Wenatchee and Ellensburg.

## **7. SOLID WASTE PLANNING AND FACILITIES**

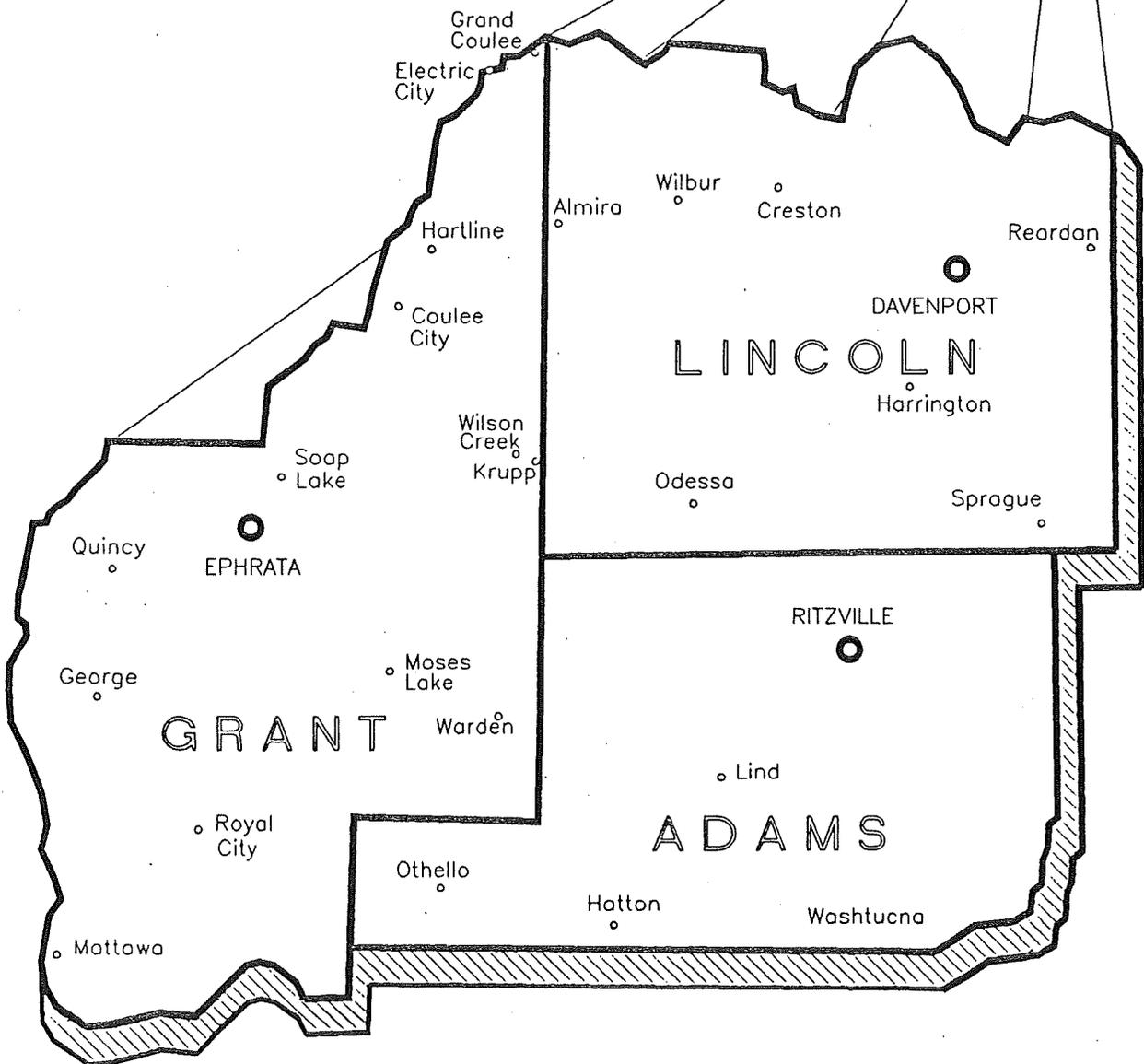
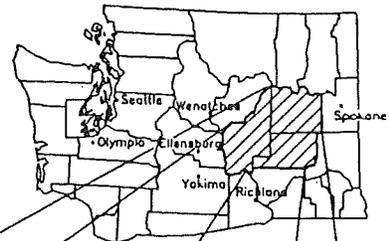
As mentioned in Section I, much MRW is typically disposed of through existing solid waste management systems. The management of these systems in the region is guided by the three individual county Solid Waste Management Plans. Lincoln and Adams counties are in the process of updating their solid waste plans while Grant County has a more recent solid waste plan, dated August 1987. These planning documents as well as existing solid waste facilities and systems will be considered in the development of this Plan.

The municipal solid waste landfills currently operating in the region include ones located at or near the communities of Bruce (east of Othello), Odessa, Wilbur, Ephrata, Harrington, and Grand Coulee.

## **8. ADDITIONAL BACKGROUND INFORMATION**

More detailed information about these and other background topics is contained in the solid waste management plans, comprehensive plans, and other local and state agency planning documents.

# FIGURE III-1 REGIONAL PLANNING AREA LOCATION MAP



**SECTION IV**  
**MODERATE RISK**  
**HAZARDOUS WASTE INVENTORY**

**1. INTRODUCTION**

The magnitude of improper disposal of MRW is difficult to assess and characterize with accuracy. Nonetheless improper dumping of MRWs by households or SQGs into storm sewers, solid waste facilities, or on the ground, may lead to contamination of both ground water and surface water, and expose disposal system equipment and personnel to unnecessary hazards.

Understanding MRW generation and disposal is a key element in developing an effective management program. This section examines generation and disposal of MRW through the results of two surveys, one of the region's households and the other of SQGs.

The objectives of the surveys were to:

1. Identify the amounts and types of moderate risk wastes that are generated.
2. Identify which disposal methods are currently used for moderate risk waste.
3. Identify opportunities for and constraints to improving the management and disposal of moderate risk waste.
4. Determine the current level of concern about the issue of moderate risk waste disposal.
5. Evaluate the public acceptability of alternative disposal practices, including such options as the following:
  - a. Taking the materials to a designated site
  - b. Paying a fee for disposal service
  - c. Traveling some distance to a collection site
  - d. Utilizing a pick-up service
6. Raise the awareness of moderate risk waste management as a significant issue in the region.

## 2. HOUSEHOLD HAZARDOUS WASTE SURVEY

### a. Methodology

A random sample of 385 households was collected in the region. Since a mail-out survey would likely result in a skewed response, due to over-representation of people with above average environmental interest, the survey was conducted by phone. Residents' phone numbers were randomly selected from local telephone directories by local callers trained to administer the survey. A sample survey instrument is contained in Appendix E. The distribution and number of selected households, shown in Table IV-1, was designed to reflect both major population centers in the region as well as rural areas and smaller communities. Based on the region's population distribution between the three counties 200, 100 and 100 completed household surveys was the goal in Grant, Adams and Lincoln Counties, respectively. The survey was stratified further to reflect the population distributions within each County. For instance, because Moses Lake, Othello, and Davenport are largest population centers in each of the three counties, the largest number of completed random surveys were in the areas of relatively high population.

Data analyses included frequency distributions (for instance, how often respondents reported disposal of waste oil or paint) and averages (such as the number of paint cans the average respondent disposed). Attitudes about HHW and other household information were also evaluated. Although quantities of HHW generated per household may be estimated through surveys, it is difficult for most respondents to accurately remember the quantity of wastes they dispose of each week, month, or year. On the other hand, the method of disposal can usually be estimated accurately from survey results. Consequently, the disposal methods reported by the surveyed households were used in combination with empirical data representing various HHW types disposed in MSW to calculate the HHW generated in the region. An example of this estimation technique is provided in Subsection e. below.

### b. HHW Estimated Quantities and Disposal Methods

Figure IV-1 shows the estimated quantities of HHW generated in the region by general waste types in 1990. The majority of the HHW generated by weight is due to paint, thinners, and stains (37.3%). The next largest quantities of waste types generated are automotive batteries and used oil, 20.8% and 17.8%, respectively. Other large quantity waste categories include: gasoline and engine cleaners at 8.4%, used oil filters at 6.4%, and household cleaners at 4.5% of the total. Pesticides, including their containers, represent a small proportion of the HHW at approximately 0.8%, but these MRW are often among the most toxic generated by households. The 0.8% of HHW generated in the form of pesticides represents an estimated 4.4 tons per year in the region.

In the first portion of the HHW surveys, respondents were read a list of 12 common household product types which were: household cleaners, drain openers, polishes, gasoline, antifreeze, paint, thinner, pesticides, used oil, radiator flush, automotive batteries and other. They were then asked to estimate for each product type used:

1. How many times per year were these product containers disposed?
2. Was there any product left in the containers when discarded?
3. What method was used to dispose of any remaining product, if any?
4. What method was used to dispose of the container?

For the purposes of this study, disposal methods were compiled from the completed surveys as either proper or improper. This is not to be interpreted as legal versus illegal. Because HHW is not regulated regarding individual disposal practices, except as a solid or liquid waste, there are legal disposal practices that should be discouraged and viewed as improper due to public health, safety and environmental concerns. The survey participants were not told what methods would be considered proper or improper. From the survey responses, only recycling was considered proper disposal for households. Other waste management techniques, such as re-use or treatment, are considered proper, but no households gave these responses. All other disposal options--in the trash, burning, storing for future use, and spreading on the ground--were considered to be improper disposal.

Nearly all of the households (93%) reported improperly discarding household cleaners of one type or another. Approximately 60% of the households reported improperly disposing of the following MRWs: chemical drain openers, oven cleaners, polishes (auto, furniture, metal, floor), and antifreeze. Many households reported improper disposal of paint, thinner, stains, varnishes, or pesticides.

Most HHW were discarded into the trash; the proportion of HHW disposed of by different methods is shown on Table IV-2. Other disposal methods for HHW included open burning, burying, reusing, and recycling. Other wastes would include pool chemicals, photographic chemicals, certain ceramic glazes and other miscellaneous hobby and household wastes.

The next portion of the survey dealt with vehicle maintenance. Unlike the previous HHW category, that consisted of a containers with residual amounts of HHW some vehicle maintenance HHW such as motor oil and batteries are not used up. The entire product and its container becomes HHW as soon as they are discarded. Therefore, substantial amounts of HHW is generated from vehicle oil changes and used batteries.

Used oil and automotive batteries make up the largest quantity of hazardous waste generated by households. In the region, automotive batteries were generally recycled. A majority of the oil filters were discarded in the solid waste stream. Most used oil was dumped on the ground. Used oil was reportedly dumped on roads and driveways to control dust. This is consistent with findings of a 1981 national EPA survey of used oil changers (do-it-yourselfers) from farms and rural areas.

### **c. Attitudes about Disposal of Hazardous Household Products**

The next survey category was concerned with the perception of HHW disposal. A key question in this portion of the HHW survey was phrased as follows:

"How concerned are you about the issue of disposing of hazardous substances currently found in your residence? Please rate your feelings on a scale of 1 to 5, with 5 being 'very concerned,' and 1 being 'not at all concerned.'"

The responses in Figure IV-2 indicate that most of the survey respondents are concerned about this issue: combined responses of 4 or 5 on the scale represented approximately 58 to 77% of the households in each County and 68% for the region. About 20 to 27% of the households ranked their concern at 3, the middle of the scale, while about 15% or less chose a concern level of 1 or 2 in each County corresponding to 9.4% for the region.

**d. Attitudes about Hazardous Waste Disposal Options**

Finally, the survey evaluated the receptivity of respondents to alternative methods of disposal. Four possible types of HHW disposal options were identified: (1) collection event, (2) oil collection site, (3) permanent collection site, and (4) curbside collection. The percentage response to each of these HHW collection services is presented in Figure IV-3. For all of the disposal options, except the oil collection site, greater than 70% of the respondent households reported they would definitely use the services. The responses to this set of questions was uniform throughout the region.

When asked "How far are you willing to travel to a collection site?" the responses ranged from 4 blocks to 100 miles (excluding the respondents who said they would not travel any distance). The average distance that the respondents would travel was 12.3 miles; this was calculated from the survey responses for those willing to travel to dispose of their HHW. This compares favorably with the 10 miles that urban residents have typically indicated they are willing to travel. Eleven percent of the households surveyed stated that they were not willing to travel to a collection site.

When queried "How much would you be willing to pay for these services?" the responses ranged from \$0 to \$320 per year. The average amount households indicated that they were willing to pay was approximately \$10 per year. Forty-three percent said they would be willing to pay \$5 or more per year (see Table IV-3). Approximately 35% of the households indicated that they would be willing to pay \$4.99 or less. About 22% of the households surveyed gave no response to this question.

**e. Waste Generation Estimate Methodology**

Methods that can be used to estimate MRW generation include surveys, which provide information on actual amounts of HHW disposed through a variety of methods, and sorting studies at solid waste disposal facilities that quantify the average weights of HHW disposed in MSW. Sorting studies do not measure wastes disposed into sewers, on the ground, in the street, through burial or by burning and surveys usually provide only limited quantitative information.

For these reasons, this plan utilizes selected data from each of these methods to avoid their weaknesses in estimating the generation of HHW in the region. The combined method used here to estimate HHW generation incorporates waste sorting data collected by researchers and the surveys performed in the region. Quantity estimates for most types of household hazardous waste disposed in the municipal solid waste stream were made from the waste sorting data. These values were then used together with the regional survey data on disposal practices to determine total local HHW generation quantities.

Data from various urban waste sorts has compiled into average pounds per year per household for various HHW types. As an example, about 0.61 lbs./yr./household of waste gasoline and engine cleaners are disposed of by urban households. Additionally, the containers of this waste weigh an additional 40% for a total of 0.85 lbs./yr./household. Urban studies have also estimated that these containers are disposed of at a rate of 32 containers per 100 households per year or 0.32 containers per year per household.

The surveys from each county also were compiled to estimate containers per year per household. For Grant County containers of waste gasoline and engine cleaners were disposed of at a rate of 0.80 containers per year per household, or a ratio of 2.51 times the urban average. This calculation can be seen in Table E-5 of Appendix E for each of the waste categories. This local ratio is then used to adjust the urban household disposal quantity data to reflect local disposal patterns. This method was used for each waste category in each county and the results by county and for the region are shown on Table IV-4.

Because no comparable container-per-household-per-year data from urban waste sorts was available, regional generation of vehicle batteries and used oil filters were calculated differently than other waste types. The method of determining average weights of used oil filters were calculated to be approximately 1.24 pounds from a study done by the University of Northern Iowa. According to the regional survey, 104 tons of used motor oil are generated by households per year in the region. This does not account for the oil trapped inside used oil filters. From the number of oil filters discarded per household per year, it was estimated that 38 tons of used oil filters are generated by households in the region.

An estimate of automotive battery waste was calculated using a method similar to that for trapped oil in oil filters. A used automotive battery weighs an average of 36 pounds including the casing. The number of batteries disposed of per year per household in each county was calculated from the surveys. This value was multiplied by the average weight of a used battery (36 pounds) and the number of households in the county to calculate the total of approximately 122 tons of batteries in the region per year. See Table IV-4.

#### **f. Targeted Wastes and Waste Reduction Potential**

Waste types selected by the HW Committee as "targeted wastes" include used oil, used oil filters, paint, and pesticides. (See Table IV-5.) Targeted wastes were selected

on the basis of the amount of waste per year improperly disposed and the toxicity or hazard associated with the waste.

As shown in Table IV-5 and Figure IV-4, paint and used oil were improperly disposed at quantities much higher than other waste types. Used oil filters were selected because of the quantity and because of their close association with used oil generation. Pesticides were selected because of the health and environmental risks associated with the highly toxic characteristics of the waste.

#### **g. HHW Generation Projections**

HHW generation for 1996, Table IV-6, was projected by using the household growth estimates from 1980-1990 for each county and assuming that the HHW generation will match this trend. The total for all three counties in 1996 is estimated at just over 630 tons of HHW per year. This estimate of future HHW generation assumes no impact of waste reduction programs on the HHW waste stream. Because HHW program development in rural areas is in its infancy, there is no satisfactory way to estimate the level of waste reduction likely to occur in the region. The primary means of encouraging waste reduction is largely through education. To determine what level of waste reduction has resulted from the implementation of waste reduction programs, a follow-up HHW survey should be performed as part of the plan update process.

### **3. SMALL QUANTITY GENERATOR (SQG) SURVEY**

#### **a. Methodology**

The Grant, Adams, and Lincoln Counties SQG survey asked non-household MRW generators for both quantitative and qualitative information regarding MRW. SQGs were surveyed through the mail in Adams County and by phone in Grant and Lincoln Counties. SQGs surveyed were initially selected based on the findings of an EPA National SQG Survey that identifies SQG categories and individual SQGs within each of these categories were identified by their federal Standard Industrial Classification (SIC) Code reported to the Washington State Department of Revenue. Additional potential SQGs were identified through the use of local telephone directories. These additional SQGs were also surveyed. The SQG survey attempted to reach all 246 SQGs identified. Of the 246 SQGs identified, 138 surveys were completed, which resulted in a 60% average response rate across all SQG categories. See Table IV-7. The raw data were converted through the following steps:

- (1) Each SQG was assigned to one of 14 industry categories based upon the nature of its business, or it was determined not to be a MRW generator. These categories reflect the EPA National SQG survey industry categories. These categories were established for businesses with different SIC codes but with similarities in the types of goods or services provided and waste types generated. SQGs that reported generating over the 220 lbs/month regulatory threshold for hazardous wastes were not included unless they

exceeded the 220 lbs due to the generation of used oil. Oil is currently unregulated as a hazardous waste in the State of Washington but is identified in the Guidelines as a HHW and is considered a MRW in this Plan. Consequently, the method of oil disposal is the responsibility of each SQG. Recycling of used oil is encouraged.

- (2) MRW types reported in the survey were also assigned to standard categories, which roughly correspond to those hazardous waste categories used by the EPA in their national survey. For example, "WD-40" is categorized as a waste solvent.
- (3) Waste quantities per generator type were converted into standard units, i.e., pounds per year. The factors used in making these conversions are provided in Appendix E.
- (4) Annual quantities of MRW generated were calculated for each SQG category and waste type. Average wastes per SQG by category were also estimated. SQGs that indicated waste generation, but could not provide an estimate were not calculated into the average. However, storage and disposal information was used for those SQGs that could not estimate their waste quantities. SQGs that responded that they had zero generation of a waste type were calculated into the averages.
- (5) For each waste type, e.g., used oil, solvents, etc., the method of disposal, or other management methods were compiled from the surveys.
- (6) The survey response rate, Table IV-7, for each SQG category was determined by comparing the number of responses in each category with the number of SQGs identified as SQGs in the region. These values were used to adjust total MRW estimates to include 100% of the estimated SQGs in the region.

**b. Types and Quantities of SQG Hazardous Waste**

Total MRW generation was estimated for all SQGs in the region. The average pounds of each type of waste per year for each SQG category, estimated from the regional survey, was multiplied by the total estimated number of establishments in each SQG category. This estimated the total MRW for each SQG category by waste type. Tables IV-8 and Figure IV-5 summarize the results. A total estimate of 110 tons of MRW (including containers) are generated by SQGs annually in Grant, Adams, and Lincoln Counties in 1990.

As described previously, Ecology makes a distinction between major and minor commercial generators. In order to identify minor generators in the survey, SQGs were asked to indicate if they generated hazardous wastes only occasionally, either through clean-up of accidental spills, or disposal of off-spec or outdated materials that contain hazardous substances. Three SQGs answered affirmatively to this question. Very small

amounts of paint, electronic parts, or unspecified MRWs were indicated by these three minor commercial generators. Because of the very small number of minor commercial generators found and the relatively insignificant amounts of MRW generated, it was decided that no further analysis was warranted.

The completed SQG surveys provided information on the storage and eventual disposal of MRW. From this information, it was possible to estimate the proportions of hazardous waste disposed by various methods. Similar to households, disposal options were grouped into two categories, proper and improper disposal, for the purposes of this Plan. From the SQGs surveys, proper disposal techniques include pick-up by a hazardous waste treatment firm, self-haul to a hazardous waste treatment or recycling facility, and recycling or reusing the waste on-site such as oil burning in a controlled combustion incinerator. It is estimated that 88.7 tons or 81% of hazardous waste that is generated by SQGs is disposed of properly in 1990. (See Figure IV-6a, b, c.)

Improper disposal included disposal in the MSW, in a street or storm sewer, down the drain, dumped on site or by open burning. It is estimated that 21.3 tons of hazardous waste generated annually by SQGs were disposed of improperly in 1990. (See Figure IV-7a, b, c.)

The largest SQG groups are the vehicle maintenance, wholesale/retail and chemical manufacturing categories totaling 76% of the 1990 estimated SQG MRW stream (83.9 tons of the 110-ton total). Of the estimated 83.9 tons of MRW generated by these three SQG categories only 16.0 tons, 15%, are improperly disposed.

A discussion of findings of the amount and types of MRW waste generation for SQG categories is provided for vehicle maintenance, construction, and wholesale/retail. The remaining SQG categories are summarized as a combined group.

**(1) Vehicle Maintenance (Auto)**

1990 Number of SQGs: 49  
Number Surveyed: 25 (51%)

**MRW Generation Estimate Summary:**

Total generated:	51.5 tons in 1990
Amount properly disposed:	44.7 tons (87%)
Amount improperly disposed:	6.8 tons (13%)

Vehicle maintenance accounts for the largest SQG sector among all SQGs by quantity of MRW generated in 1990. In 1990, an estimated 49 vehicle maintenance establishments were identified in the region, each generating a variety of hazardous wastes ranging from used oil to used car batteries. SQGs providing vehicle maintenance services include service stations, automotive repair shops, paint and body shops, and company-operated vehicle centers for privately owned buses, trucks, and automobiles. Non-

business SQGs include vehicle maintenance shops operated by schools and other government agencies.

Used oil and solvents were the two largest MRW types in this SQG category. The majority of MRW reported was used oil, identified by 12 of the shops interviewed. The quantity reported varied greatly among specific businesses. Wastes containing oil such as used oil filters were identified as waste product by only three shops.

Used solvent was the next largest reported waste category identified by vehicle maintenance SQGs, with an average of 88.6 pounds annually per vehicle maintenance SQG. Overall, vehicle maintenance SQGs properly dispose of 87% (44.7 tons) of their waste by using a pick-up service.

### (2) Construction (Construct)

1990 Number of SQGs: 37  
Number Surveyed: 17 (46%)

#### MRW Generation Estimate Summary:

Total waste generated:	3.7 tons/yr 1990
Amount properly disposed:	0.4 ton (11%)
Amount improperly disposed:	3.3 tons (89%)

Construction SQGs produce a variety of hazardous wastes resulting from vehicle operation, painting, soldering, the use of adhesives, glues, sealants, and solvents. Of the 17 firms surveyed in the region, nine (53%) reported that they generate hazardous wastes. Paint, solvents, and used oil were the only MRW categories reported. Nearly all of the improperly disposed MRW was landfilled. This is especially true for paint waste; 75% of generators throw the waste in the garbage.

### (3) Wholesale/Retail (Whole/Ret)

1990 Number of SQGs: 31  
Number Surveyed: 18 (58%)

#### MRW Generation Estimate Summary:

Total waste generated:	24 tons/yr 1990
Amount properly disposed:	19.4 tons (81%)
Amount improperly disposed:	4.6 tons (19%)

Wholesale/retail generators consisted primarily of agriculture and automotive-related products sales. The largest categories of MRW reported were used oil, automotive products, and solvents. Of the six generators reporting used oil, 75% recycle or haul their MRW to a hazardous waste recycling or treatment facility. Of the two generators reporting pesticide wastes, one firm buries an undisclosed amount of pesticides and burns

an undisclosed number of paper pesticide containers. The other firm hauls its pesticide waste to a treatment facility. Sixty percent of these SQGs recycle or haul solvents to treatment facilities.

#### (4) Other SQG Groups

1990 Number of SQGs:	129
Number Surveyed:	78

#### MRW Generation Estimate Summary:

Total waste generated:	30.8 tons/yr 1990
Amount properly disposed:	24.5 tons (27%)
Amount improperly disposed:	6.3 tons (30%)

The remaining SQGs have been summarized in one group. These business types include: Labs, Chemical, Manufacturers, Cleaners, Educational/Vocational Shops, Equipment Repair, Municipalities, Wood/Furniture Manufacturers, Laundries, Other, Pesticide Applicators, and Pesticide End-Users.

The Analytical/Clinical Lab category is comprised almost entirely (90%) of hospitals. Of the 2 tons generated annually by hospitals, 88% is cleaners, 11% is solvent, and the remaining 1% is miscellaneous. Ninety-five percent (1.9 tons) of this cleaner and solvent waste is disposed down the drain.

The pesticide applicator group, mostly crop dusting businesses, generate waste consisting primarily of pesticides and waste oil. Landfilling was the disposal method reported for pesticide waste by most generators. Some generators were unwilling or unable to give quantity measurements of pesticide wastes generated. Three of the four generators listing oil as a MRW either recycle, properly incinerate, or use a treatment facility for waste oil.

#### c. SQG Generation Projections

The data shown in Figures IV-8 and IV-9 are estimates of current SQG generation rates in 1990 and projected for 1996, respectively. Estimates of SQG waste by county are contained in Appendix E. A projection of future hazardous waste quantities is required for planning purposes. This first generation plan is scoped to a six-year time frame. Second generation plans will encompass a 20-year planning horizon.

In order to project future hazardous waste generation for businesses, it is necessary to estimate changes in the number and type of businesses and average generation rates. One approach is to use economic or employment growth estimates as rough indicators of overall increases in business activity, and to assume that hazardous waste production parallels business activity. For Grant, Adams, and Lincoln Counties, no recent estimates of economic growth are available. In the absence of this information, economic growth was assumed to match the population growth rate and SQG waste generation was assumed

assumed to increase proportionately. Population in the region is expected to rise 4.2% by 1996 based on data from the Washington Office of Financial Management, weighted by county. Applied to SQG waste estimates, it is estimated that 114.6 tons of MRW could be generated in 1996. (This MRW projection for SQGs, shown in Figure IV-9, does not incorporate the affect of any waste reduction impacts.)

#### **d. Targeted MRW and Waste Reduction Potential for SQGs**

Used oil and oil filters are the selected targeted MRWs as shown in Table IV-9. These MRW types were chosen by the HW Committee due to the relatively large amounts disposed improperly for used oil and because of the close association oil filters have to the used oil generation. To the extent that MRW reduction is achieved, the SQG MRW projections will over estimate actual MRW generation. As with HHW waste reduction, there is insufficient data to predict waste reduction estimates for rural SQGs. In addition, some SQGs may have relatively more or less flexibility in finding ways to reduce their MRW stream than an average household. An SQG survey performed after the SQG programs have been implemented would provide a basis for assessing and measuring waste reduction in the future.

#### **e. SQG Attitudes and Perceptions**

In order to develop management strategies for SQGs, survey respondents were questioned about their perceptions and opinions regarding regulations, education, and waste management needs. The following text summarizes the information provided by SQGs respondents.

##### **(1) Difficulties with Compliance**

SQGs in the region were asked what factors made compliance with hazardous waste laws difficult. (See Figure IV-10.) Some businesses gave no answer or had no problem with compliance. Of those SQGs who indicated difficulty with compliance, cost was the most commonly cited problem, followed by lack of consistency in regulations, lack of information, and lack of staff. The SQGs were also asked to name specific laws or regulations for which compliance is difficult. Most did not provide answers. Some SQGs indicated that it was difficult to comply with laws regarding waste oil, underground storage tanks, and asbestos. Asbestos and underground storage tanks have specific regulations at the state and federal levels and are not addressed in this Plan.

##### **(2) Sources of Information**

Most SQGs who responded said that they relied on literature from manufacturers and other sources for information on hazardous waste regulation. Some received information from business associations. Others relied on contacts with local enforcement agencies. (See Figure IV-11.)

### (3) Needed Services

The survey asked SQGs which services would best fit their needs with respect to managing MRW; each SQG could indicate on the survey more than one service that would fit their needs. (See Figure IV-12.) Of those who responded, most said collection services; next most often mentioned service was recycling services; then a collection facility; and the remainder mentioned hotlines, consulting services, newsletters, workshops and collection days. Most respondents said they would be willing to pay for these services, up to \$25 per year. Thirty-eight generators said they would pay between \$25 and \$300 per year. Two generators responded that they would be willing to pay up to \$1,000 per year for these services. (See Figure IV-13.)

### (4) Treatment Costs

SQGs in ten of the 14 SQG categories reported in the survey that they are currently paying for treatment or disposal of hazardous wastes. The estimated disposal costs in the region by SQG category are shown in Figure IV-14.

## 4. CURRENT MRW GENERATION RATES PROJECTIONS, AND TARGETED MRW

Table IV-10 shows the total estimated MRW generated by waste type and what amounts of these wastes are properly and improperly disposed by SQGs and households. Of the estimated 696 tons per year of MRW generated in the region, approximately 257 tons are disposed of properly. The majority of the improperly disposed MRW, approximately 418 tons in 1990, is HHW as opposed to about 21 tons in 1990 improperly disposed by SQGs. The targeted MRW types and subtotals for targeted MRWs are highlighted in Table IV-10. An estimate of the tons generated per County by households and SQGs is shown on Table IV-11 for 1990 and projected to 1996.

Figures IV-15 and IV-16 show the total 1990 MRW generation estimate for the region, and total 1996 estimated projection of MRW, respectively. The 1996 projection estimate excludes any impact from possible waste reduction by households or SQGs.

## 5. FUTURE DATA COLLECTION NEEDS

In reviewing the results of the MRW inventory, the accuracy of the results were questioned. Specifically, the proportions of paints to used oil and automotive batteries in the HHW results seemed unusual. The paint category seemed high relative to what might be expected per household in the used oil category. Similarly, it seemed as though there would be more total tons of used oil than automotive batteries. It is not clear whether the used oil should have been higher or the other categories lower, or perhaps the respondents had a propensity to answer questions regarding different waste types in different ways.

Consequently, it is recommended that this issue be examined in more detail after the planning process to resolve these apparent anomalies. This might involve a comparison of these results with other independent data sources or performance of a limited follow-up survey on these three waste types.

**THE LISTED SQG CATEGORY  
ABBREVIATIONS WERE USED  
IN THE TABLES AND FIGURES  
DESCRIBING SQGS WHICH FOLLOW**

Analytical/Clinical Labs	Labs
Chemical Manufacturing	Chem
Cleaning Services	Clean
Construction	Construct
Educational/Vocational Shops	Shops
Equipment Repair	Equip
Fire/Police/Post Office	Municip
Furniture/Wood Manufacturing	Wood
Laundries	Laundry
Other	Other
Pesticide Application Services	Pest App
Pesticide End User	Pest End
Vehicle Maintenance	Auto
Wholesale/Retail	Whole/Ret

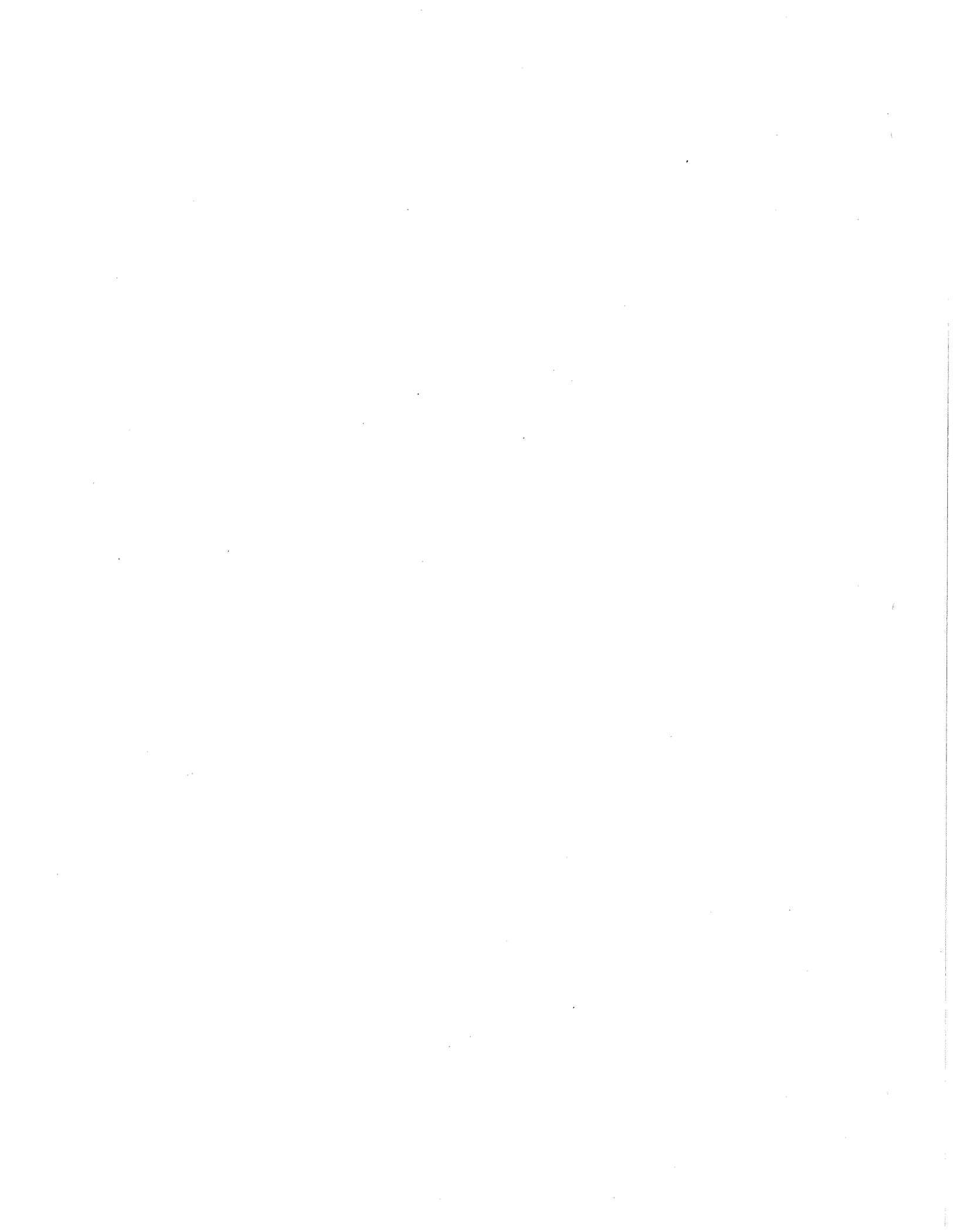


Table IV-1  
Distribution Of  
Household  
Survey Responses

County	City or Nearby Community	Number of Respondents
Adams	Benge	2
	Lind	7
	Othello	59
	Ritzville	25
	Washtucna	5
	Subtotal	98
Grant	Ephrata	40
	George	8
	Hartline	2
	Mattawa	8
	Moses Lake	85
	Quincy	22
	Soap Lake	10
	Warden	12
	Subtotal	187
Lincoln	Almira	8
	Creston	7
	Davenport	23
	Harrington	12
	Odessa	16
	Reardan	10
	Sprague	8
	Wilbur	16
	Subtotal	100
TOTAL		385

Table IV-2  
Proportion Of HHW Disposed By Type And Method (1)

Waste Type	Improperly Disposed					% Improperly Disposed	% Properly Disposed (Recycled) (2)
	MSW (Trash)	Open Burning	Other	Store	Spread on ground		
Household Cleaners	88.3%	4.8%	0.6%			93.7%	6.3%
Drain Openers	91.5%	4.3%	1.8%			97.6%	2.4%
Polish	91.9%	3.6%	1.8%	0.5%		97.8%	2.2%
Gasoline	69.4%	3.2%	4.8%			77.4%	22.6%
Antifreeze	83.6%	4.1%	3.6%			91.3%	8.7%
Paint	91.0%		1.4%			92.4%	7.6%
Thinner	81.6%	3.4%				85.0%	15.0%
Pesticides	83.1%	10.1%	0.8%			94.0%	6.0%
Other	72.4%	10.3%	3.5%	3.5%		89.7%	10.3%
Used Oil	7.6%	7.0%	3.2%	8.9%	40.8%	67.5%	32.5%
Radiator Flush				22.2%	61.1%	83.3%	16.7%
Automotive Batteries (3)	9.0%	1.4%	0.7%	4.8%		15.9%	84.1%

- (1) For breakdown by County, see Appendix E  
(2) Recycling is the only disposal method reported that is typically considered proper.  
(3) Batteries "traded in" are assumed to be recycled

Table IV-3  
Willingness Of Households  
To Pay For HHW Collection

RANGE	COUNTY			THE REGION
	ADAMS	GRANT	LINCOLN	
\$0.00	22.4%	27.3%	14.0%	22.6%
\$0.01 TO \$4.99	11.2%	8.6%	22.0%	12.7%
\$5.00 TO \$9.99	18.4%	23.5%	22.0%	21.8%
\$10.00 TO \$14.99	11.2%	10.7%	7.0%	9.9%
\$15.00 TO \$19.99	10.2%	0.5%	0.0%	2.9%
\$20.00 TO \$49.99	3.1%	4.3%	3.0%	3.6%
\$50.00 AND UP	4.1%	7.5%	1.0%	4.9%
No Response (1)	19.4%	17.6%	31.0%	21.6%

(1) "No Response" included surveys where the household indicated they were willing to pay but did not specify an amount.

Table IV-4  
Estimated 1990 HHW Generated In Region (1)

Waste Type	Estimated Annual HHW in Adams County		Estimated Annual HHW in Grant County		Estimated Annual HHW in Lincoln County		Estimated Annual HHW in Region		Percent of Total Including Containers
	Excluding Containers Tons/Yr	Including Containers Tons/Yr	Excluding Containers Tons/Yr	Including Containers Tons/Yr	Excluding Containers Tons/Yr	Including Containers Tons/Yr	Excluding Containers Tons/Yr	Including Containers Tons/Yr	
Used Oil	19.7	22.9	50.4	58.5	19.8	23.0	90.0	104.4	0.2
Used Oil Filters	3.5	6.7	11.5	22.0	4.6	8.8	19.6	37.5	0.1
Automotive Batteries		26.4		67.5		27.9		121.8	0.2
Household Cleaners (window Cleaner, bleach, disinfectant, detergent)	1.6	3.1	10.0	19.5	1.9	3.6	13.4	26.2	0.0
Drain openers, Oven Cleaners	0.2	0.3	0.9	1.7	0.1	0.2	1.1	2.2	0.0
Polish (auto, furniture, metal, floor)	0.7	1.4	4.5	9.1	0.4	0.8	5.6	11.3	0.0
Gasoline, Engine Cleaners	14.9	20.9	18.1	25.4	2.1	2.9	35.2	49.2	0.1
Antifreeze	0.6	1.0	2.9	4.7	0.6	1.0	4.2	6.6	0.0
Paint, Thinner, Stains, Varnishes	5.4	15.0	70.4	194.3	3.3	9.2	79.2	218.5	0.4
Pesticides, Fungicides, Herbicides, Weed Killers	0.8	1.2	2.0	2.7	0.4	0.5	3.2	4.4	0.0
Other	1.3	1.8	1.1	1.5	0.1	0.9	2.4	4.2	0.0
<b>TOTAL</b>	<b>48.7</b>	<b>100.5</b>	<b>171.8</b>	<b>406.9</b>	<b>33.2</b>	<b>78.9</b>	<b>253.7</b>	<b>586.2</b>	

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(1) See Appendix E for individual County calculations.

Table IV-5  
Regional Targeted HHW

Waste Type	Estimated 1990 HHW Generated Tons/Yr (1)	Percent of Waste Type Improperly Disposed (2),(3)	Ton/Yr Improperly Disposed (2)
Used Oil	104.4	67.5%	70.5 ( 16.9%)
Used Oil Filters (4)	37.5	100.0%	37.5 ( 9.0%)
Automotive Batteries	121.8	15.9%	19.4 ( 4.7%)
Household Cleaners (window cleaner, bleach, disinfectant, detergent)	26.2	93.7%	24.5 ( 5.9%)
Drain Openers, Oven Cleaners	2.2	97.6%	2.1 ( 0.5%)
Polish (auto, furniture, metal, floor)	11.3	97.8%	11.1 ( 2.6%)
Gasoline, Engine Cleaners	49.2	77.4%	38.1 ( 9.1%)
Antifreeze	6.6	91.3%	6.0 ( 1.4%)
Paint, Thinner, Stains, Varnishes	218.5	91.9%	200.8 ( 48.1%)
Pesticides, Fungicides, Herbicides, Weed Killers, etc.	4.4	94.0%	4.1 ( 1.0%)
Other	4.2	89.7%	3.8 ( 0.9%)
<b>ESTIMATED TOTALS</b>	<b>586.0</b>		<b>417.9</b>
<b>ESTIMATED TOTAL TARGETED HHW's (5)</b>	<b>364.9</b>		<b>312.9</b>

Targeted Wastes

- (1) Includes HHW container weights
- (2) Improper disposal includes disposal in the trash, down the drain, and disposal through dumping or open burning
- (3) See Table IV-2
- (4) 100% of Oil Filters are assumed to be improperly disposed of in the municipal solid waste stream
- (5) Targeted HHW's represent an estimated 62% of the 1990 HHW and approximately 75% of the HHW currently disposed of improperly

Table IV-6  
 Estimated And Projected HHW  
 Generation - 1990 And 1996 (1)

Waste Type	Estimated Generation of HHW for 1990 tons/Yr (2)	Estimated Generation of HHW in 1996 tons/Yr (3)
Used Oil	104.4	112.4
Used Oil Filters	37.5	40.4
Automotive Batteries	121.8	131.2
Household Cleaners (window cleaner, bleach, disinfectant, detergent)	26.2	28.2
Drain Openers	2.2	2.4
Polish (auto, furniture, metal, floor)	11.3	12.1
Gasoline, Engine Cleaners	49.2	53.0
Antifreeze	6.6	7.1
Paint, Thinner, Stains, Varnishes	218.5	235.3
Pesticides, Fungicides, Herbicides, Weed Killers, etc.	4.4	4.8
Other	4.2	4.5
<b>TOTAL</b>	<b>586.3</b>	<b>631.6</b>

(1) Including container weights

(2) See Table IV-4

(3) Based on current practices and assuming no future waste reduction; 1980-1990 household growth estimates from the Washington Office of Management & Budget

Table IV-7  
 Survey Responses  
 For Small Quantity Generators

Generator Type	Estimated # SQGs In-Region	Total # Survey Responses	% SQG In-Region Responses
Labs	11	7	64%
Chemical Mfg	8	5	63%
Cleaning	7	2	29%
Construction	37	17	46%
Shops	9	5	56%
Equip Repair	8	6	75%
Municipal	16	11	69%
Furn/Wood Mfg	13	8	62%
Laundries	12	7	58%
Other	18	11	61%
Pest App Serv	24	13	54%
Pest End-User	3	3	100%
Auto	49	25	51%
Whole/Retail	31	18	58%
Total	246	138	Avg 60%

Table IV-8  
Annual SQG Generator Rates (Pounds)  
By Generator Type

SQG Type	Anfz Etc*	Oil	Oil& Cont	Oil Filt	Solv	Solv& Cont	Paint	Paint& Cont	Pest	Pest& Cont	Clean	Other
Labs	0	0	0	0	0	385	0	0	0	0	2918	13
Chem	0	15919	15919	0	845	845	0	0	0	0	0	0
Clean	0	0	0	0	0	0	0	0	0	0	164	0
Construct	0	0	6095	0	8	523	0	798	0	0	0	0
Shops	367	7786	7786	82	1270	1270	492	645	143	143	691	0
Equip	0	2640	2640	0	8	8	53	53	0	0	0	0
Municip	629	8261	8261	0	660	660	149	409	0	0	63	0
Wood	0	0	0	0	354	354	795	873	0	0	0	7
Laundry	0	63	63	0	30	30	0	134	0	0	545	273
Other	0	0	0	0	69	124	13	23	0	0	400	0
Pest App	0	6579	9732	0	0	0	0	1623	0	3395	0	0
Pest End	0	0	0	0	0	0	0	0	0	48	0	0
Auto	1636	93338	95269	917	4341	4344	0	718	76	76	0	11
Whole/Ret	2352	24007	42411	0	1879	1904	0	37	0	0	0	1363

\* this waste category includes antifreeze, radiator flush, carburetor cleaners, and auto batteries

Table IV-9  
Regional Targeted SQG Waste

Waste Type	Estimated 1990 SQG Generated Tons/Yr	Percent SQG Waste Improperly Disposed	Tons/Yr Improperly Disposed
Anfrz Etc	2.5	52%	1.3
Oil	94.0	13%	12.3
Oil Filters	0.5	100%	0.5
Solvent	5.2	44%	2.3
Paint	2.7	66%	1.8
Pesticides	1.8	22%	0.4
Cleaners	2.5	100%	2.5
Other	0.8	25%	0.2
Total	110.0		21.3
Total Target'd Waste	94.5		12.8

- (1) Improper disposal methods include disposal in landfills, the community garbage, burned, or emptied down the drain or sewer
- (2) Targeted SQG waste represents an estimated 86% of the 1990 SQG waste and approximately 60% of the SQG waste currently disposed of improperly

Table IV-10  
1990 Household & SQG Waste Disposal Breakdown Tons /Yr

Waste Type	Proper SQG	Proper HHW	Improper SQG	Improper HHW	Total
Oil	81.4	34.0	12.3	70.5	198.2
Oil Filters	0	0	0.5	37.5	38.0
Anfrz Etc*	1.2	103.0	1.3	25.4	130.9
Paint	0.9	17.7	1.8	200.8	221.2
Solvent**	2.9	11.4	2.3	51.3	67.9
Pesticide	1.5	0.3	0.4	4.1	6.3
Cleaner	0.0	1.7	2.5	24.5	28.7
Other	0.7	0.5	0.2	3.7	5.1
Total Target Waste	0	0	13	313	326
Total	89	168	21	418	696

Waste Source	Proper Waste	% Total	Improper Waste	% Total	Total
SQGs	89	35%	21	5%	110
Households	168	65%	418	95%	586
Total	257	100%	439	100%	696

\* includes auto batteries

\*\* includes engine cleaners, gasoline, drain opener, and polish

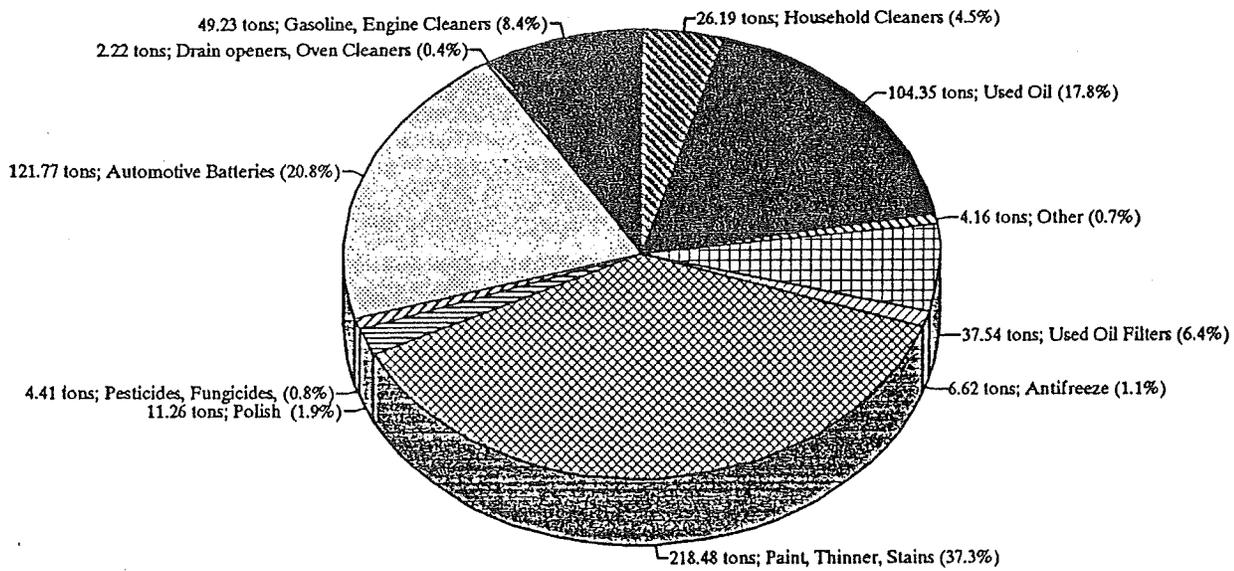
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Table IV-11  
Household & SQG 1990 and 1996  
Total MRW by County

County	Estimated tons MRW 1990		Projected tons MRW 1996	
	HHW	SQG	HHW	SQG
Adams	100.5	26.2	104.1	26.6
Grant	406.9	35.6	447.0	37.7
Lincoln	78.8	48.2	80.1	45.7
Total	586.2	110.0	631.2	110.0

# Figure IV-1 - Estimated 1990 Generation Of HHW In Region

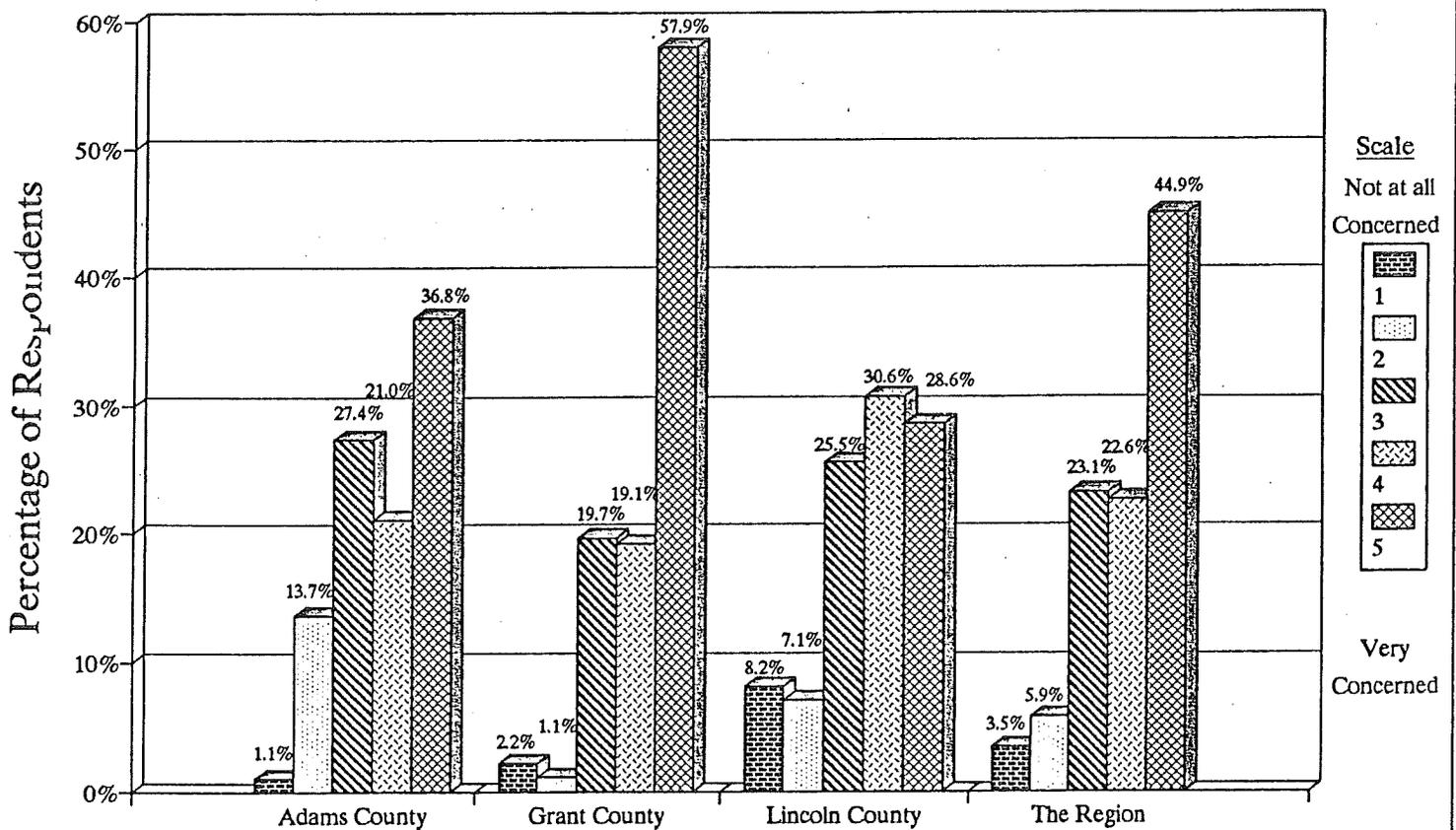
(Percentages include weight of containers)



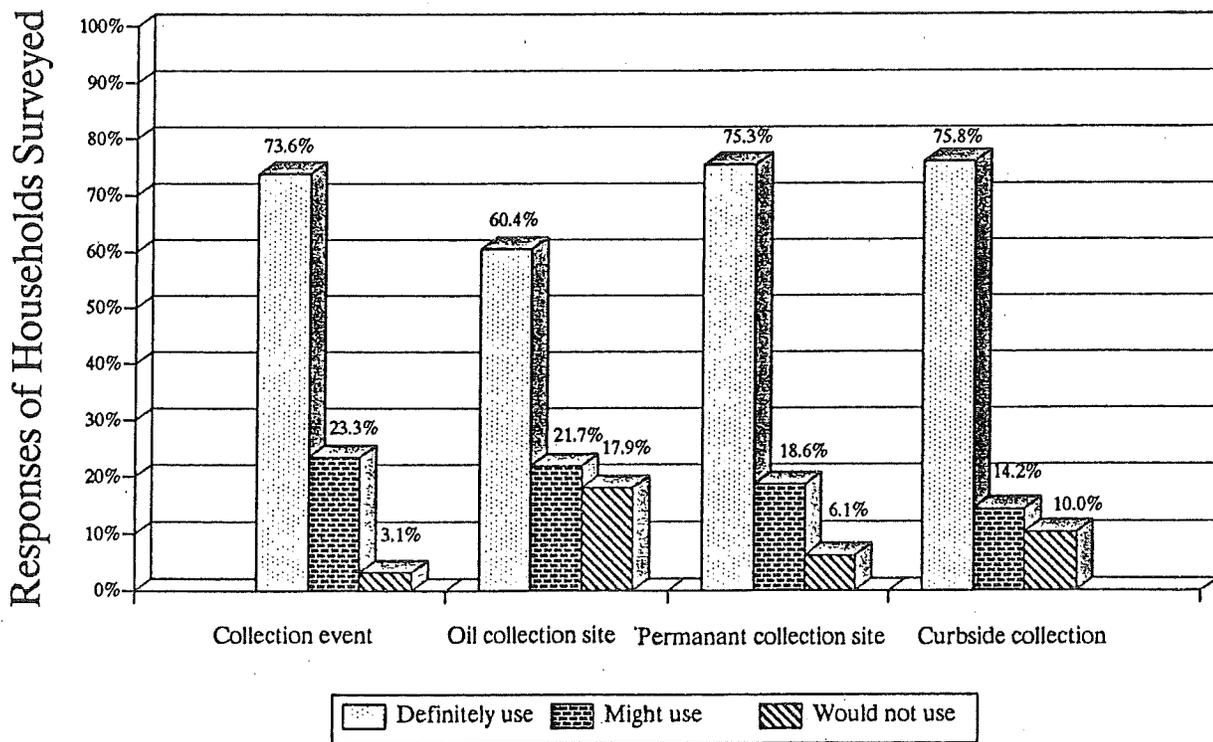
Total = 586.2 tons/yr

See Table IV-4 for more detailed waste type breakdown

### Figure IV-2 - Level Of Concern Regarding Disposal Of HHW

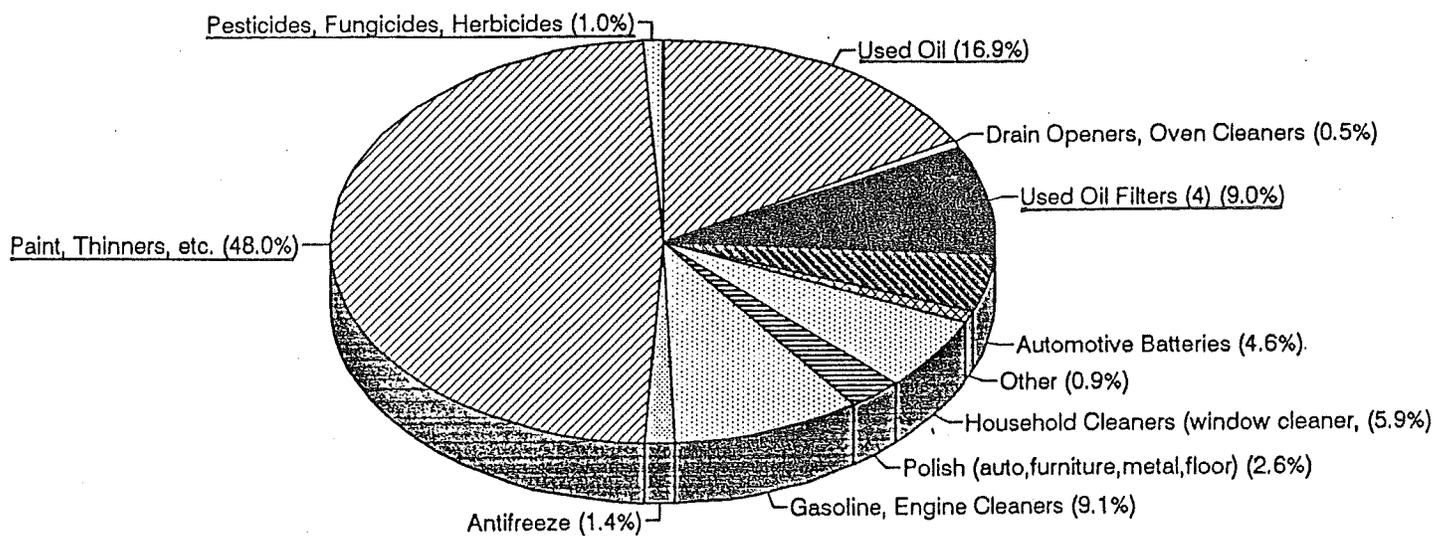


### Figure IV-3 - Interest in HHW Disposal Options



# Figure IV-4 - Summary of HHW Improperly Disposed

(1)

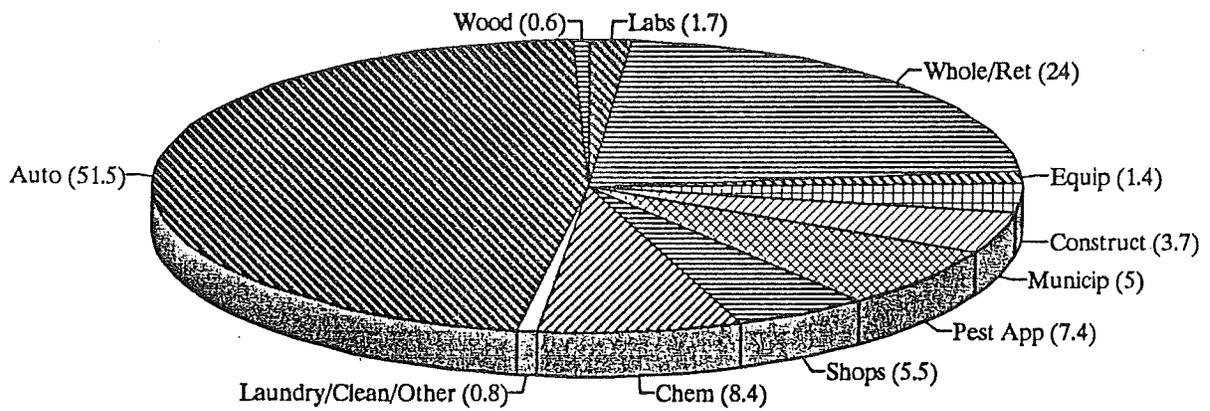


(1) See Table IV-5; Improper disposal includes disposal in the trash, down the drain, and disposal through dumping or burning

Targeted wastes are underlined

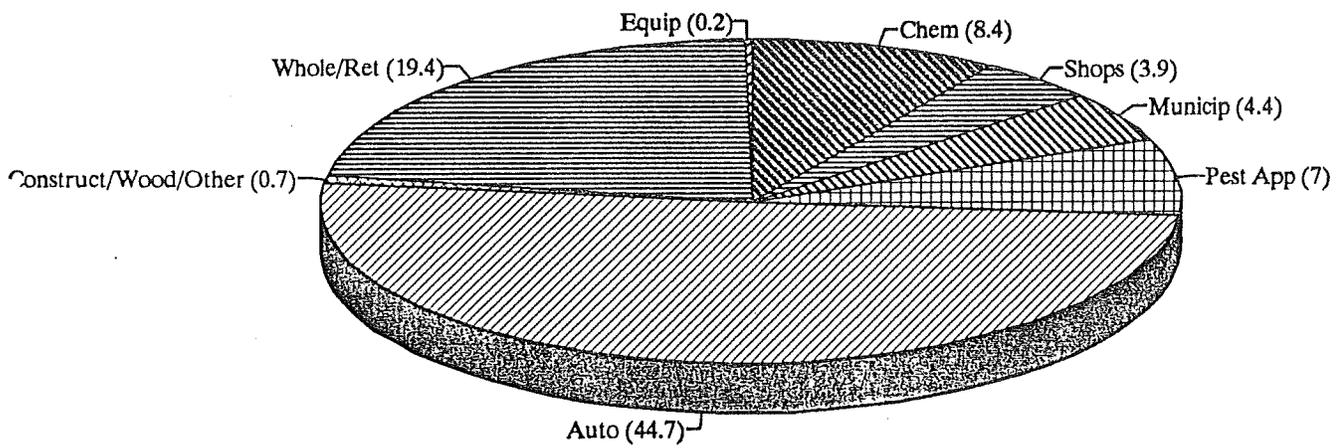
Total = 417.9 tons/yr

Figure IV-5 - 1990 Total MRW Tons  
Generated by SQGs



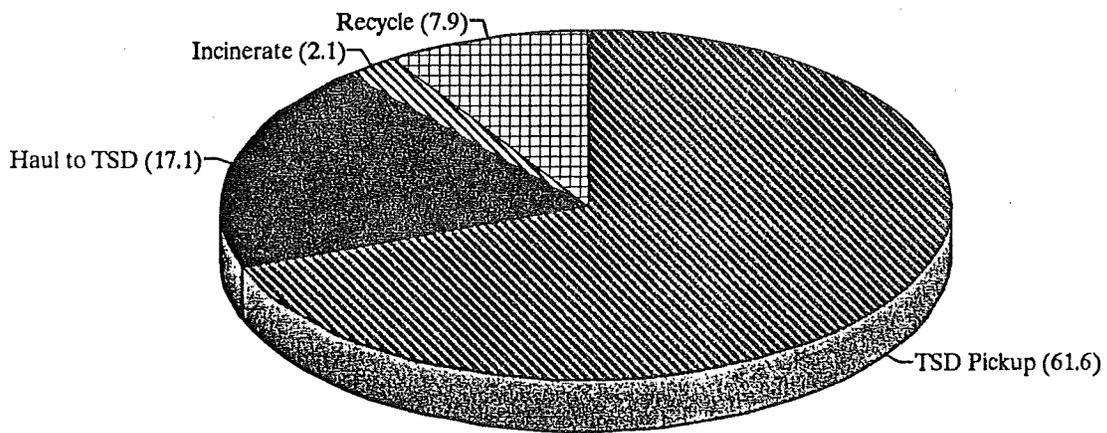
Total = 110 tons/yr

Figure IV-6a - 1990 Tons MRW Properly Disposed by SQG Category



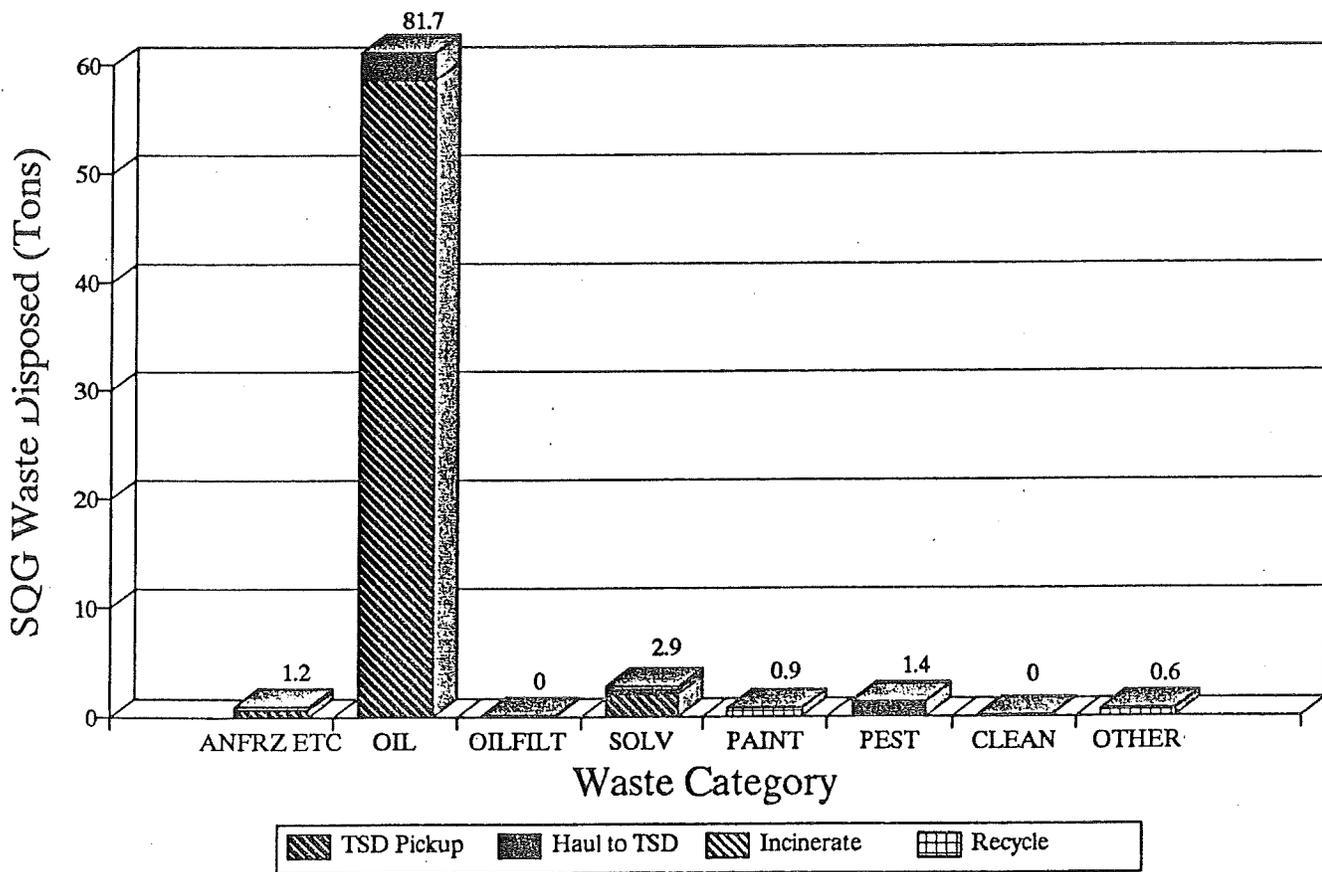
Total = 88.7 tons/yr

Figure IV-6b - 1990 Tons SQG MRW Properly Disposed by Treatment Method



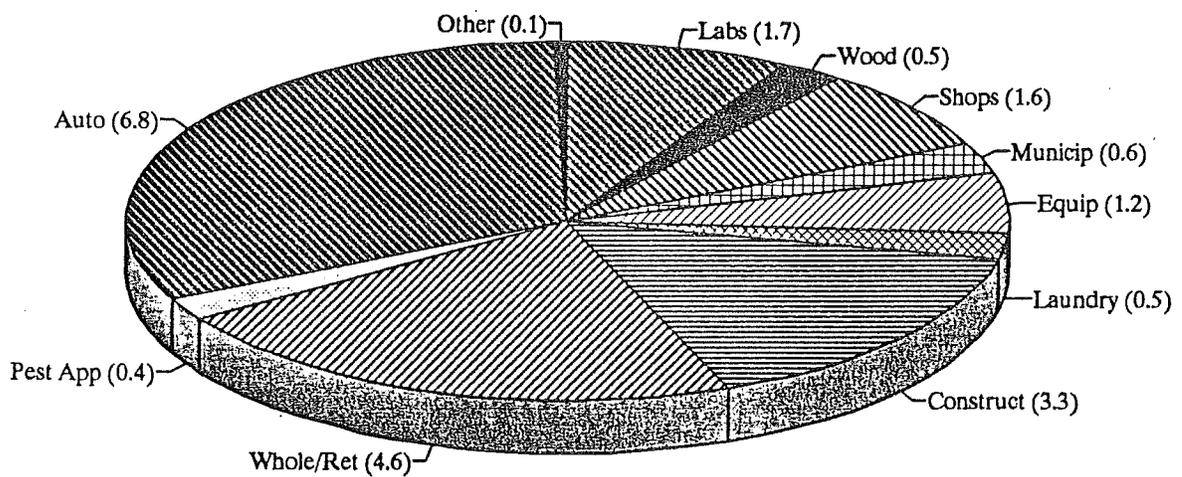
Total = 88.7 tons/yr

Figure IV-6c - 1990 SQG MRW Properly Disposed by Waste Type



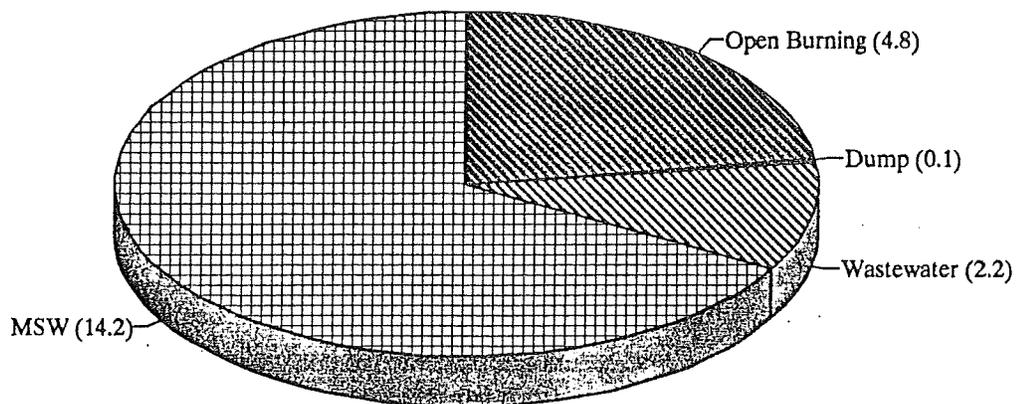
Total = 88.7 tons/yr

Figure IV-7a - 1990 Tons MRW Improperly Disposed by SQG Category



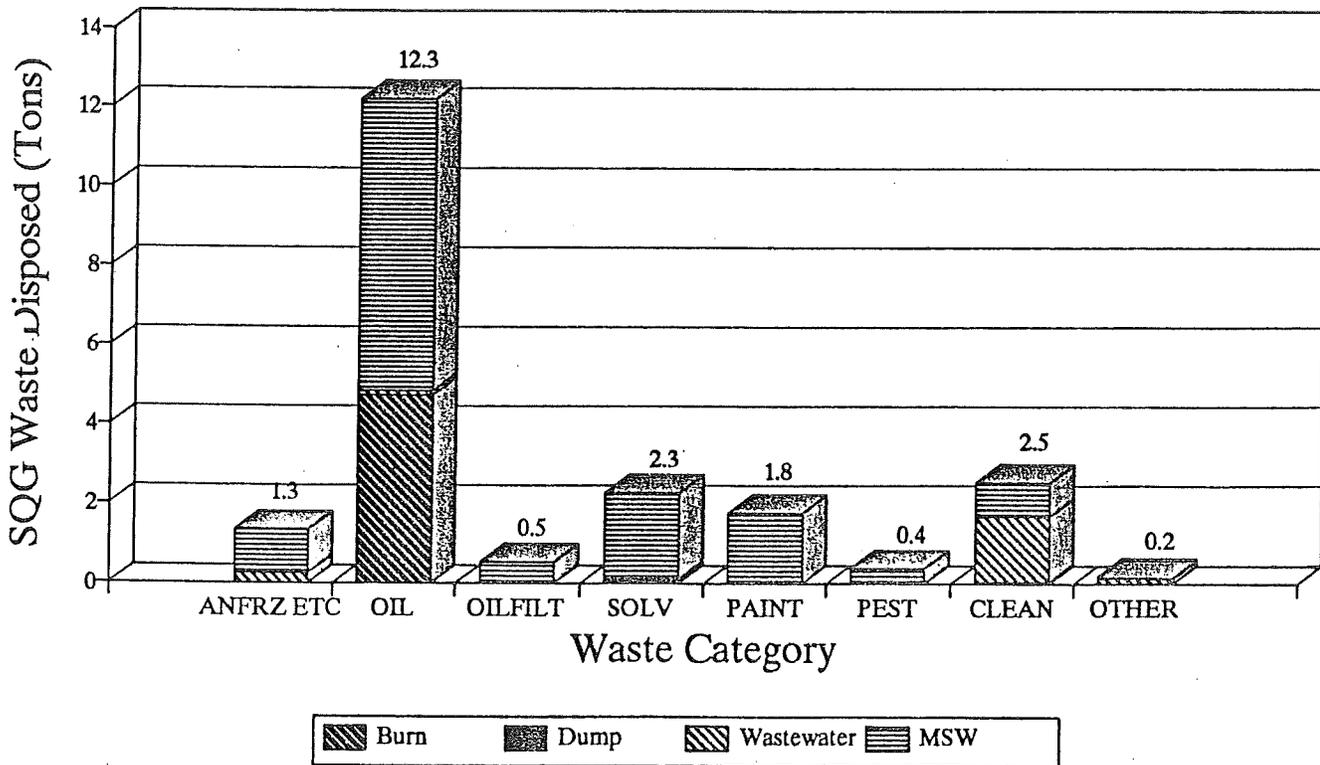
Total = 21.3 tons/yr

Figure IV-7b - 1990 Tons SQG MRW Improperly Disposed by Treatment Method



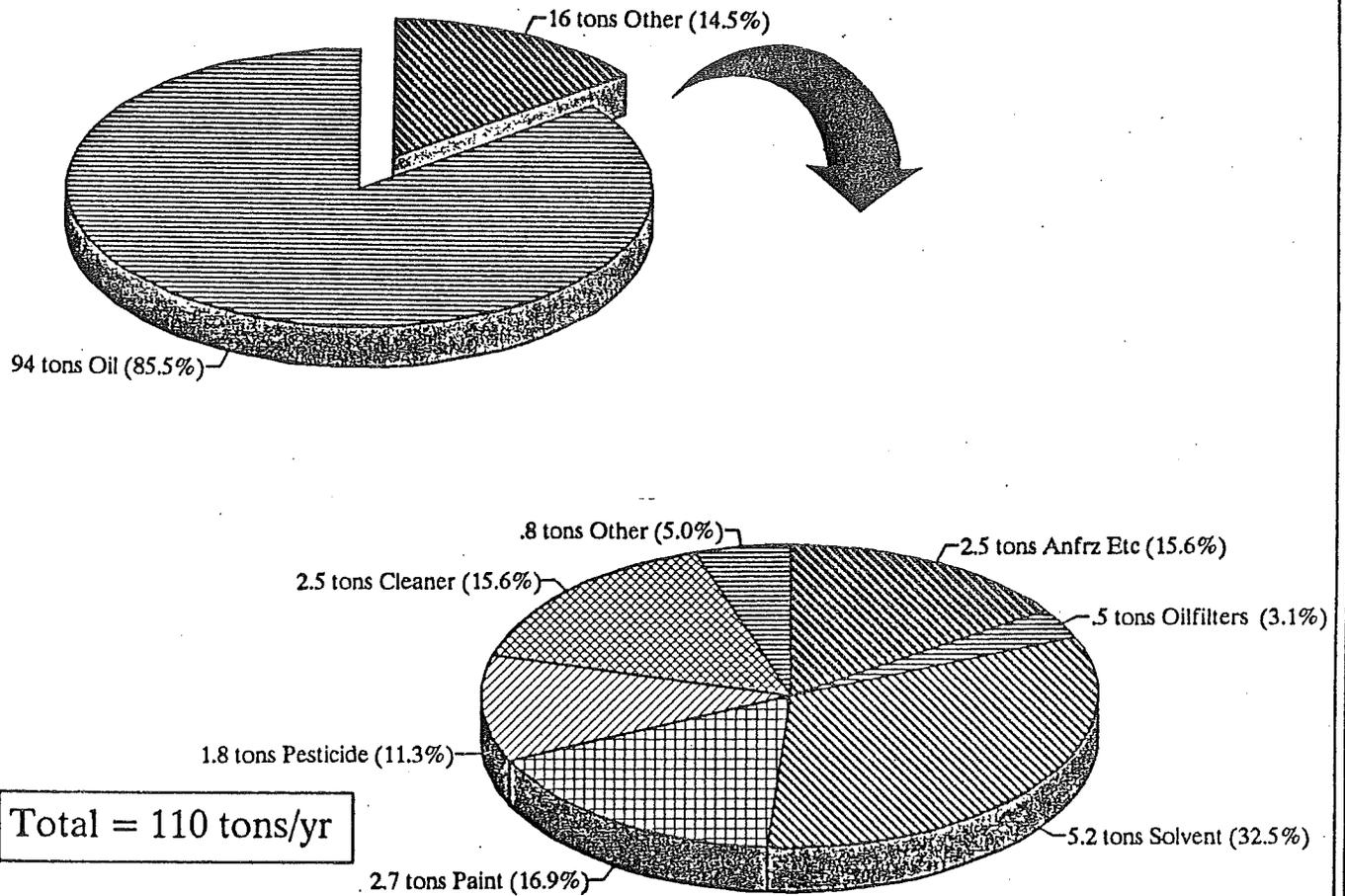
Total = 21.3 tons/yr

Figure IV-7c - 1990 Tons SQG  
MRW Improperly Disposed by Waste Type



Total = 21.3 tons/yr

Figure IV-8 - 1990 Tons SQG  
MRW Generated by Waste Type



# Figure IV-9 - 1996 Total Projected SQG MRW

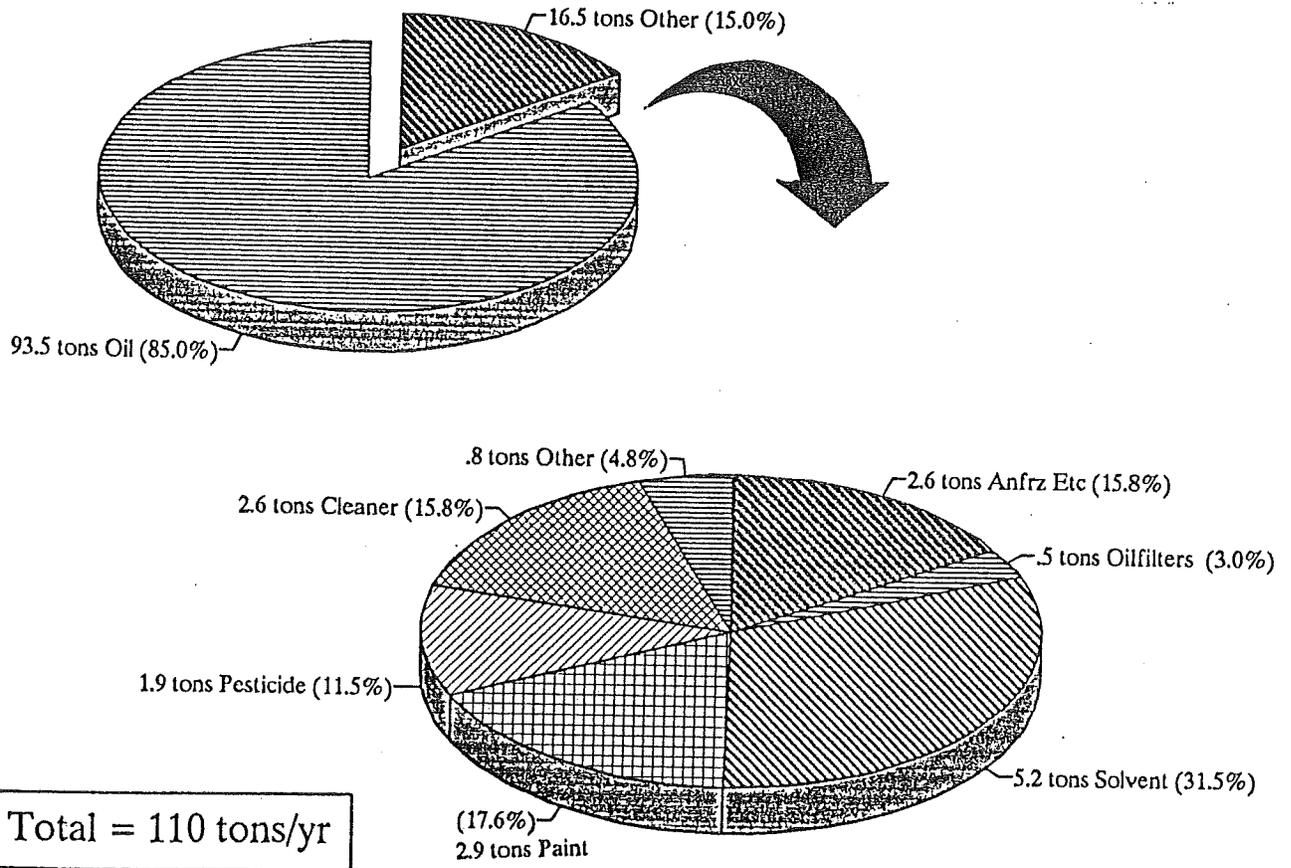


Figure IV-10 - Factors Inhibiting Hazardous Waste Law Compliance for SQGs

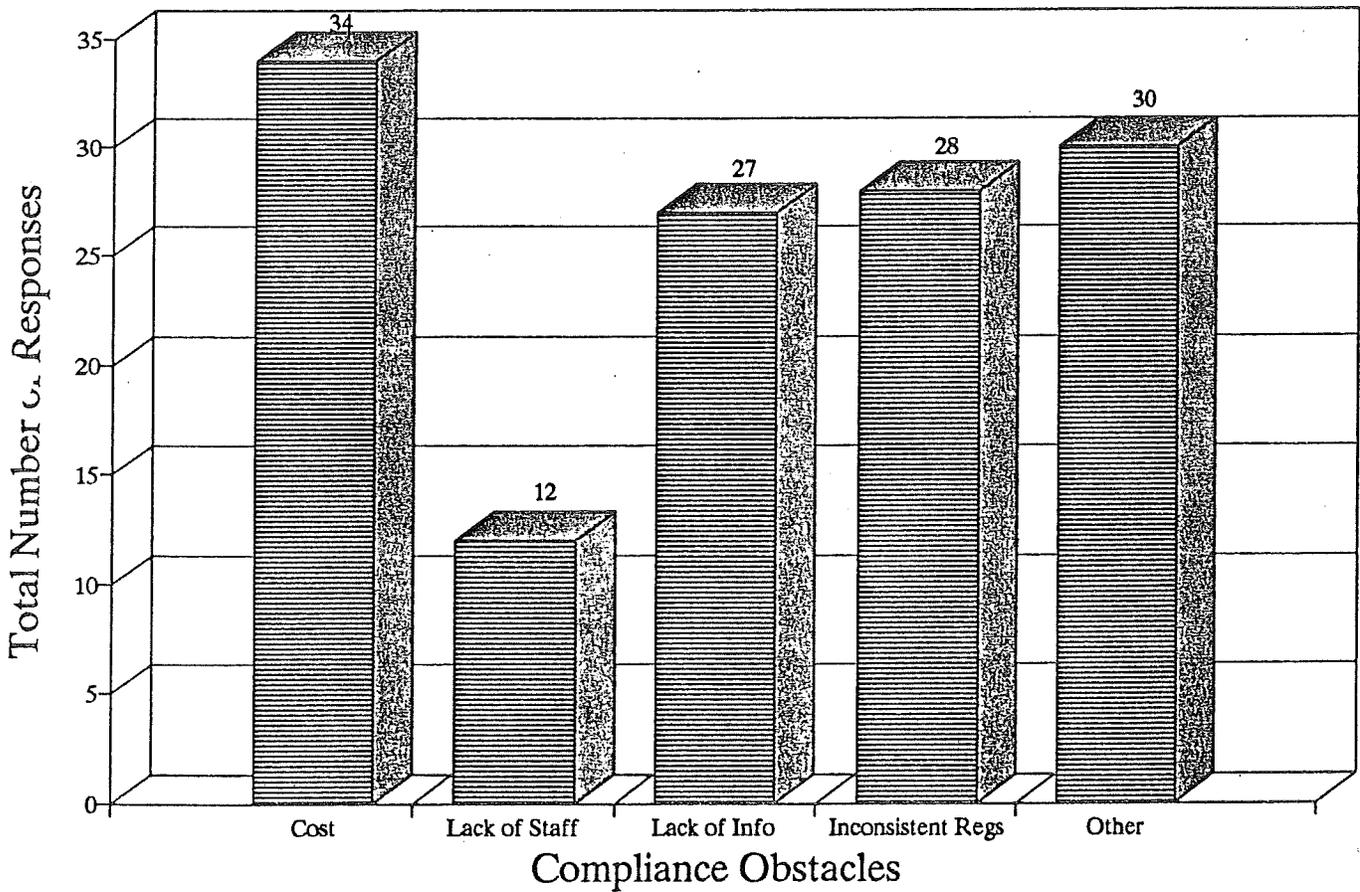


Figure IV-11 - SQG Regulation Information Sources

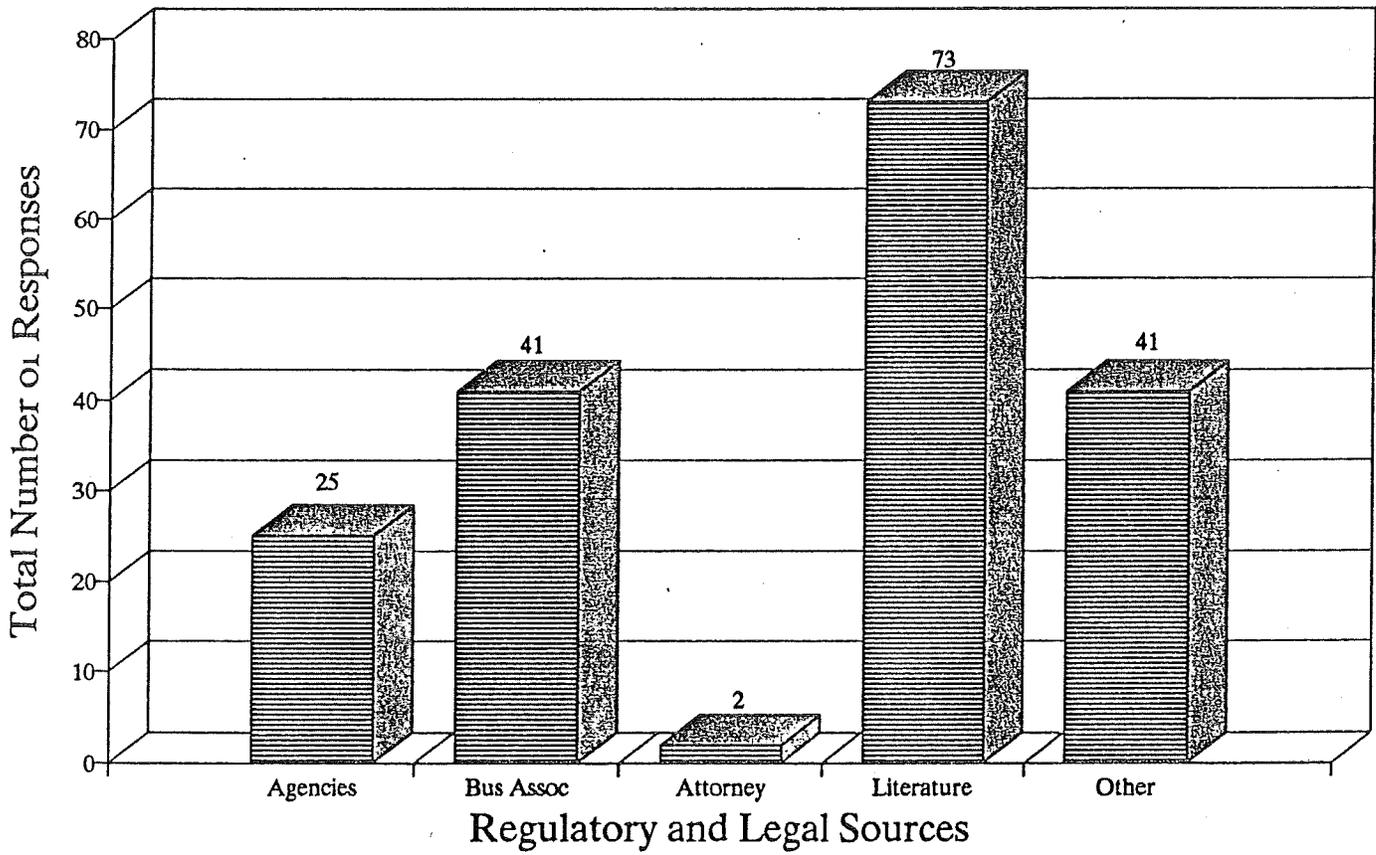


Figure IV-12 - SQG Utilization of Waste Management Services

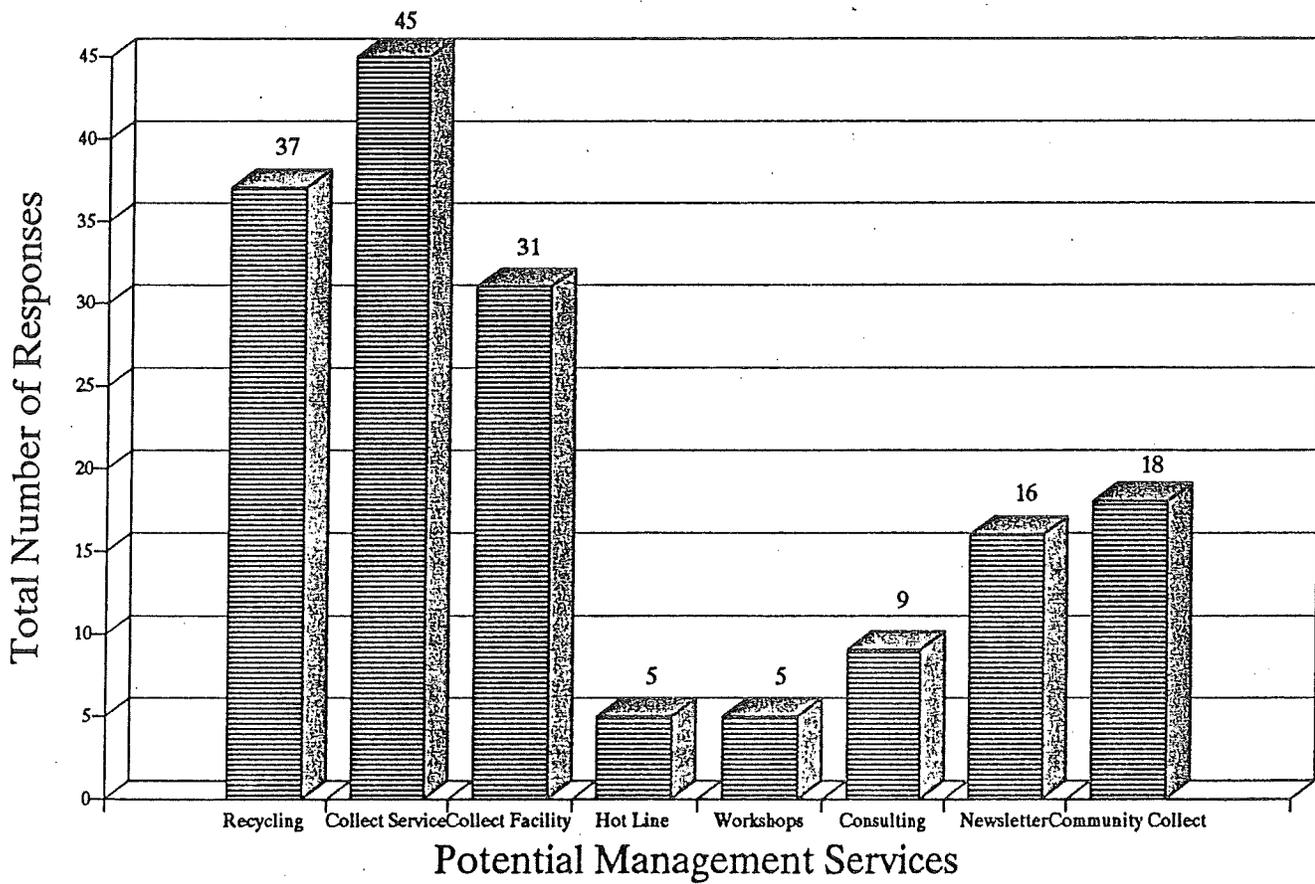


Figure IV-13 - Willingness of SQGs to Pay for County Waste Collection Service

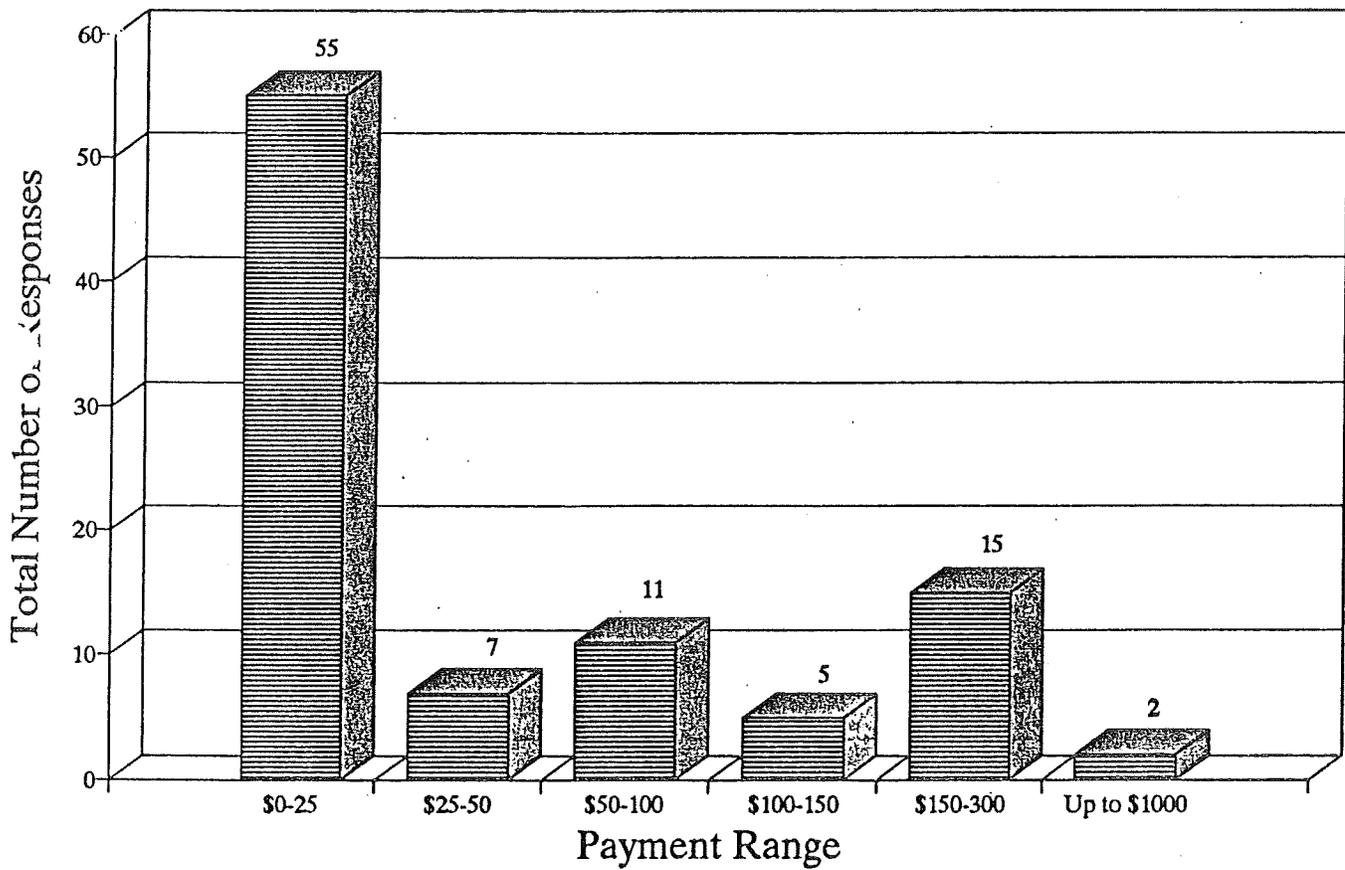
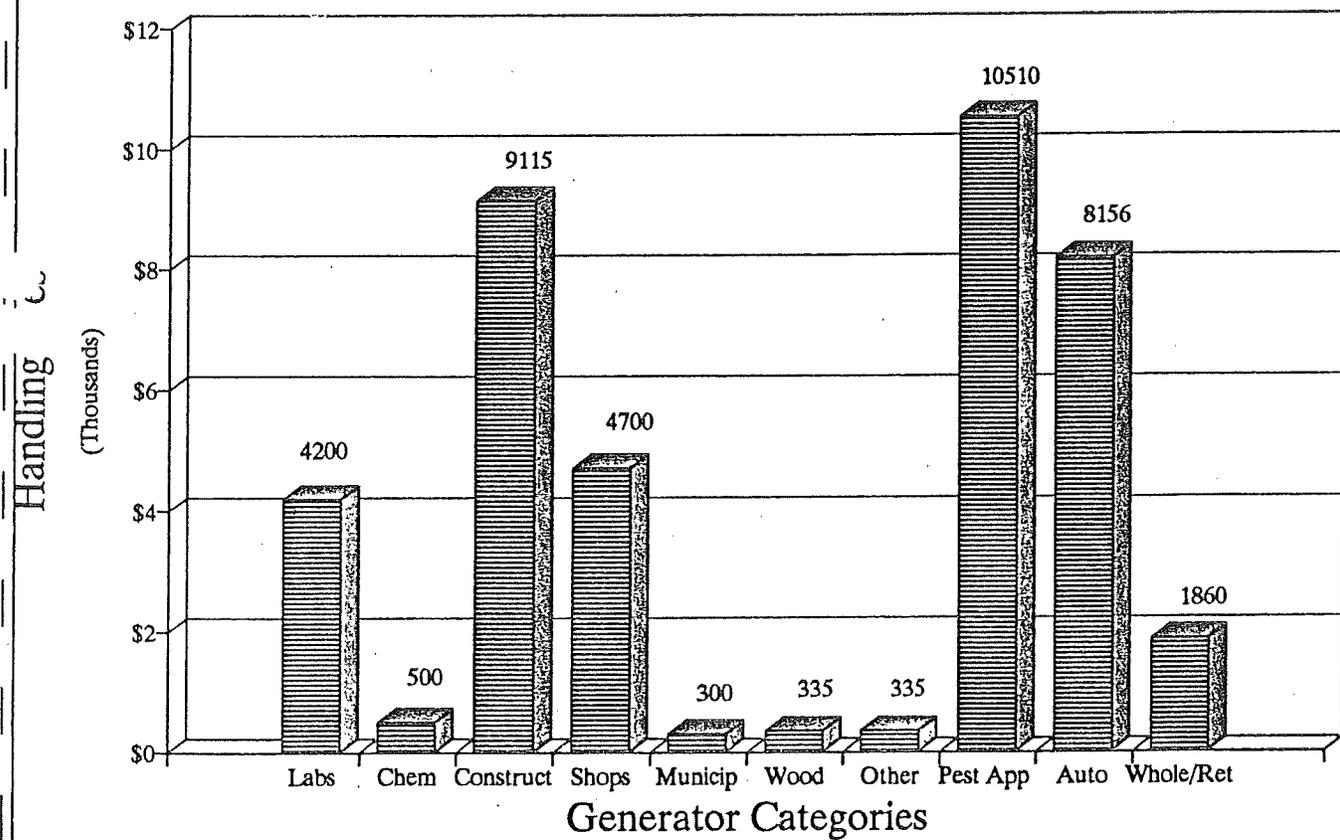
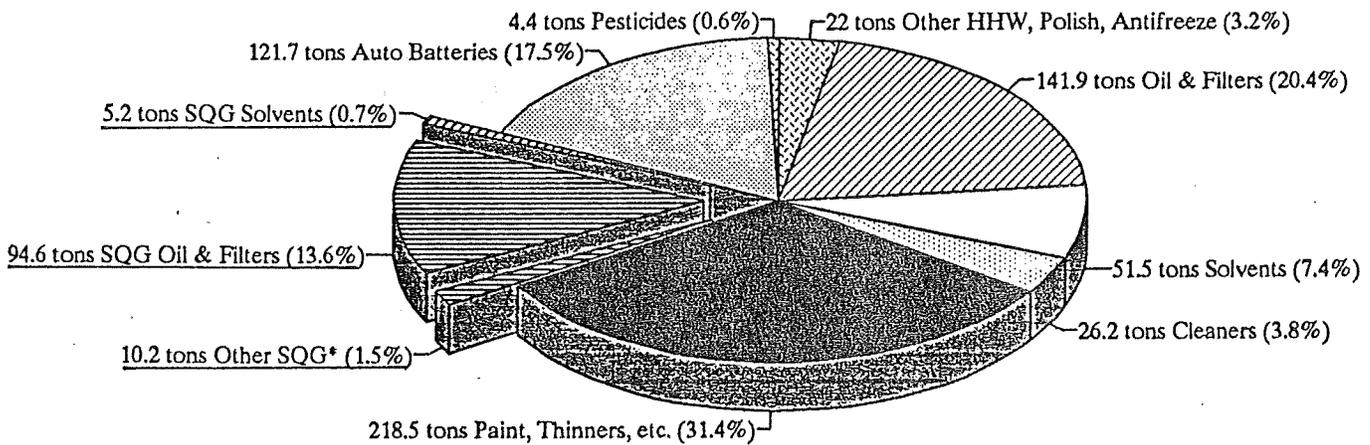


Figure IV-14 - Current Annual SQG  
Waste Handling Costs



# Figure IV-15 - 1990 Total MRW Generated by Households and SQGs

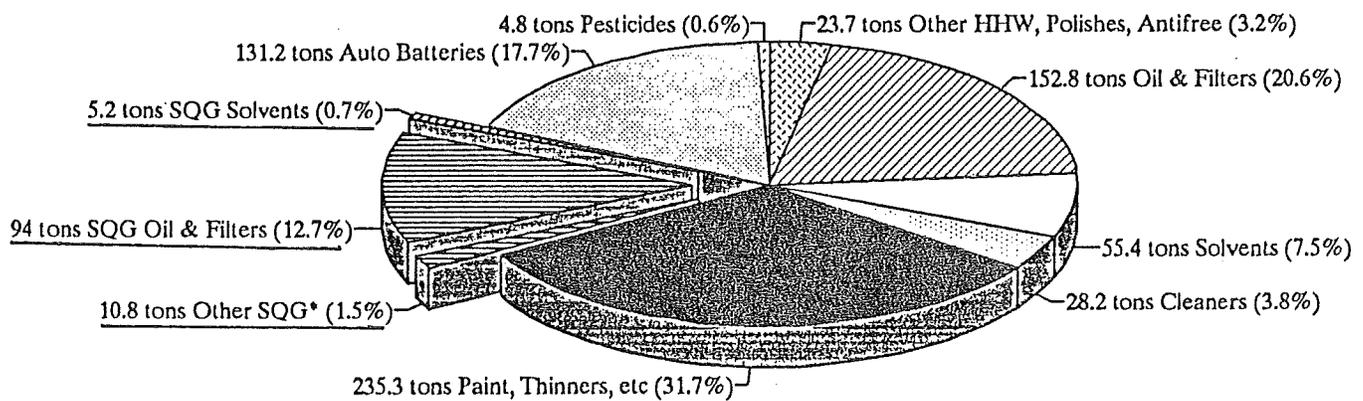


Note: exploded pie sections represent SQG MRW generation;  
remainder of pie represents HHW MRW generation

\* other SQG category includes 2.5 tons antifreeze, 1.8 tons pesticides, 2.7 tons paint,  
2.4 tons cleaners, and .8 tons other

**Total = 696.2 tons/yr**

# Figure IV-16 - 1996 Total Projected MRW for Households and SQGs



Note: exploded pie sections represent SQG MRW generation;  
 remainder of pie represents HHW MRW generation

\* other SQG category includes 2.6 tons antifreeze, 1.9 tons pesticides, 2.9 tons paint,  
 2.6 tons cleaners, and .8 tons other

**Total = 741.4 tons/yr**



## SECTION V

### CURRENT CONTEXT AND NEEDS OF MODERATE RISK WASTE MANAGEMENT

#### 1. INTRODUCTION

This section looks at regulations and programs that shape current hazardous waste management practices and at future local management needs. Particular attention is given to programs affecting MRW. This assessment of the existing structure and future needs for MRW management serves as a basis for management options in Section VI and the recommendations in Section VII.

#### 2. ROLES AND RESPONSIBILITIES

The future management of MRW in Grant, Adams, and Lincoln Counties will occur within a complex interaction of federal, and state legal requirements regarding hazardous waste developed over the past 15 years. Most of the resulting programs have developed in the past 5 to 10 years, and few of these are yet fully implemented. This Plan focuses on households and businesses that generate small quantities of hazardous waste that are not covered by most existing regulations.

The overall framework of hazardous substances regulation may appear to be somewhat haphazard, but some generalizations can be made about divisions of responsibility. Historically, local governments have taken the lead for the management of hazardous materials and for emergency response programs, state governments have overseen the "cradle-to-grave" management of hazardous wastes, and the federal government has taken the lead role in cleanup of contamination. These simplified divisions of responsibility are changing and in general, local governments are being required to accept a greater share of the responsibilities traditionally assumed by state and federal governments.

##### a. Federal Roles and Responsibilities

As a consequence of the United States production and use of more than 100 million tons of chemicals per year by as many as a million businesses, millions of tons of wastes are also produced. Prior to enactment of RCRA, there was little control over the disposal of hazardous wastes. As a result, a number of highly publicized environmental pollution incidents occurred (Love Canal, Valley of the Drums, and Times Beach) that raised public, governmental, and business concern over how hazardous wastes were being managed.

RCRA regulates only the larger commercial and industrial generators of hazardous wastes. The hazardous waste regulations developed under RCRA do not extend to hazardous waste generators that are the focus of this Plan. Although RCRA does not regulate MRW generators, much of the MRW which could be collected at MRW facilities would be disposed of by facilities permitted to accept hazardous waste under RCRA. Also, some SQGs may

fluctuate from month-to-month or year-to-year in their generation of MRW. If an SQG generates enough MRW, typically 220 pounds per month or more, it is no longer an exempt SQG but is an RCRA fully regulated business. Because RCRA is the larger regulatory environment within which MRW disposal and generators interface, an understanding of RCRA and related hazardous waste laws at the federal level is important. A brief description of RCRA and some of the related laws follows.

RCRA was enacted as the first step in regulating the potential health and environmental problems associated with solid hazardous and nonhazardous waste disposal. RCRA and the regulations developed by the EPA to implement the RCRA provisions provide the general framework of the national hazardous waste management system, including the determination of whether wastes being generated are hazardous, techniques for tracking wastes from point of origin to eventual disposal, and the design and permitting of hazardous waste management facilities.

Subsequent laws have extended federal oversight of hazardous waste. The Hazardous and Solid Waste Act (HSWA) was enacted to address regulatory gaps in RCRA. HSWA developed criteria for highly toxic waste and lowered the limit for regulatory exemption for small generators from 2,200 pounds (generated per month) to 220 pounds for hazardous waste and to 2.2 pounds per month for acutely hazardous waste. CERCLA, also implemented by the EPA, established Superfund for the cleanup of contaminated sites. The Superfund Amendments and Reauthorization Act (SARA) increased the Superfund budget and provided for a new emergency planning and community right-to-know program. Other federal laws of importance to hazardous waste management include the Toxic Substances Control Act (TSCA); the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA); the Federal Hazardous Materials Transportation Act; and the Clean Water and Clean Air Acts.

After May 1990, land disposal of untreated hazardous waste will be prohibited. This is hazardous waste that has not been reduced in volume or toxicity, solidified, oxidized or otherwise made less threatening to public health, safety, and environment. Spent dry-cleaning solvents and a used auto battery before being sent to recycling facilities are untreated hazardous wastes. The impact will be the required use of other, typically more expensive, disposal and treatment methods for hazardous wastes. This can also affect the costs associated with any MRW collected that is to be disposed of as a hazardous waste. Section 3004 of RCRA, as amended by HSWA, prohibits the continued placement, except for underground injection, of untreated RCRA regulated hazardous wastes in or on the land. The landfill ban is being phased in, and the HSWA amendments specify dates by which these prohibitions are to take effect for specific hazardous wastes. The ban on the first third of RCRA-listed wastes went into effect at the end of 1988, the second third after June 8, 1989, and the last-third after May 8, 1990 (see Table V-1). However, EPA may extend these effective dates for up to two years nationwide, following determination that there is insufficient treatment capacity.

The statute requires EPA to set "... levels or methods of treatment, if any, which substantially diminish the toxicity of the waste ... so that short- and long-term threats to human health and the environment are minimized." After the effective date of a prohibition, wastes may be land-disposed in permitted hazardous waste facilities if they comply with treatment standards developed by the EPA, or if the EPA has approved a site-specific petition demonstrating, to a

reasonable degree of certainty, that there will be no migration from the disposal unit for as long as the waste remains hazardous.

Federal hazardous waste law seeks to ensure uniform nationwide requirements. Federal statutes such as RCRA typically allow development of state or local requirements of equal or greater stringency. Other statutes, such as the federal Superfund, require development of state laws to enable the state to obtain full access to federal funding. For most statutes, implementation and enforcement may be principally delegated to the states.

A listing of key legislation of importance to hazardous waste generators and the corresponding federal and state agencies responsible for implementation is presented in Table V-2.

**b. Washington State Roles and Responsibilities**

Ecology has the authority to implement most of the RCRA regulations, with the notable exception of Superfund cleanup programs. Consequently, Ecology regulates the handling, storage, treatment, transportation, and disposal of hazardous wastes in Washington for generators that exceed the regulatory thresholds in accordance with the Hazardous Waste Management Act (RCW 70.105) and the Model Toxics Control Act. There is also a proposed rule change to WAC 173-303(070) that may require disposal of SQG waste in accordance with the adopted local hazardous waste management plan. SQGs are required to designate their wastes (i.e., determine whether they exceed threshold quantities), and must meet safe storage requirements. They are required to dispose of their wastes in one of four ways: reuse them; recycle them, dispose of them at a treatment, storage, or disposal (TSD) facility; or dispose of them at a permitted landfill. This last disposal option is being discouraged in favor of the first three options according to the Ecology MRW management priorities. SQGs may also be inspected (although infrequently) on a random basis by Ecology.

The legislature has recently enacted amendments to the solid waste laws (Chapter 70.95) which require a \$5.00 core charge for all vehicle batteries to encourage proper disposal through the existing retail sales establishments and recycling networks. Additionally, effective July 23, 1989, it is illegal to dispose of vehicle batteries except by delivery to a place where they are sold, a secondary lead smelter, or a person or entity otherwise authorized by Ecology to accept vehicle batteries.

Also, no landfill owners or operators are to knowingly accept used vehicle batteries for disposal. Grant and Adams County landfills separate the vehicle batteries from the waste stream. A Vancouver, Washington recycler collects the vehicle batteries from these landfills as well as from Moses Lake Auto Wrecking, automotive stores and Sears retail stores in the region. Another recycler from Spokane, Washington provides a battery pick-up service in the region. They could also provide a household battery pick-up service although it has not yet been implemented in the area. The landfills in Lincoln County do not allow vehicle batteries to be disposed at the landfills. These efforts are examples of how MRW are currently being managed.

Any person violating this new law will be subject to a fine of up to \$1,000.00 per battery. Along with the penalties is an educational element. This requires retail sales locations

to post the essence of the new law, including the recycling symbol, that it is illegal to put vehicle batteries in the garbage, and that the store must accept used vehicle batteries or include a core charge.

**c. Local Waste Management Roles and Responsibilities**

Because a significant portion of MRW is disposed as solid waste or sewage, MRW has become an issue for local authorities that regulate or control solid waste management and wastewater treatment. These agencies are currently faced with the problems of HHW and SQG wastes in the municipal waste stream. Both solid waste utilities and sewer utilities have the authority to prohibit discharge of hazardous chemicals into their systems. For example, the City of Seattle Solid Waste Utility is drafting an ordinance to ban moderate risk wastes from the solid waste stream. None of the sewer systems in the region have specific regulations that prohibit many of the typical types of MRW from entering that treatment system.

In Grant, Adams, and Lincoln Counties, several agencies, including solid waste and waste treatment agencies, play roles related to moderate risk waste:

**(1) Washington State Patrol**

The Washington State Patrol (State Patrol) has primary responsibility to respond to any hazardous waste spills on state freeways and highways. They control the scene until Ecology personnel or a Hazardous Materials Team arrive to clean up the site. As part of the SARA Title III requirements, a member of the State Patrol has been appointed as the hazardous materials coordinator for each county. One individual is currently acting as the coordinator for both Adams and Lincoln Counties.

**(2) Sheriff's Department**

The Sheriff's Departments in each of the three counties respond to incidents involving hazardous materials or wastes not on the state freeways or highways. In the event of a spill on a freeway or highway, the Sheriff's Department is responsible for notifying the haz mat coordinator (State Patrol).

When spills occur elsewhere in Grant and Adams Counties, the respective Sheriff's Departments are notified. They, in turn, coordinate with their Department of Emergency Services in responding to the spill. The Sheriff's Departments should have copies of the Material Safety Data Sheets (MSDS) for all the hazardous, flammable, the corrosive materials used in the County. The MSDS contain the necessary information to response to emergency situations. The Sheriff's Department and the Department of Emergency Services then determine how to handle a spill, contacting the Fire Department, Ecology or other agencies. Lincoln County is currently working on identifying which agency will have the emergency response role and responsibility for enforcing SARA Title III.

**(3) Washington State University Cooperative Extension Service and Other Pesticide Waste Disposal Programs**

The Cooperative Extension provides information to households and farmers about safe and legal use and disposal of pesticides. It is likely that some farmers are storing or even using restricted pesticides; however, most probably use up such materials before announced restrictions come into force. There are no local programs currently available to help farmers dispose of unusable pesticides. Once or twice a year there is a collection program for empty pesticide containers in Grant County. This program is operated by local commercial dealers in association with the pesticide manufacturers. The farmers bring their containers to designated locations where industry personnel collect the containers. This program has been going on for several years.

Restricted-use pesticides are typically classified extremely hazardous when these products become waste materials. Under the new recertification process for applicators of restricted-use pesticides, which includes a large proportion of farmers in the region, stricter rules and higher levels of hazardous pesticide management awareness will occur. This new level of awareness required by applicators should reduce the waste pesticides generated by farming operations in the region dramatically.

Grant-Adams County Cooperative Extension has begun to provide education to householders regarding household hazardous waste in Grant and Western Adams Counties. The Cooperative Extension has provided education to two different associations, Homemakers and the Association of University Women, by holding meetings and handing out flyers with information on recycling and alternatives to HHW products.

Lincoln-Adams County Cooperative Extension has included information in their newsletter on household hazardous wastes. They have worked together with the Health Department in providing educational materials for the public.

**(4) County Health Departments**

Each of the County's Health Departments is responsible for regulating the location, design, construction, and operation of all solid waste and wastewater facilities up to 3,500 gallons of sewage a day in their respective counties, and serves as the lead public agency for monitoring and regulating materials which are disposed of in area landfills. The Health Departments also regulate septic tank installations.

There have been incidents of illegal dumping involving hazardous materials ranging from small quantities of wastes which appear to be one-

time dumps to large quantities of wastes from numerous dumpings in the same location. Each County's Health Department is active in identifying this illegal dumping. The Health Department is active in the enforcement of the cleanup of these sites. Illegal sites must be cleaned up within 30 days, otherwise the property owners are fined or the information is turned over to Ecology for further action. Many illegal dumps in the region have been closed and covered in recent years.

All pesticide containers must be triple-rinsed and punched before disposal. None of the landfills knowingly accepts hazardous or MRW. Some landfills and transfer stations have signs that explicitly exclude all hazardous materials or waste from disposal.

**(5) Regional Local Hazardous Waste  
Advisory Committee (HW Committee)**

The HW Committee is primarily responsible for developing and recommending to their Boards of Commissioners, a Regional Local Hazardous Waste Management Plan for Grant, Adams, and Lincoln Counties and all participating cities in the region.

**(6) Public Works Departments (PWD)**

The PWDs in Grant and Adams Counties administer the solid waste disposal at the public landfills in each county. Adams County has a landfill near Bruce. There are three landfills in Lincoln County: one is owned and operated by the City of Odessa; another is on leased property partly privately owned and partly publicly owned but County-leased and operated near Harrington; and the third is operated by a private party (Northwest Landfill) near Wilbur and managed jointly by Almira, Creston, Wilbur and Lincoln County. In Grant County there are two MSW landfills. One is operated by the County and the other is operated cooperatively by Electric City, Coulee Dam, Grand Coulee, and Elmer City. Each of the landfills is a likely disposal site for most of the MRW generated in the region. The daily operations at the area landfills may be an important part of the MRW planning process as they may be modified to properly collect specific hazardous waste for proper disposal.

The secondary wastewater treatment facilities in the region dispose of their sewage sludge via land application. The Municipal and Domestic Sludge Utilization Guidelines (WDOE 1982) identify specific requirements for disposing of sewage sludge. None of the sewer districts have regulations that prohibit many of the typical types of MRW from entering that treatment system. MRW can upset the normal operations of wastewater treatment plants and generally pass through the system untreated. Consequently, MRW can become concentrated in the sludge and enter the environment when the sludge is disposed.

The Health Department requires the treatment facilities to obtain a permit for land application of the sludge. Septage pumper companies are also required to have a permit for land application of their sludge.

**(7) County and City Planning Departments**

The State requires all counties to identify locations or designate zoning use areas in which new hazardous waste treatment, storage, or disposal facilities are allowed.

All three counties have state-approved planning code designations, as have the cities of Othello, Moses Lake, Davenport, and Reardan. Coulee City has submitted their zoning designation for approval to Ecology.

**(8) SARA Title III**

Under this federal law, businesses are required to furnish inventories and other information on hazardous materials they use. The implementing agency collects and organizes these data into an area-wide plan, allowing for greater response preparedness and protection of fire fighters and the general public in case of fires or other emergencies involving hazardous materials.

The Department of Emergency Services in Grant County is responsible for enforcing SARA Title III requirements. There are 52 business that have voluntarily complied. Although they do not have anything currently in place, the Department of Emergency Services plans to implement an enforcement program in the near future.

The Fire Department in Adams County has been working with the County Building and Planning Departments in collecting information on the businesses in Adams County. There is not an exact count of the number of businesses that are complying or are not complying with the SARA Title III.

Lincoln County is currently involved with setting up and implementing SARA Title III information. A committee has recently been formed to write a SARA Title III plan for the County.

**(9) Proposed ECOS Project, Adams County**

The ECOS Corporation has submitted a permit application to the Department of Ecology to develop a hazardous waste incinerator and landfill in Adams County. A RCRA Part B permit application for the entire facility (incinerator and landfill) was submitted to Ecology in July 1990. The facility is being designed to receive primary solid hazardous waste with some liquid waste and a small amount of sludges. The ECOS

Corporation owns the property where the facility is proposed to be sited, outside of the Lind city limits.

**(10) Proposed Rabanco Project, Grant County**

Rabanco Ltd. is currently in the Environmental Impact Statement review and permitting process for a hazardous waste incinerator in Grant County. An application for the landfill project was initially submitted in 1985 with an amendment in 1986 to increase the scope to include an incinerator. Ecology has asked that the two projects be identified separately as they will be requiring two different permits because: (1) they are different types of projects and (2) there are two different owners of the property for the proposed projects. (Grant County owns the land sited for the landfill, Rabanco owns the land where the incinerator is to be sited). A revised application for the hazardous waste incinerator project was submitted in 1988. It is unknown at this time when, if ever, a permit will be issued for either project.

As part of the agreement for siting these projects in Grant County, Rabanco has agreed to accept hazardous wastes from the agricultural sources in Grant County at no charge to the farmers or the County. They are hoping the materials can be delivered to some key points in the County, such as agricultural product distributors properties, where they will collect the bulk wastes and dispose of them at the incinerator. Rabanco would like to be able to make the same arrangement for HHW and SQG wastes in the County if they were collected in a centralized location.

**d. Existing Washington State Hazardous Waste Programs**

Several statewide programs encourage proper management of hazardous wastes, including MRW. Under Initiative 97 of 1988, Ecology is authorized to provide planning, management, education, and technical and financial assistance for hazardous waste programs. Initiative 97 also provides funding for local solid and hazardous waste plans and programs.

Under the Washington Waste Reduction Act (1988), the State has made funds available for technical assistance, including workshops and seminars to help generators reduce the amount of hazardous wastes they produce, and a database on proven reduction techniques. Ecology sponsors the statewide "Hazardous Substance Information Hotline," that answers questions about hazardous substances in general. Ecology also sponsors a "Recycle Hotline" that provides information on local recycling options, including those for waste oil and batteries.

Public and private agencies have prepared general and targeted waste educational materials such as brochures, newsletters, mailings and media spots on HHW. Ecology's Hazardous Substances Information and Education Office acts as a clearinghouse for many educational materials. The Educational Subcommittee of the Hazardous Waste Interagency

Coordinating Committee has completed a bibliography of various audio/visual and printed information on HHW.

Both private and public agencies have educational materials specifically targeting SQGs. Several trade associations have made efforts to inform their members of regulations concerning proper waste disposal.

**e. Private-Sector Roles and Responsibilities**

Private facilities that handle regulated hazardous wastes are also available to MRW generators. Hazardous waste firms offer collection service to SQGs, including consultation about regulations, identification of hazardous wastes, and transport of hazardous wastes to treatment, storage, and disposal (TSD) facilities. However, these firms often require hazardous waste profiles (laboratory tests to classify the wastes) before accepting wastes for treatment or disposal. These tests are often very expensive for the small volumes of wastes brought in by the SQGs. For this reason, many SQGs choose not to use these services.

All TSD facilities handling hazardous waste in Washington must be permitted by Ecology and must use the uniform hazardous waste manifest form to ship hazardous wastes off-site. These firms must also comply with state and federal regulations.

Collection services provided by recyclers or reclaimers often provide reasonably priced waste management for SQGs. One recycler collects some SQG wastes (solvents, carburetor cleaner, thinners). They will be collecting waste oil and antifreeze sometime in the future. Another firm collects waste oil throughout the region, with a minimum requirement of 300 gallons for a pickup. A firm collects solvent, carburetor cleaner, and thinners from body shops and dry cleaners in Lincoln County on a 4-, 8-, or 12-week collection service and hauls these wastes out of the County primarily for recycling. The same firm collects the same wastes from SQGs in Grant and Adams Counties on a 3-, 6-, or 9-week basis.

Under recent changes in Chapter 70.95 RCW, used automotive batteries must now be accepted back by all points of sale for recycling. All new batteries sold will include a \$5 core charge to encourage the users to recycle them. This mandated reversal of the battery distribution system will increase the proportion of batteries recycled in the region.

**3. FINANCING**

The financing or funding of this Plan's recommendations may be accomplished through various methods. The funding of programs typically are generated from private, state and/or local sources.

**a. State Funding**

Initiative 97 will generate revenue for local programs and to clean up contaminated sites in Washington. With the passage of Initiative 97, 53% of the state funds collected will be put into the Local Toxics Control Account. These funds are to be used, in descending priority order,

for: remedial action, local hazardous waste plans and program implementation, and solid waste plans and program implementation.

Ecology is planning to distribute monies during 1991 to counties for local hazardous waste plan implementation on a 75% grant basis if applied for by the end of June 1991. The grant amounts per county are a base rate of \$30,000 plus 39 cents per capita per year. This level of grant support is expected to be ongoing from year to year. The State's Local Toxics Control Account is the source of the grant funds. Funds provided under this grant program will be available for implementing programs contained in Ecology-approved local hazardous waste plans. For the three-County region, with approximately 74,100 residents, the proposed 75% grant would amount to \$90,000 (for the three counties) plus approximately \$28,900 (on a per capita basis). This would result in a total of approximately \$118,900 for program implementation. These monies do not need to be expended only in 1991.

To match this grant on a 25% basis at the \$118,900 estimate, the local jurisdictions in the region would have to provide cash, existing or new staff support, or other acceptable grant contributions totaling about \$39,600 or about 53.5 cents per capita per year. The total funds then available for the region's plan implementation would be approximately \$158,500 in 1991. This is the maximum matching funding level for this grant program. Some, all, or none of it requires application.

Substitute House Bill No. 2390, which passed in March 1990 and amends RCW 70.95, identifies a fee "for the privilege of generating or potentially generating hazardous waste in the state. The annual amount of \$35 fee will be imposed upon every known generator or potential generator doing business in Washington in the current calendar year or any part thereof." The fee can be used for SQG education and technical assistance.

25  
20  
For 1991 Ecology expects to implement a flat rate grant amount per county plus a per business addition similar to the general plan implementation grants previously discussed. This grant program is implemented on a 75% local match basis in 1991. The maximum grant monies available from Ecology are \$32,897 for the region. This would require a \$10,966 local match for a total matching program of \$43,863.

~~Ecology is planning to continue grant funding at least through the 1991-93 biennium for specific MRW collection programs. There has been approximately \$800,000 allocated for this grant program during the 1991-93 biennium but the grants will be available at the 50% local match level. These grant monies are expected to be awarded competitively.~~

Each of the current Ecology grant programs listed above is independent of the others so that any combination of grant programs may be applied for by local agencies.

Beginning in January 1992 Ecology is planning to implement a new combined solid and hazardous waste grant program called Coordinated Prevention Grants or CPG. They are planning to open the CPG program for applications at about April 1991 for funding to start in January 1992.

The CPG program will be administrated on a 2-year grant cycle and include in one grant process funding for local solid and hazardous waste plans and implementation activities. To be eligible for the CPG the jurisdictions must have an adopted Local Hazardous and/or Solid Waste Plans and the lead implementation agency must be identified in the plans.

Ecology plans to fund CPG programs in this priority:

1. Required Solid and Local Hazardous Waste Planning
2. Programs and projects to implement adopted local hazardous waste plans
3. Waste reduction and recycling programs and projects
4. Other adopted solid waste plan implementation

To provide a dependable level of funding for all counties, Ecology plans to implement the CPG program which will provide approximately \$100,000 per county plus approximately \$2.00 per capita per biennium beginning in 1992. These grant funding levels are expected to provide an estimated 65% match from Ecology with the remainder being contributed from local sources.

In the 1994-95 Biennium there may be \$3.00 per capita available. Using the 1989 population figures for the region again, 74,100, Ecology may make up to 220,000 available. The total per capita CPG generated funding would then be up to about \$333,000 plus the \$450,000 per county CPG funding total up to approximately \$783,000 for the 1994-95 Biennium. Ecology anticipates that the future funding will not be any less than previous periods.

#### **b. Local Financing**

Local source of funds for MRW planning and programs may come from solid waste tipping fees, wastewater utility fees, and waste generator use fees. Increasing wastewater rates would broaden the revenue base for funding local programs although the administration of such an increase would require the cooperation of all the publicly owned wastewater treatment facilities. Another issue in using this revenue base is that private septic and other treatment systems would not share in the cost of the funding. On the other hand, these facilities will directly benefit from the reduction of MRW entering their systems. Worker safety, effluent/sludge quality and system upset are serious risks associated with MRWs entering these systems.

Charging households separately for all or part of the collection and disposal costs is a way to fund programs. It has been demonstrated in collection and pick-up programs that MRW disposal fees on SQGs and household generators to defray the cost of MRW programs discourage participation. Households and small businesses typically need encouragement to dispose of wastes properly, for instance, through education and/or "free" collection events or facilities. To encourage proper disposal by the largest proportion of citizens, the actual costs for program implementation may need to be covered by funds not linked directly to the MRW services provided.

General revenues, collected from property taxes, are used to operate most County programs. The funds are not targeted for specific programs, and each year departments must submit requests for funding. Each County could designate a certain amount of the property tax to go towards the new program for the region.

Increasing each of the Counties' sales taxes could have been one method of raising revenues to finance a MRW program. However, all three Counties are currently at the 1% limit mandated by the State and cannot raise taxes at this time. There is currently no proposed legislation to allow the local sales tax to be increased.

Use of solid waste funds in the region is restricted to solid waste activities. Therefore, local hazardous waste programs would only be in competition with other solid waste programs, such as landfill operations and waste reduction programs. It is also generally easier to increase solid waste tipping fees than it is to raise taxes, thereby making it easier to cover increasing costs of local hazardous waste management and implementation. The relative size of the annual solid waste funds compared to the requirements for local hazardous waste programs also influences the prioritization of budgets. The solid waste funds cover costs associated with landfill and transfer station operation and associated personnel costs. These costs are significantly greater than implementing the hazardous waste programs. Each of the Counties that operate landfills could raise their tipping fees to cover some or all of their share of the costs of the MRW program.

Solid waste collection fees are currently levied by some cities in the region. An increase in these fees to pay for a hazardous waste management program could be justified because hazardous wastes from SQGs and households are often disposed of in the solid waste and wastewater systems. Hazardous wastes impose added costs onto the maintenance of these systems. Therefore, those responsible for operating the systems should be able to charge residents and businesses the costs of developing ways of minimizing the amount of hazardous waste in the solid waste or wastewater streams. Since garbage collection is regulated by either the cities or the Washington Utilities and Transportation Commission, it may be administratively difficult to institute and coordinate fee increases for the entire region. A tipping fee increase, where this is possible, levied by a County may be easier to administer. This may be a viable option for Grant and Adams Counties, where all of the population in Grant County and about half in Adams County, of the population is served by county-run solid waste facilities. Lincoln County has only private landfills, and thus cannot raise solid waste tipping fees unilaterally.

The business license fee taxes paid by local businesses could be another funding source for local hazardous waste programs, especially for SQG programs. As with collection franchise fees, these types of taxes and fees are administered only by cities and towns; counties cannot legally levy any type of general fees or taxes against businesses. Thus, all the cities and towns in the region would have to approve of these fee increases to adequately and equitably fund a regional hazardous waste program. Additionally, because some residential and commercial development is located in unincorporated areas in the Counties, a large number of businesses would avoid paying the fee or tax.

#### **4. REMEDIAL ACTION SITES**

The Washington Department of Ecology (Ecology) maintains a list of contaminated sites requiring remedial action. According to Ecology, the sites listed in Table V-3 have been identified by Ecology as of January 24, 1990 and are listed under the Hazardous Waste Investigations and Clean/Up Program, as of the May 1, 1990 update. Contaminants at each of the listed sites originated from major industrial sources which are now regulated. There are no sites identified in Lincoln County. All of the sites in Adams County have been confirmed (the presence of a hazardous substance has been confirmed by laboratory or field determination) and were the result of spills. The National Guard Shop site in Ephrata has not been confirmed to date but is believed to have also been caused by a spill.

#### **5. LOCAL REGULATIONS**

Currently there are no local ordinances or regulations dealing specifically with MRW.

#### **6. EMPLOYEE TRAINING AND REPORTING**

The amended solid waste management law, Chapter 70.95 RCW, requires that waste collectors and operators refuse vehicle batteries for disposal at the landfills as of July 23, 1989. Grant County has a place at the landfill designated for vehicle batteries. A private firm collects batteries from the Grant County landfills. The landfills in both Lincoln and Adams Counties do not allow batteries to be disposed of in the solid waste stream but they do not have a place designated at the landfill for vehicle batteries. Occasionally, MRW is unknowingly collected by the refuse haulers. The public is not prohibited from disposing of MRW, other than vehicle batteries and 55-gallon drums unless they are rinsed and clean with lids and bottoms removed, at the region's landfills.

As batteries are excluded from the landfills and more waste generators become aware of the need for proper MRW disposal through publicity, education and the implementation of SARA Title III, the Counties and the individual cities will need to consider training and education for their employees. The local Fire, Sheriff's, and Agriculture Department representatives, as well as Ecology educational workshops and existing educational materials, would be places to start this process.

#### **7. STATE-REGULATED DANGEROUS WASTE GENERATORS**

Ecology's Dangerous Waste Regulations (Chapter 173-303 WAC) are the state-equivalent of the federal RCRA hazardous waste regulations. The state makes a distinction between "hazardous waste" in the federal law and "dangerous waste" in the state laws to identify the slightly more stringent standards and inclusive number and type of wastes regulated by Ecology. Similarly "acutely hazardous waste" in the federal law is approximated by the term "extremely hazardous waste" in the state law. Nonetheless, the generic term "hazardous waste" is commonly used to refer to all hazardous wastes regulated by Ecology in the state.

Three businesses in Adams County, eight in Grant County, and one in Lincoln County are currently listed as regulated dangerous waste generators: Evergreen Implement, Food Services of America, and PureGro Company in Othello; Boeing in Moses Lake; Sundstrand Data Control in Moses Lake; Union Carbide Corporation in Moses Lake; USBR Grand Coulee Project in Grand Coulee; Exxon Co. #75015 in Moses Lake; Farnway Implement Co., Inc., in Quincy; Grant County PUD No. 2 in Ephrata, House Laundry and Dry Cleaning in Ephrata; and St. John Hardware and Implement in Edwall.

## **8. WASTE FACILITIES AND TRANSPORTATION SYSTEM**

There are private firms that have MRW collection routes in Grant, Adams, and Lincoln Counties. One firm services SQGs that generate solvent wastes primarily used in machine parts cleaning operations. The firms come from Spokane and Pasco to retrieve spent solvents and provide new solvent at periodic intervals. The Spokane firm services the Lincoln County region whereas the collection services in Adams and Grant Counties are serviced by the Pasco firm. SQGs must pay for these services.

Used oil is collected by various firms. Used oil is currently taken by a Spokane firm without charge but requires at least 300 gallons to have it picked up. Also oil must not have significant contamination with gasoline and solvents. The price structure varies with the price of virgin crude oil. Depending on market conditions, generators may have to pay or may be paid for used oil collection services.

This waste collection and transportation program serves many local SQGs. It could be enhanced with the existing service providers if more SQGs used the program.

As identified in the survey, some of the SQGs clearly are using inappropriate disposal methods. Over 90% of the construction, wholesale and retail trades appear to dispose of their MRW in the landfills.

There are no facilities available to small commercial generators other than those mentioned above. There are also no facilities available to the public for the handling, treatment or disposal of HHW except for some local businesses that will accept waste oil and vehicle batteries.

## **9. MANAGEMENT PRIORITIES**

At the state and federal level, a waste management hierarchy guides hazardous and MRW management decision making, and provides an evaluation criterion for program considerations of this Plan. Here "management priorities" consist of a set of preferred waste management options (see Table V-4) in descending order of priority. The hierarchy reflects the role of the federal land disposal restrictions (see Subsection 1.a) in driving the need for alternative means of managing, or preferably, by preventing the generation of waste.

### **a. Waste Reduction**

The highest priority is waste reduction: activities that are conducted at the point of generation to avoid generating hazardous wastes, such as using nonhazardous input materials instead of toxic chemicals. The primacy of waste reduction as a waste management method can be viewed from several perspectives:

- From a physical perspective, the generation of hazardous waste represents a waste of resources which may be conserved for alternative use through source reduction techniques.

From an economic perspective, the generation of hazardous waste may represent an inefficiency, the performance of an activity at an unnecessarily high material cost. Conversely, waste management expenses are costs that do not contribute directly to the well-being of a household or the value of a service or product. The reduced generation rates and waste management efforts needed when waste reduction techniques are used also result in lower operating costs. Furthermore, from the region's perspective, waste reduction reduces liabilities associated with MRW collection and disposal.

- From a health perspective, the use of hazardous materials and the generation of hazardous wastes represents an increased risk of exposure to workers, householders, and to the public, with the risk of acute and/or chronic health effects. Waste reduction reduces these risks.
- From an environmental perspective, regardless of the degree of caution that is exercised, the greater the use of hazardous materials and the generation of hazardous wastes, the greater the probability that more of these substances will find their way into the environment. Some of these substances remain hazardous or toxic indefinitely. Waste reduction reduces the threat to environmental resources.

In general, the greater the use of waste reduction techniques, the smaller and less toxic the quantity of wastes that must be managed, and the lower the probability of hazardous waste transportation spills, releases to the air, the soil and to surface and ground waters. The lower risk of releases translates into a lower overall risk of exposure for the general public permanently and in the future.

### **b. Recycling**

Recycling of hazardous wastes, on-site or off-site, is second to source reduction in the hierarchy of preferred waste management methods. Recycling reduces the quantity of waste requiring treatment or destruction while conserving materials, energy and often money. Unlike source reduction, however, recycling does not reduce worker exposure to hazardous materials, and often leaves residues that must be managed as hazardous wastes. Off-site recycling may entail risks to the general public during transportation and handling.

Two forms of recycling are possible: (1) re-use of the hazardous waste in its existing form, and (2) recovery of valuable materials from hazardous wastes by removal of contaminants (such as heavy metals or halogenated organics). The first form of recycling can take place on-site or through waste exchange among companies. A waste exchange takes advantage of the fact that one company's waste may be the raw material for another company. In Spokane, the Pacific Materials Exchange serves as a multi-state network for industrial wastes. A similar exchange has recently begun in Seattle, called the Industrial Materials Exchange or IMEX. For example, many companies have lower specifications for the purity of solvents and can profitably use the solvents that an electronics company would consider waste. A business or farm changing its products may exchange chemicals it no longer needs.

The second form of recycling requires the use of processes such as distillation, chemical precipitation of metals, filtration, sedimentation, or centrifuge. Waste oil is recycled through a combination of these processes. Filtration and distillation are the major methods used for solvent recovery by firms that pick up spent solvents in the region. Metals from spent batteries are recovered by crushing the batteries and separating the compounds.

#### **c. Treatment**

Treatment of hazardous waste is third in the hierarchy of preferred waste management methods. Through treatment, toxic or hazardous properties are reduced or eliminated. There remains, however, the problem of disposal of the residues, and the treatment process may result in emission of pollutants to the air or water. Aqueous treatment is a common type of treatment which removes or detoxifies organic and inorganic contaminants in wastewaters and some other wastes by means of physical, chemical and biological unit processes. Treated wastewaters are usually discharged to municipal sewage treatment plants. Aqueous treatment methods can be used for on-site treatment of contaminated soils: contaminants are in effect rinsed from soil and the contaminated rinse water is treated. The selection of treatment methods depends on the characteristics of the incoming waste stream and on the quality of the desired effluent. Major processes include mixing and storage, batch reactions, steam stripping, solvent extraction, dewatering, biological treatment, carbon adsorption and monitoring for discharge.

#### **d. Incineration**

Incineration or thermal destruction is fourth in the waste management hierarchy. Thermal oxidation methods can destroy a broad range of organic wastes by exposing them to high temperatures in the presence of oxygen. Thermal destruction most often entails incineration, but also includes flameless methods such as wet air oxidation and pyrolytic destruction using infrared radiation. Some inorganic wastes can be treated by heat destruction. For some highly hazardous organic wastes, such as PCBs and dioxins, incineration may prove to be the only practical treatment method.

The major advantage of incineration is that it can be applied to a wide range of waste streams and thus in theory requires siting of a limited number of off-site facilities, although most wastes now incinerated are burned on-site. The major disadvantages are the potential conversion of wastes into air and water pollutants and the consumption of resources, including potentially recyclable wastes and the energy needed to burn wastes. Incinerating high Btu wastes can

generate net energy. Burning chlorinated hydrocarbons to produce industrial-grade acids is another resource-recovery method. The hazardous waste incinerators being proposed for development in Grant and Adams Counties would be the first such facilities in the Northwest if either are built and approved by Ecology.

**e. Stabilization**

Waste stabilization falls below incineration in the hierarchy. Waste stabilization techniques are designed to reduce the mobility of contaminants and their potential for release into the environment. Stabilization employs both physical and chemical techniques to:

- Reduce the solubility of wastes
- Detoxify contaminants
- Decrease the surface area of the wastes
- Improve handling and physical characteristics

No form of stabilization can eliminate hazardous waste; indeed the quantity of waste is increased often by 100% or more, adding to transportation costs and the consumption of landfill volume. Although all stabilized materials should pass standardized leachate tests before placement in landfills, it remains unknown whether wastes so treated will remain forever immobile, or whether the stabilizing media may eventually deteriorate, releasing environmental contaminants.

**f. Landfill**

Landfills are the least desirable disposal option, and, after 1990, disposal of untreated fully regulated quantities of hazardous wastes in a landfill will be prohibited by federal law. Currently, it is legal for some hazardous wastes (and MRW if allowed by local jurisdiction) to be taken to landfills, but there are a number of restrictions as to how the materials may be placed in the landfill. For example, disposal of ignitable or reactive wastes is strictly limited to disposal in nonleaking containers and must be protected from any material or conditions that may cause them to ignite (WAC 173-303-665). Landfill disposal of extremely hazardous waste is prohibited in Washington except at the Hanford facility.

The main concerns with landfill disposal are migration of hazardous substances into the environment (soil, water, air) and exposure of landfill workers to risks associated with hazardous wastes, such as fire, explosion, poisonous gas. Many solid waste landfills across the United States have become Superfund cleanup sites because of the presence of hazardous contaminants.

After the land disposal ban goes into effect, all hazardous wastes will have to be treated, i.e., converted to safer form, such as through stabilization, before landfill disposal.

**g. An Overview of the Waste Management Priorities**

MRW that cannot be eliminated through waste reduction can usually be either recycled or treated. Proven technologies are available for recycling most types of MRW. Aqueous treatment is an alternative for some nonrecyclable forms of MRW. For a few waste types, such

as those containing dioxins or PCBs, incineration, a lower priority option is the safest treatment method available. Table V-5 lists best management options for various MRW types after waste reduction methods have been used. Although these management options are consistent with the waste management hierarchy, the lack of availability or cost of implementation in the region imposes limitations of the use of some of these alternatives. For example, it may not be economic to recycle oil filter casings due to the level of contamination of the steel with oil and filter material.

Neither recycling nor treatment is a complete panacea for MRW. Both techniques generally result in some type of residual solid or hazardous waste. In recycling waste oil, for example, metal contaminants are sometimes removed which must be then handled as a hazardous waste. Nonetheless, recycling and treatment (with the exception of stabilization and solidification) are preferred options because they reduce the volume of material that must be treated as a hazardous waste and allow the recovery of valuable materials.

#### **10. WASTE REDUCTION POTENTIAL AND PLANNING GOAL N GRANT, ADAMS, AND LINCOLN COUNTIES**

For planning purposes, it is reasonable to ask what the potential is for increasing the volume of MRW handled by the preferred management techniques of waste reduction (first priority), recycling (second priority), and treatment (third priority).

MRW management programs in urban areas of Western Washington have diverted approximately 10% of the estimated MRW generated per year through collection programs. In lieu of similar rural data, a 10% goal of waste reduction and diversion is established for the region during the first planning period, through 1996. If there were no change in the management of MRW, there would be approximately 443 tons per year of MRW improperly disposed of in 1996, about 59.7% of the total generated. This would result in a combined waste reduction and diversion from improper waste disposal of 44.3 tons per year by 1996.

Based on the 1996 survey (see Section IV), it was estimated that 29% of moderate-risk waste from households and 81% from SQGs is now managed properly, primarily through recycling. This consisted primarily of waste oil. Most SQGs reported that their waste oil, for example, is picked up by a collection service. Pesticide containers are triple rinsed and the rinse water is applied to the fields by licensed pesticide applicator SQGs in the region. Recycling is second to waste reduction in the management hierarchy.

Even among similar types of businesses, there can be a wide variation in process equipment, in ways of handling materials, and, therefore, in the potential for waste reduction. For example, one automotive repair shop may already use drip pans regularly to retrieve and reuse solvents, whereas another may wash the solvents down the drain. Additionally, most research on waste reduction has focused on large industries, and there is little compiled data on source reduction by SQGs. Therefore, while we know that waste reduction can be achieved through housekeeping and process changes, the actual potential could only be evaluated on a case-by-case basis.

To measure the impact of education in encouraging waste reduction by SQGs or households in the region, a survey at the time of the plan update could be performed. This future survey would provide data on MRW generation for the average household and SQG by business type. Comparing these future results to the survey data contained in this Plan will provide insight into how much waste reduction has occurred.

## **11. BARRIERS TO WASTE REDUCTION AND HIGHER MANAGEMENT PRIORITIES**

The main challenge in achieving waste reduction is in convincing, through education, those business and households that rely on improper or lower priority waste management practices to switch their disposal habits to waste reduction. Although waste reduction and the other management priorities are technically feasible to some extent for most types of MRW, there are a number of barriers to the use of these methods as described in the following text.

### **a. Institutional Barriers**

Waste reduction and consideration of the higher management priorities in businesses require involvement across the range of company personnel. Institutional barriers inherent in corporate hierarchy may be the most important and least obvious hindrance to source reduction by large generators.

For smaller companies, however, institutional questions are of less importance. In smaller businesses, employee responsibilities are frequently not well differentiated. Here, successful waste reduction depends more on finding the time and resources to address the problem. These problems are common to both industrial and agricultural small businesses.

### **b. Financial Barriers**

The largest single barrier for SQGs is lack of information and capital. Ideally SQGs would conduct waste audits and identify and implement waste reduction and other higher management strategies. Although waste reduction is often a long-term money-saver, even a rapid payback period is of relatively little value for a business that does not have capital for initial investments.

### **c. Informational Barriers**

Technical assistance and information for smaller generators may be supplied most successfully through trade and business associations, and for households, from a variety of public outreach and educational programs, with assistance and encouragement from local government.

Technical assistance and/or the flow of information can be a key role of local governments and agencies. Information clearinghouses, conferences and workshops all help to focus attention on the importance of waste reduction. Ecology and some industry associations have developed informative educational waste reduction materials.

SQGs in the region indicated in the survey that there was a lack of information on how to comply with the current laws regarding MRW. This was mentioned second only to costs as factors affecting their ability to comply with hazardous waste laws.

The SQG perception that it is costly to comply with these regulations points to educational needs. In many instances waste reduction techniques can result in reduced operating costs.

#### **d. Regulatory Barriers**

State and federal requirements inadvertently may be barriers to waste reduction. For instance, concern about past problems related to hazardous waste recycling facilities has meant that recycling facilities have to undergo a permitting process similar to that for other hazardous waste facilities. Because recycling is presumed to be a desirable activity that involves less risk to public health and the environment than other forms of waste management, recycling facilities should be easier to permit.

SQGs surveyed in the region listed a lack of consistency in regulations as the third most often mentioned difficulty in complying with hazardous waste laws. Sixty-two percent did not respond to the question of naming specific laws for which compliance was difficult.

Ecology and EPA continue to regulate MRW collection and storage as if it were any other component of the solid waste stream. However, both agencies also encourage local jurisdictions to dispose of collected MRW at fully regulated hazardous waste disposal facilities. Currently, the local Health District will regulate the permitting and operation of any temporary or permanent MRW facilities as a MSW facility. However, Ecology has indicated that it intends to modify the solid waste Minimum Functional Standards to address in some way the MRW stream. Until these issues and regulations have been firmly established, the establishment of permanent facilities will be hindered by regulatory uncertainty.

In conclusion, it is possible to achieve nearly 100% diversion from landfilling or wastewater disposal if all waste reduction, recycling and treatment methods are utilized. However, the realistic potential for waste reduction and diversion will depend on how successfully the institutional, financial, informational, and regulatory barriers can be overcome.

## **12. GRANT, ADAMS, AND LINCOLN COUNTIES LOCAL NEEDS**

Grant, Adams, and Lincoln Counties currently have limited programs for dealing with MRWs. There is one Emergency Services Director in Adams and Grant Counties who is collecting emergency response plans and hazardous materials inventories from local businesses. The information being gathered may include data on MRWs. Only the two education programs for household hazardous wastes put on by the Grant County Extension Office has been held to date. Educational efforts for householders have been expanded by conducting the survey performed for preparation of this Plan.

Based on the findings presented in this section and the preceding sections, the following program and administrative local needs have been identified:

**a. Program Needs**

- (1) Grant, Adams, and Lincoln Counties; some businesses and most households lack a general awareness regarding the problems associated with MRW.
- (2) Some Grant, Adams, and Lincoln Counties' SQGs lack adequate technical expertise and knowledge needed to manage MRW appropriately.
- (3) Most households and some SQGs interviewed indicated the need for a moderate risk waste collection service.
- (4) Training for landfill operators regarding proper battery disposal and alternative landfill battery collection facilities is a need stemming from requirements of the recently amended solid waste management law, Chapter 70.95 RCW, that prohibits landfilling of vehicle batteries.
- (5) Regional businesses and households generate MRW which needs to be properly disposed. Now, much of this MRW ends up at the landfill, in wastewater treatment systems, or is disposed of by illegal burning, dumping or other methods. These practices endanger sanitary workers and the environment. Also, the Guidelines state that the Plan needs to address MRW ordinances for handling and disposal.

**b. Administrative Needs**

- (1) There needs to be clearly assigned responsibility for MRW management in Grant, Adams, and Lincoln Counties to implement and coordinate this Plan.
- (2) There is a need to obtain ongoing funding to implement the selected program and administrative alternatives.
- (3) Ongoing improvement of MRW management efforts will require examination and assessment of program successes and failures.
- (4) A program needs to be established within the region to purchase equipment and share or rent it to the jurisdictions in the region.
- (5) Special insurance requirements for hazardous waste activities need to be identified and periodically reviewed for the cities and counties in the region.

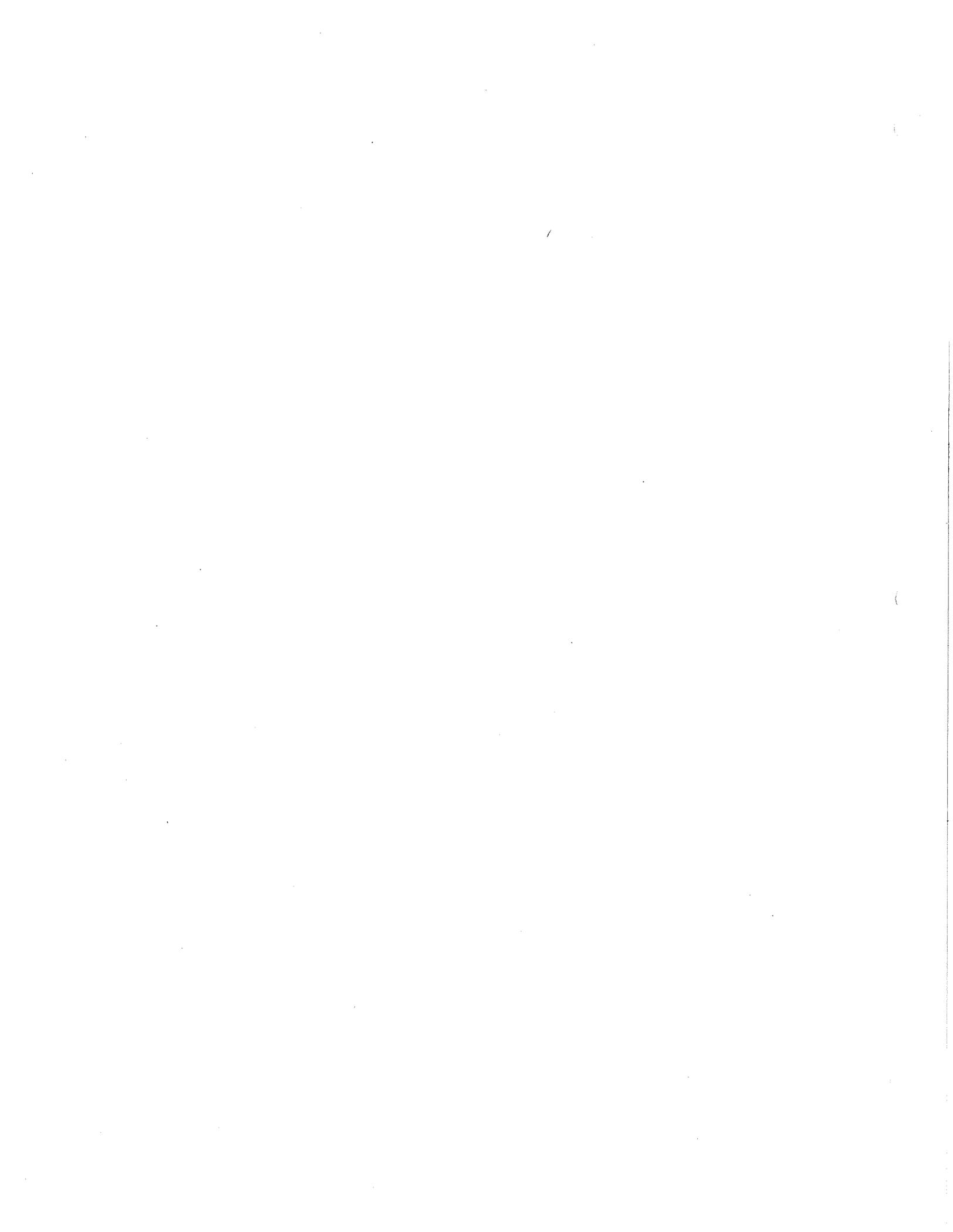


TABLE V-1

FEDERAL LAND DISPOSAL  
RESTRICTION PROGRAMS

Federal Land Disposal Restriction Schedule

Date	Restricted Waste Category
May 8, 1985	Bulk liquids in landfills; even if absorbents have been added.
November 8, 1986	Solvent Waste -- Twenty-seven commonly used organic solvents and solvent mixtures which result from use of solvents with 10% or more of solvent material. The solvents include both spent halogenated, nonhalogenated solvents, and still bottoms from the recovery of these solvents. Lab packs containing these solvents are also subject to the prohibition.
July 8, 1987	"The California List" -- Effective July 8, 1987, categories included in the January 1, 1984 California Land Disposal Restrictions, as well as liquids with halogenated organic compounds in total concentrations greater than 1%. All other wastes identified as "California wastes" postponed to July 8, 1989.
August 8, 1988	First third of all RCRA-listed waste.  EPA decision on continued underground injection of hazardous wastes.  Cleanup wastes subject to restrictions.
November 8, 1988	Specified dioxin-containing wastes.  All solvent wastes which received categorical extensions from November 8, 1986 date.
June 8, 1989	Second third of all RCRA-listed waste.
July 8, 1989	All "California Wastes" not restricted on July 8, 1987.
May 8, 1990	Last third of all RCRA-listed waste.
Within six months of date of new listing	Any hazardous waste newly listed or identified after November 8, 1984.

TABLE V-2

## HAZARDOUS WASTE REGULATIONS

Regulatory Area	Federal Law	State Law	Lead Federal Agency (ies)	Lead State Agency(ies)
Hazardous (Dangerous) Waste (definitions, manifest procedures, TSD permits)	RCRA; HSWA; TSCA	Haz. Waste Mgmt. Act; Haz. Waste Mgmt. Act; Waste Reduction Act; Initiative 97	EPA	Ecology
Moderate Risk Waste		Haz. Waste Mgmt. Act Init. 97, Solid Waste Mgmt. Act		Ecology
Emergency Response and "Right-to-Know"(hazardous materials)	SARA Title III	State is implementing SARA Title III	EPA	Ecology, Emergency Response Commission and Washington State Patrol
Cleanup of Contaminated Sites	CERCLA; SARA; RCRA	Initiative 97, Emergency Mgmt.	EPA	Ecology (investigations and cleanup); Washington State Patrol
Pesticides	FIFRA (use and disposal); RCRA (disposal)	Dangerous Waste Regs, Pesticide Control Act, General Pesticide Use Regulations	EPA	Dept. of Ag., (use, container disposal, collection); Ecology, (waste mgmt.)
Transportation (transport of haz. materials, roadside spills, licenses for haulers)	Fed. Haz. Mat. Transport Act; ACT	State is implementing most RCRA provisions	U.S. Dept. of Transportation	Utilities and Transportation Commission and Washington State Patrol

Regulations Table

TABLE V-3

GRANT, ADAMS AND LINCOLN COUNTIES  
AFFECTED ENVIRONMENTS SITES

Name	Suspected or Confirmed Contaminant	Lead Agency
Burlington Northern (Othello)	Petroleum Products <sup>(1)</sup>	Ecology
CMC Real Estate (Othello)	Petroleum Products <sup>(1)</sup>	Ecology
Soil and Crop (Othello)	Organic Compounds, Metals, and Pesticides <sup>(1)</sup>	Ecology
WWT Batum Facility (Batum)	Petroleum Products and Pesticides <sup>(1)</sup>	Ecology
Ephrata Landfill (Ephrata)	Groundwater Contamination Potential <sup>(2)</sup>	Ecology
Grant Dangerous Waste City (Royal City)	Pesticides Contamination Potential <sup>(2)</sup>	Ecology
Old Larson Air Force Base (Moses Lake)	Non-Chlorinated Solvents <sup>(1)</sup>	Ecology
Washington Army National Guard Shop No. 2 (Ephrata)	Petroleum Products and Non-chlorinated Solvents <sup>(2)</sup>	Ecology

- (1) Confirmed  
(2) Suspected

TABLE V-4

## HAZARDOUS WASTE MANAGEMENT HIERARCHY ORDER OF PRIORITIES

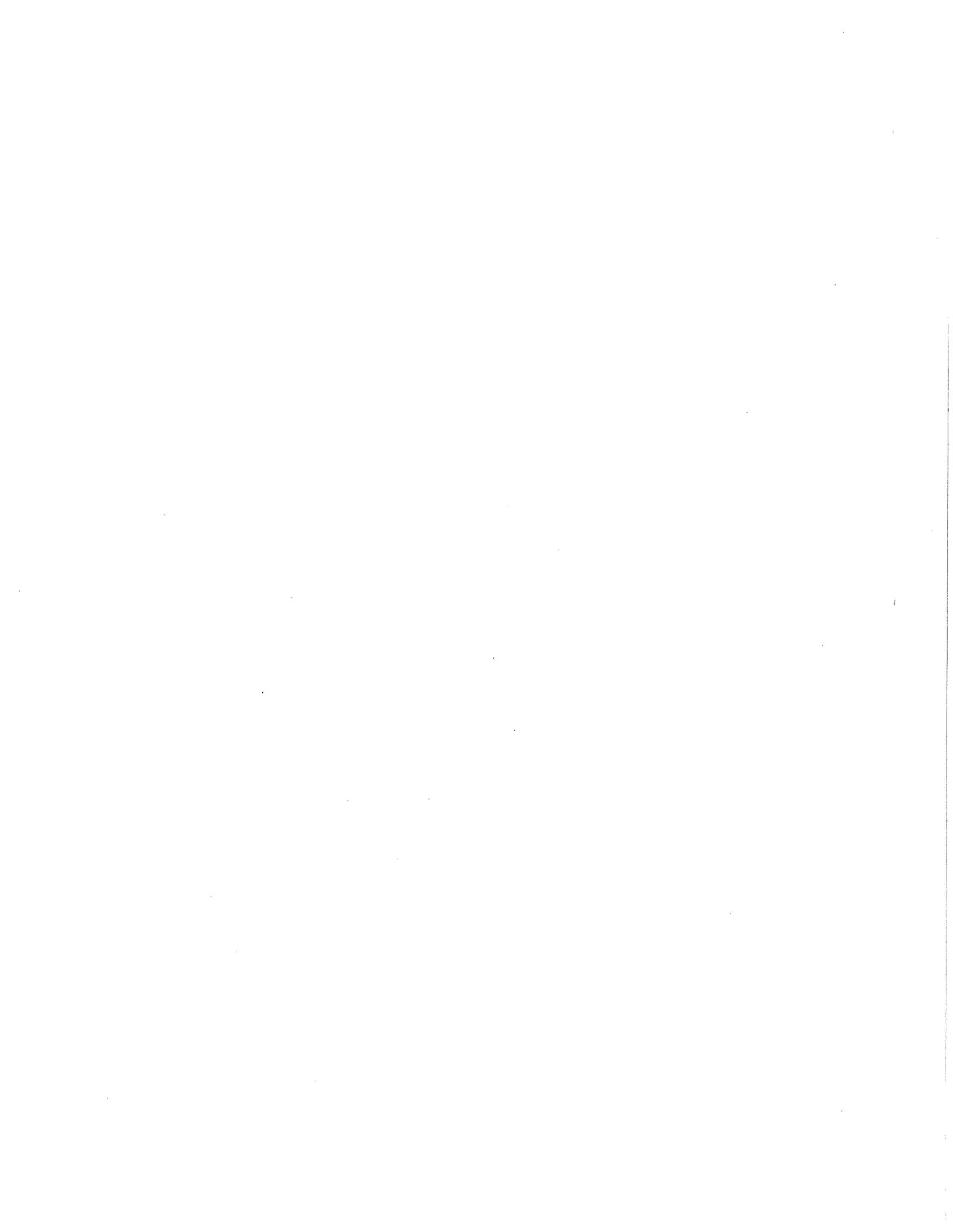
Management Option	Advantages	Disadvantages
Waste Reduction	Typically supported by the whole community; Chemical resource conservation; Avoided waste management costs; Reduce or eliminate risk of human exposure; Reduce or eliminate liability	
Waste Recycling	Typically supported by the whole community; Chemical resource conservation; Reduced costs for new materials; Reduces/eliminates toxic or hazardous properties; Reduces extent of liability;	Residue disposal; Potential air emission; Some degree of siting difficulty
Physical, Chemical, and Biological Treatment	Reduces/eliminates toxic or hazardous properties; Reduces extent of liability	Residue disposal; Potential air emissions; Siting difficulties
Incineration, Thermal Destruction	Handles broad range of wastes; Potential energy recovery; Reduces extent of liability	High expense; Ash disposal; Air emissions; Large economies of scale; Lack of flexibility; High energy input; Need to avoid incineration of wastes that could be recycled or treated; On-site incineration not viable for small generators; Siting difficulties
Solidification/Stabilization Treatment	Intended to isolate residues from environment	Unproven long-term isolation capability; Uncertain effect on long-term liability
Landfill	Low cost (historically, although costs are increasing with increased regulation); Convenient; Intended to isolate residues from environment	Land disposal of regulated untreated wastes banned in 1990; Potential for releases to air, water, soil; Potential for human exposure; Very high long-term cost; High long-term liability; Siting difficulties

**TABLE V-5**  
**BEST MANAGEMENT OPTIONS**  
**AFTER WASTE REDUCTION**

<b>Waste Type</b>	<b>Best Available Management Option</b>
Waste oil	Recycling
Solvents	Recycling
Antifreeze	Recycling
Dry cleaning solution	Recycling
Strong acids/bases	Aqueous treatment - neutralization
Used oil filters	Recycling of oil, steel
Other	Variable
Photographic wastes	Recovery of silver, recycling of some other chemicals
Used auto batteries	Recycling of core and casing; aqueous treatment of acid
Ink wastes	Incineration
Oil rags	Recycling
Ignitable wastes	Variable
Empty hazardous material containers <sup>(1)</sup>	Recycling
Paint wastes	Recycling or incineration
Pesticide waste	Aqueous treatment - organic or incineration
Wastes with formaldehyde	Recycling

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<sup>(1)</sup>Empty containers are considered hazardous if they contain hazardous residues.



**SECTION VI**  
**OBJECTIVES AND ALTERNATIVES**  
**TO MEET NEEDS**

**1. INTRODUCTION**

The ultimate goal of this Plan is to significantly reduce disposal of targeted moderate risk waste in Grant, Adams, and Lincoln Counties' landfills and wastewater systems. This section translates general planning goals, as defined in Section I, into specific objectives and to identifies alternatives for achieving those objectives. These objectives respond directly to problems and needs identified in Sections IV and V. Some alternative programs have the potential to satisfy more than one objective and therefore are listed under several objectives. For example, a household hazardous waste education program can be used to both increase public awareness and discourage unsafe disposal.

Significantly reducing the release of moderate risk waste at the landfill or to the local wastewater treatment systems is a long-term goal. Within the shorter five-year time frame of this initial plan, one objective is to make program reevaluation and revision an ongoing part of implementation. The purpose of reevaluation is to assess how successful the programs have been and to look at what could be done to raise MRW generator participation toward 100%.

**2. IDENTIFIED NEEDS, OBJECTIVES AND ALTERNATIVES**

To address the goals and needs discussed in previous sections, program and administrative objectives have been developed. These objectives range from increasing generator awareness about MRW and providing collection services, to enactment and enforcement of new ordinances. The alternatives listed under each objective are described in detail in Subsection 3 and evaluated for the implementation in the region in Section VII. Following from the format of needs identified in Section V, the objectives are developed separately for the program objectives and then the administrative objectives.

## PROGRAM OBJECTIVES

### PROGRAM OBJECTIVE 1

Increase awareness among the region's businesses and households regarding MRW.

**Identified Need:** SQGs and households lack a general awareness regarding the problems associated with MRW.

- Alternatives:**
1. Establish a household hazardous waste education program.
  2. Encourage the Washington State Legislature to establish a labeling law mandating that information on safe disposal be included on hazardous products.
  3. Establish an SQG education program.

### PROGRAM OBJECTIVE 2

Provide SQGs with technical information and assistance on moderate risk waste management with special emphasis on waste reduction.

**Identified Need:** Many SQGs lack adequate technical expertise and knowledge needed to manage MRW appropriately.

- Alternatives:**
1. Establish an SQG education program.
  2. Establish an on-site hazardous waste assistance service.

### PROGRAM OBJECTIVE 3

Provide means for appropriate collection and disposal of MRW.

**Identified Need:** Most households and some SQGs interviewed indicated the need for a moderate risk waste collection service.

- Alternatives:**
1. Set up a local household hazardous waste (drop-off) collection day.
  2. Establish a mobile (drop-off) collection center for household hazardous waste.

3. Establish a permanent collection facility for household hazardous waste possibly in conjunction with the existing solid waste facilities.
4. Institute curbside pick-up of certain household hazardous waste.
5. Establish one or more used oil collection facilities.
6. Develop regional solutions in conjunction with other counties.
7. Establish a SQG permanent collection center.

#### **PROGRAM OBJECTIVE 4**

Provide educational training to the different landfill operations personnel, both public and private, to ensure that automotive batteries are not landfilled. Provide collection areas for batteries at all transfer stations and landfill.

**Identified Need:** Training for landfill operators regarding proper battery disposal and battery collection facilities is a need stemming from requirements of the recently amended solid waste management law, Chapter 70.95 RCW, that bans vehicle batteries from landfill disposal.

- Alternatives:**
1. Present landfill and transfer station personnel with an overview of the new law, what their new responsibilities are and how to handle/divert automotive batteries from the landfill. This education could be combined with staff training for a Waste Acceptance Control Program.
  2. Identify collection areas for vehicle batteries at all the transfer stations and landfills in Adams and Lincoln Counties.

#### **PROGRAM OBJECTIVE 5**

Discourage disposal of MRW in landfills and Publicly Owned Treatment Works (POTWs) and by illegal methods.

**Identified Need:** Regional businesses and households generate MRW which needs to be properly disposed. Now, much of this MRW ends up at the landfill, in wastewater treatment systems, or is disposed of by illegal burning, dumping or other methods. These practices endanger sanitary workers and the environment. Also, the Guidelines state that the Plan needs to address MRW ordinances for handling and disposal.

**Alternatives:**

1. Enact city ordinances and/or regulation for each of the Health Districts prohibiting disposal of MRW at the landfills or in the wastewater treatment systems.
2. Establish a waste acceptance control program at the landfills.
3. Use an education program to promote available alternatives to disposal in landfills and POTWs. This would include training for public and private sector employees and landfill operators on proper battery disposal and the newly enacted battery deposit program.
4. Develop collection programs as alternatives to improper disposal.
5. Establish an SQG inspection/enforcement program.
6. Use education programs to increase awareness of existing laws.
7. Increase enforcement of existing solid waste laws and local regulations for households and businesses.
8. Adopt/implement a waste acceptance control ordinance/program.
9. Update existing POTWs disposal ordinances or regulations.
10. Revise existing City and County solid waste ordinances.
11. Conduct one or more solid waste sorting studies to determine the content of the MRW in the solid waste stream.

## ADMINISTRATIVE OBJECTIVES

### ADMINISTRATIVE OBJECTIVE 1

Establish responsibility for coordination and implementation of this Plan at the local level.

**Identified Need:** There needs to be clearly assigned responsibility for MRW management in Grant, Adams, and Lincoln counties to implement and coordinate this plan.

- Alternatives:**
1. Establish a standing advisory committee to coordinate implementation and future updates of this plan.
  2. Each County and City implements plan independently.
  3. A combined regional and local implementation as is appropriate.

### ADMINISTRATIVE OBJECTIVE 2

Develop ongoing sources of funds, program and administrative support to adequately implement the Plan recommendations.

**Identified Need:** There is a need to obtain ongoing funding to implement the selected program and administrative alternatives.

- Alternatives:**
1. Use funds from the three Counties and incorporated areas from solid waste and sewer fees.
  2. Use Ecology Grant Funds.
  3. A combination of these methods.

### ADMINISTRATIVE OBJECTIVE 3

Refine and improve MRW programs through periodic reevaluation.

**Identified Need:** Ongoing improvement of MRW management efforts will require examination and assessment of program successes and failures.

- Alternatives:**
1. Administer further surveys of households and follow-up surveys of businesses.

2. Conduct solid waste sorting studies to determine MRW content of refuse.
3. Evaluate programs in the region on yearly basis.
4. Begin work on local Moderate Risk Hazardous Waste Management Plan 4 years after adoption of this initial plan.

#### **ADMINISTRATIVE OBJECTIVE 4**

Establish responsibility for purchasing equipment specifically for HW management activities and to make the equipment available to cities and counties in the region.

**Identified Need:** A program needs to be established within the region to purchase equipment and share or rent it to the jurisdictions in the region.

- Alternatives:**
1. Pool funds, personnel and existing resources from the three Counties to maintain existing equipment.
  2. Use Ecology grant funds and funds from the Local Toxics Control Account to purchase new equipment for the regional MRW plan implementation.
  3. A combination of both methods.

#### **ADMINISTRATIVE OBJECTIVE 5**

Identify what special insurance requirements are necessary for implementing the different program options for the three Counties.

**Identified Need:** Special insurance requirements for hazardous waste activities need to be identified and periodically reviewed for the cities and counties in the region.

- Alternatives:**
1. Identify which program options will be selected from this plan. Contact the different insurance carriers for each County and City to determine how the insurance requirements will be met.

### **3. PROGRAM DESCRIPTIONS**

In Subsection 2, various alternatives are mentioned. The purpose of this section is to provide a more detailed description and evaluation of these alternatives, to rank and to select the best alternatives. The alternatives are divided into three categories:

- Education/Technical Assistance
- Collection
- Compliance Tracking and Enforcement

For each program, the evaluation includes: (1) a section on how the program relates to the hazardous waste priorities described in Section V; (2) a summary of the program's advantages and disadvantages; (3) an assessment of its feasibility and likelihood of success, and discussion of cost. All costs identified are in 1990 dollars and do not reflect any potential increases due to inflation.

It is assumed that any land required to implement programs described in the following text is made available at no cost. For most collection events and collection facilities in the State the properties required for these activities has been provided by local businesses or local public agencies at no cost.

## A. EDUCATION AND TECHNICAL ASSISTANCE

**Program:** HOUSEHOLD HAZARDOUS WASTE EDUCATION

**Description:** Public outreach, as discussed in Section V, is a form of source reduction and thus works hand-in-hand with collection programs. A comprehensive public outreach program involves use of a wide range of media to educate householders about hazardous materials they may use in their homes, safe substitutes, and improper and proper disposal methods. Media can include utility bill inserts, flyers distributed to households (particularly to advertise a collection program) or distributed through retail stores selling hazardous products, stickers applied to trash cans, newspaper articles, County fair information booths, radio and television shows, public service announcements, a county moderate risk hazardous waste "hotline," school curriculum, community and school presentations, and public library materials.

**Relationship to Management Priorities:** Most households in Grant, Adams, and Lincoln Counties currently use disposal methods that pose risks to human health and the environment, or even illegal disposal methods such as burning. Because it leads to reduced generation of hazardous wastes (through careful purchases and safer substitutes), education is a form of waste reduction, the highest waste management priority. It can also lead households to recycle or use other higher management priorities. An effective program must be particularly directed at those least likely to be informed about hazardous materials and wastes, such as those with lesser education.

**Advantages:** This program reduces health risks to households through better home management of hazardous materials and reduces risks to sanitation workers through improved disposal practices. HHW education may reduce MRW collection program costs through reduced generation of MRW for disposal (e.g., allowing latex paint to dry out, then disposing as solid waste; using non-hazardous substitutes for hazardous materials; purchasing smaller amounts and using them completely.) HHW education may also reduce risks and improve MRW management in the work place and elsewhere through greater awareness. The program could be implemented by using existing teachers, staff of various local governments, and businesses.

**Disadvantages:** This program has few disadvantages. The educational program must teach without causing over-reaction or confusion. To be most effective, a sustained, long-term effort is needed.

**Feasibility/Likelihood of Success:** Successful educational programs have been carried out by many communities throughout the United States. Grant, Adams, and Lincoln Counties can take advantage of a wealth of education materials, flyers, and school curricula already prepared by other communities, industry, and governmental agencies.

The impact of an organized program in the region will depend in large part on long-term continuity of effort, as the goal is a permanent change in householders' abilities to recognize and manage hazardous materials they use in their homes. Educational programs must be linked to the availability of product substitutes and convenient disposal options for greatest effectiveness. The WSU Home Economics Extension Agent in each County is currently assisting in this program area if requested to do so.

**Costs:**

Costs depend on how much effort the Counties decide to put into education. Development of a comprehensive educational program for Grant, Adams, and Lincoln Counties involve roughly one full-time equivalent (FTE). The Counties can reduce costs for educational materials by using materials already developed by other communities and Ecology, and by making extensive use of free educational services such as newspaper articles and public services announcements. Utility bill inserts may be provided free of charge or at low cost by the utility; printing and distribution of flyers might be done on a donated basis by local printers or other commercial enterprises. This program could be integrated with existing or new outreach programs for SQGs and/or farmers to further reduce costs.

One person should be assigned to be a part-time or full-time coordinator. This coordinator would contact/recruit and coordinate schools, utilities, businesses and agencies in the implementation of HHW education in the region. Brochures and press releases would be developed and/or adapted from other sources and a public outreach program tailored to Grant, Adams, and Lincoln Counties residents. The costs for this program may be as follows:

Year One Start-up Costs - 1 FTE	.....	\$36,000
Educational Materials	.....	\$ 1,500 - 3,000
 Total Start-up	 .....	 \$37,500 - 39,000
 Continuing Costs - 1 FTE	 .....	 \$36,000
Educational Materials	.....	\$ 1,500 - 3,000
 Continuing Costs	 .....	 \$37,500 - 39,000

Part of this FTE could potentially be accounted for by reallocating WSU Cooperative Extension (home economics), planners, public works, or health personnel to this effort. Ecology may also be able to provide grant funding for local personnel to coordinate/implement this type of program.

**Program:** SQG EDUCATION PROGRAM

**Description:** A more comprehensive program to inform SQGs about proper handling, storage and disposal of hazardous waste, current regulations, waste reduction, and waste recycling. Program administrators would gather or develop their own written materials on hazardous waste management that could then be shared with SQGs through a variety of methods: direct mail, a telephone hotline, a resource library (possibly a local library), trade associations, retailers, the media, or waste handling companies. The program could be coordinated with state programs described in Section V. In addition, seminars or workshops could be offered. Attention would be focused primarily on generators of the targeted wastes.

**Relationship to Management Priorities:** An outreach program on the local level would promote increased compliance with regulations and with the management priorities. Educational material would emphasize the highest priority alternatives: waste reduction and recycling.

**Advantages:** Literature and training materials on hazardous waste are readily available from a number of sources including: Ecology, EPA, nonprofit organizations, and trade associations. These can reach a major portion of SQGs. There will be Ecology funding available for SQG education and technical assistance beginning in 1990 as the result of new legislation which applies a \$35 per year fee on all existing and potential generators of hazardous wastes.

**Disadvantages:** Not as effective as on-site visits or waste reduction audits. Future funding of state programs described in Section V is uncertain.

**Feasibility/Likelihood of Success:** Feasibility would depend on the ambitiousness of the program. A basic program involving distribution of literature to generators through direct mail or retailers would be easier to implement, but potentially less effective than a comprehensive program involving hotlines, seminars and workshops. Many cities and counties have some type of SQG education program. The Seattle/King County Department of Public Health, for example, has prepared and distributed a booklet entitled Hazardous Waste Disposal: A Guide for Business which has been adapted for use in the Spokane area by the Spokane Solid Waste Project. A modest program would be feasible for Grant, Adams, and Lincoln Counties given the availability of ongoing dedicated funds for this purpose generated through the \$35 per year fee on existing or potential hazardous waste generators. Grant funds from these fees are available from Ecology on a matching basis.

**Costs:****Low-end Scenario**

For a low-cost program requiring a program coordinator who would rely primarily on literature and materials that are already developed and available:

- Program coordinator to promote education, adapt newsletters, brochures and other materials - 1/8 to 1/4 FTE - \$4,500 to \$9,000/year.
- Program materials - \$500 to \$1,000/year.
- Total cost - \$5,000 to \$10,000/year.

**High-end Scenario**

For a more extensive program region-specific brochures or newsletters are developed, seminars are offered, a hotline is established, and an extensive resource library is assembled:

- Program coordinator - development of newsletter, brochures - 1/4 to 1/2 FTE - \$9,000 to \$18,000/year.
- Seminars/workshops - 2 @ \$1,000 per seminar - \$2,000/year.
- Telephone Hotline - 0.10 - FTE (person would have other responsibilities in addition to hotline) - \$3,600/year.
- Resource Library - Materials acquisition (books, magazines, etc.) - \$3,000/year (\$1,500/year after year one).
- Total Cost - \$18,000 to \$26,600 in year one, \$16,100 to \$25,100/year after first year.

**Program:****ON-SITE HAZARDOUS WASTE ASSISTANCE SERVICE****Description:**

A hazardous waste assistance coordinator would visit the SQG's facility, walk through the business, provide appropriate brochures, and help establish the best waste management practices specific to that business. This could be a consultation program only or could be linked to a SQG inspection/enforcement program. An emphasis would be placed on waste reduction and recycling.

**Relationship to Management Priorities:**

The assistance service would be used to help businesses implement waste reduction and recycling, the two highest management priorities.

**Advantages:** Assistance is tailored to each individual business. Face-to-face contact with the assistance coordinator is more personal and persuasive than reading a brochure. This coordinator can identify problems or opportunities businesses had not considered. They can point out the liabilities of not complying with regulations such as bank financing which is contingent on uncontaminated property. Technical assistance program portions (non-enforcement) of such a program would probably be grant eligible for funding from the \$35/year hazardous waste generator business fee established by the state.

**Disadvantages:** If linked to an enforcement program, businesses may withhold information about how they handle wastes. On-site assistance service requires more time and staffing than using mail-outs or fliers. A specially trained coordinator would be needed.

**Feasibility/  
Likelihood  
of Success:** King County has implemented a successful hazardous waste reduction program that includes on-site waste audits for major generators. In that program, many generators have found ways to avoid land disposal for their hazardous wastes, either by eliminating waste generation or by recycling. Although the inspectors have enforcement authority it is rarely needed.

**Costs:**

- **Assistance Evaluations**  
4-8 hours per evaluation, 40 per year - \$3,000 to \$6,000/year.
- **Staff training**  
1-2 single-week training classes, - \$1,000 to \$2,000/year.
- **Total - \$4,000 to \$8,000/year.**

## B. COLLECTION

**Program:** HOUSEHOLD HAZARDOUS WASTE COLLECTION DAYS

**Description:** A collection center is set up at one or more locations (e.g. school or business parking lots, County shops) for a short period of time (usually one or two days). Residents are encouraged to bring their unused hazardous products to the center on the collection days. The center is staffed by personnel who collect, sort, and pack the household hazardous waste. Wastes collected are then transported by a licensed hauler to a TSD facility for recycling, treatment, or disposal. Collection days are widely advertised in advance, often as part of a general education/awareness program. Currently, households in the region in general have no alternative but to throw hazardous products in the community trash, pour them down the sewer, store them indefinitely, or use other unsafe disposal methods.

**Relationship to Management Priorities:** Household hazardous waste collection days give residents an opportunity to take these wastes to an appropriate facility. Once collected, many hazardous wastes can be recycled or treated, which is preferable to landfill disposal.

**Advantages:** A permanent structure is not required and volunteer staff can be used for some aspects of the programs. One-time programs can serve as pilot projects for permanent facilities. The collection days can be set up in different places at different times to encourage greater participation. Many communities have carried out collection days successfully. The greatest advantage may be the collection program's educational value; the program can serve as an "attention getter" to educate the public and promote greater awareness of the risks of household hazardous wastes.

**Disadvantages:** Volunteer collection day personnel may not be properly trained and may risk exposure to hazardous material. (Some programs limit volunteers to traffic control and similar activities, and use trained hazardous waste workers to handle materials.) Collection days are not an ongoing disposal option nor a long-term solution. Collection days may be sufficient to handle only a small portion of the household hazardous waste in the region. (Roughly 2% of waste generated annually is collected per typical collection event.) Data collected in Marin County, California on hazardous wastes mixed with household refuse indicated no decrease in improper disposal following a weekend collection program, possibly because the program increased awareness about the dangers of storing these materials, without providing an ongoing mode of safe disposal. Finally, many programs run into unexpected complications, due to lack of experience.

The most common problem is participation in excess of what was expected, resulting in unbudgeted costs. Participation in Washington rural counties is typically about 1% of all households per event but has been as high as 5.6%

in San Juan County. There is some evidence that indicates that as with solid waste recycling the more convenient the collection event is the higher levels of participation may be expected. This may translate into multiple small sites as opposed to one large site for HHW collection in rural areas.

**Feasibility/  
Likelihood  
of Success:**

Approximately 2,000 collection events have taken place in the United States between 1981 and 1989. Grant, Adams, and Lincoln Counties can draw on the experience of many other communities and a large body of published material on collection programs, in order to design a successful collection event. To be most effective in the region the event would include sites in as many of the larger population centers as possible. None the less, it may be prudent to keep initial events to a modest scale and limit the number of sites until local experience is gained.

**Costs:**

The greatest cost factor is drum disposal. Participation rates for collection programs usually average about one percent of households, and each household typically delivers enough waste to fill 40% of a steel drum. Drum disposal costs typically average from \$200 to \$450 per drum, depending on the type of wastes collected, amount of volunteer or donated labor and materials, and other unique factors. Costs per capita for collection events in rural Washington have ranged from \$0.30 to over \$4.00. The following range of costs are estimated for the east and west sides of the region assuming costs to be more per capita to service lower population densities prevalent in the eastern side of the region. Table VI-1 summarizes the costs for this program through 1996.

**Program:**

**MOBILE COLLECTION CENTER FOR HHW**

**Description:**

This program alternative usually consists of a specially designed collection facility, mounted on a truck trailer placed temporarily on a prepared concrete slab, that is used to collect moderate risk wastes from one community for one or more parts of a day depending on the population served. The facility then goes to another location in a manner analogous to bookmobiles. The mobile collection center is staffed by trained personnel who screen, sort, and pack wastes, which are then stored in designated areas within the facility. Personnel can often be provided by the company that sells or leases the collection center.

**Advantages:**

A mobile facility can move from community to community, making collection more accessible to households. A mobile facility can be shared between several communities or counties to reduce costs. Okanogan, Stevens, Chelan and Douglas Counties have indicated an interest during their local hazardous waste planning process in the potential to cooperate in the development of a North-Central and Eastern Washington mobile collection facility.

Mobile collection in King and Klickitat Counties have been successful in collecting relatively large quantities of HHW per population served. This may be due to the relative convenience of a mobile facility to the householders.

**Disadvantages:** There are relatively few examples in Washington, one in Klickitat, one in King County, Washington, of this type of program from which to get information. The increased waste volumes collected per capita also translates into higher costs per capita.

Unlike a permanent collection center, this program requires advance publicity to notify the public of its schedule. It also requires more effort from households than curbside pick-up although potentially less effort than a collection event at only one centralized location.

**Feasibility/  
Likelihood  
of Success:**

The mobile alternative may be viable for a regional program among rural cities and especially in cooperation with nearby Counties. The only two operating examples of this program alternative in the State are from King and Klickitat counties. The King County facility has been operating at its projected budget except for a higher than expected participation rate and, therefore, somewhat higher disposal costs. The Klickitat County program has demonstrated that, even in low density population areas, collection of HHW in a rural county can be relatively large when measured by quantities of waste collected per capita. For instance, the drums collected per capita in Klickitat County exceeded every urban collection event in Washington reported to Ecology. The results in Grant, Adams, and Lincoln Counties for a similar program may not be the same as this one existing rural mobile collection event in Klickitat County. The Klickitat program cost approximately \$1.76 per capita or \$8,000 per day of operation.

Ecology has been sponsoring MRW Information Roundtables, the most recent one was August 9, 1990 in Wenatchee. A Northeastern Mobile System was discussed to meet the needs for Chelan, Douglas, Stevens, Ferry, Pend Oreille, Okanogan, Grant, Adams and Lincoln Counties. As an example, a schedule was presented, assuming all the counties would participate in a mobile collection service. The amount of time in each City/County was estimated based on population and assumed collection of HHW in each County twice a year.

**Costs:** **Local Only Approach**

The costs of the mobile unit and operations are probably too high for the region's population to support by itself. The King County mobile unit cost approximately \$110,000 and serves a population of approximately 1,424,000 residents. The capital costs for the Klickitat County mobile collection unit have not yet been determined but would be expected to be less than the King County mobile unit. Operational costs are expected to be the same whether

the mobile unit is owned by Grant, Adams and Lincoln Counties or a waste mobile shared with other counties.

### **Regional Approach**

King County has initiated a year-round mobile collection facility to collect HHW. The total costs have been expected to be \$8,000 per day of collection. The King County program collected many more drums than the Klickitat program per day but has more efficient drum packing and closer proximity to recycling and treatment facilities than the Klickitat County program. The \$8,000 per day total cost for these two very different mobile collection programs may be coincidental due to a unique combination of circumstances in these two specific instances.

A similar mobile collection program would require coordination among other counties and cities to economically distribute the significant capital and operating costs. If the region chose to implement this approach and used the facility for one or two weekends per year, the capital cost may be approximately \$36,000 per year according to initial estimate made by Ecology. Table VI-2 identifies the initial and annual costs for this program as well as the assumptions that were made in developing the estimate.

**Program:** PERMANENT COLLECTION FACILITY FOR HHW

**Description:** A building designed for storage of hazardous materials, including separation of incompatible materials, safety equipment, and fire protection; staffed on a part- to full-time basis by one or more workers trained to identify general waste types, properly pack and store them for later collection by a licensed hauler. In Grant, Adams, and Lincoln Counties such a facility would most likely be in operation each Friday from 12-8 p.m. and Saturday from 9-5 p.m. The days and hours of operation would be adjusted to meet the increasing demand for service.

There are four fixed storage facilities in the state currently in operation: City of Seattle at the South Transfer Station, Thurston County at the landfill, Whatcom County on County-owned property and Port of Seattle. All four facilities are looking at increasing the hours of operation to better serve the public. Seattle's facility operates three days per week, Thurston County on Saturdays and both the Port of Seattle and Whatcom County's are on an appointment basis during normal business hours.

The Counties and cities could establish one or more collection sites, increasing the convenience of moderate risk waste disposal. Fire stations, solid waste management facilities, and other paved public properties are examples of appropriate places to establish collection centers. The Region may have sites where hazardous materials are already being handled that may

be adapted to accept household hazardous wastes. Like other collection programs, a permanent facility may be operated by the three Counties, in conjunction with one or more municipalities or in partnership with a private-sector entity. Pre-fabricated structures designed for small-scale hazardous waste storage and collection are manufactured by several companies.

**Relationship to Management Priorities:**

Provides households an alternative to landfill and sewer disposal. Once collected and sorted, several types of MRW can be more easily recycled (batteries, oil, paint); recycling is the second waste management priority. Waste reduction, the first management priority, could also be encouraged through the distribution of educational materials to people using the facility.

**Advantages:**

This program establishes a measured effort at a permanent facility to provide long-term disposal for MRW. People can dispose of their wastes throughout the year rather than waiting for a collection day or mobile center. Permanent centers would have part- or full-time staff trained to deal with various types of hazardous wastes. This facility might be able to be set up in coordination with similar sites in neighboring counties to take advantage of a regional HW collection/disposal service. The collection of wastes would be smoothed over time and more predictable than for collection events.

Like with the three ongoing operations in Washington, the facility or facilities could have limited hours of operation to keep the costs low. Once the public become better educated and aware of the facility or facilities, the hours of operation can be extended to better suit the public.

**Disadvantages:**

Access will be a problem for outlying areas. While it would be cost effective to have one facility for strategically placed in the region and adequately sized, it would increase the distance people would have to travel to the facility. The distance most people are willing to travel is usually between 10 to 20 miles with the greater distances more common for rural areas. Where one facility may not be able to serve the entire region, use of two of the four transfer stations for collection of MRW would be difficult logistically and expensive.

**Feasibility/Likelihood of Success:**

Because the region is large, more than one facility is required to effectively serve the entire area. At least one facility in the east and one in the west would be required, but with local funding, only one facility is likely to be built.

Three permanent moderate risk hazardous waste collection facilities have been established in Washington State. The setup and operation of the Port of Seattle, Whatcom County or Thurston County operations are examples of the type of operations that could be adapted for the Grant, Adams, and Lincoln Counties. Ideally, the facility should accept a broad range of different HHW. The cost for proper storage increases with the increasing number of types of wastes accepted.

If the facility would operate on local funds, only specific types of waste would be accepted. These should include only MRWs that can be readily recycled and/or is a targeted MRW such as used oil, oil-based paint, solvents, vehicle batteries, and most household pesticides and cleaners.

**Costs:**

Although these collection centers have been developed primarily in cities, some of these have operated on very small budgets that are within the means of City and County budgets. In Whatcom County, with a population of approximately 123,000, a program accepts HHW on an appointment basis only at a permanent site. The program disposed of eight drums in 1988 with a disposal cost of \$1,500 and 12 drums in 1989. Other ongoing program expenses include about 25% of the time of a full-time employee. The Whatcom County program was initially a modified metal (10-foot by 12-foot) storage shed on a bermed concrete pad, but is now in a permanent structure (a modified metal shipping container). About 1% of households in the service area currently participate. The estimated budget for 1990 is \$11,000, \$2,000 for labor and \$9,000 for materials and disposal costs.

The Port of Seattle has modified a small (6-foot by 12-foot) shipping container for about \$2,000 to serve as a MRW collection point for the users of their marina and wharf. Existing staff accept wastes from commercial boats and pleasure craft on an on-call basis.

The Thurston County facility accepts HHW on Saturdays at their "HazoHouse" at the Hawks Prairie Landfill. This facility is located to serve the major population center of the County around the Olympia area. In 1988 it received about 2,500 gallons of HHW at an operating cost of \$15,000. Of the \$15,000, \$8,000 is for labor, with the remaining cost for disposal and supplies. About 400 participants paid \$2 each in 1988 for each use of the HazoHouse. The County's population is approximately 153,000.

Based on these program descriptions and experience, the cost for a series of collection facilities is as follows in Table VI-3.

As experience with handling and alternative recycling and waste diversion is gained, the costs may not actually increase as rapidly as the increased waste volumes accepted. Also a regional approach to the collection and disposal from these types of facilities may save 10% in disposal costs or approximately 5% or more in operating costs in the later years.

**Program:** SQG PERMANENT COLLECTION CENTER

**Description:** A permanent collection facility in each County would be set up in a convenient location where SQGs could bring their moderate risk wastes. SQGs would complete the appropriate paperwork and waste profiling prior to bringing the wastes to the collection center. Fire stations, solid waste management facilities, and other paved city or County properties are examples of appropriate places to establish collection centers. The region may have sites where hazardous materials are already being handled that may be adapted to accept household hazardous wastes. Like other collection programs, the permanent facilities may be operated by the three Counties, in conjunction with one or more municipalities or in partnership with a private-sector entity. Each collection facility would be equipped with all appropriate safety features such as spill containments, blowout walls, signing, first aid supplies and fire suppression equipment.

**Relationship to Waste Management Priorities:** The program provides SQGs an alternative to landfill and sewer disposal and would emphasize higher management alternatives for the collected wastes such as recycling and treatment.

**Advantages:** A collection facility in each County would augment private sector disposal services with assistance from government. Environmental health benefits increase as wastes are properly managed.

**Disadvantages:** A mechanism must be instituted to ensure that only wastes from small quantity generators are accepted. Businesses bringing more than 220 of hazardous waste or 2.2 pounds of extremely hazardous waste would be refused and educational material provided to them. Potential liability for the wastes would have to be assessed, as the generator generally assumes cradle-to-grave responsibilities for the wastes. Companies transporting their own wastes to the facility site will need to comply with DOT regulations on the transport of these wastes. These types of government subsidies of private firms may not be an acceptable or desirable practice. It may also be difficult to determine if SQG's using the facility are actually generating waste in quantities that would classify them as fully regulated non-SQG generators.

Currently, Whatcom County is the only county in Washington that accepts MRW from SQG. Because the County operates on an appointment only basis, they can screen the calls to determine if the wastes that will be delivered to the facility is from an business or household. Depending on the type and quantity of waste the SQG will bring to the facility, such as used oil, the Whatcom County personnel may ask the business to recycle it at one of the local recycling centers that accepts used oil. This redirection of the waste help keep the storage at the facility available for those hazardous wastes that are not currently being recycled.

**Feasibility/  
Likelihood  
of Success:**

The quantity of MRW generated by SQGs in the region (and not already being managed properly) is unlikely to attract private sector interest in developing a permanent collection station instead of local agencies. SQGs already deterred by high costs of disposal may not be willing to pay user fees, and the general public may oppose subsidization of collection and disposal costs for businesses. It may be possible to combine this type of facility with an HHW permanent collection facility but it has not yet been attempted in Washington. A Seattle TSD now offers this service once a week as a drop-off service and charges \$8 per gallon of waste. This TSD facility indicated that SQG waste must be accounted for as a hazardous waste separately from HHW.

Grant, Adams, and Lincoln Counties do not have the resources to provide a subsidized SQG collection program. Based on the survey results, HHW is more likely to be disposed of improperly than SQG MRW. Consequently, SQG programs are less likely to have as great an impact on HHW programs in the region.

**Costs:**

Because of the lack of available experience with these types of facilities it is difficult to estimate costs for a facility in Grant, Adams, and Lincoln Counties. From a one-time collection event for SQGs in Jefferson County implemented in concert with an HHW collection event, the SQG waste services were about 20% higher than for the HHW services. The cost for a SQG permanent facility may be approximated by applying this factor to the HHW permanent collection facility previously mentioned.

**Program:**

**CURBSIDE PICKUP OF HOUSEHOLD HAZARDOUS WASTES**

**Description:**

Householders set out their moderate risk waste at curbside on specially designated days one or more times per year, or the program is carried out in conjunction with garbage pick-up. Specially equipped or modified collection trucks staffed by trained workers stop to collect wastes. Wastes are classified according to compatibility and lab-packed as part of the collection process, and later delivered to a treatment or recycling facility. A more modest system would involve the pick-up of selected MRW such as household batteries and used oil by the current waste haulers with limited existing vehicle modifications required to refuse trucks.

**Relationship to  
Management  
Priorities:**

Once collected, some types of hazardous wastes can be transported to a recycling facility (batteries, oil, paint). Recycling is the second highest management priority.

**Advantages:**

Less effort required of householders; the collection truck comes to their houses. If program allows only certain targeted wastes, less screening and

sorting is needed, and storage and disposal are easier. Targeted wastes that have been successfully collected by modified or existing collection vehicles in other locations include household batteries and used oil.

**Disadvantages:** Potential public health threat and legal liabilities: children or pets may get into the wastes left on the curb. Antifreeze, for example, tastes sweet and is highly toxic to pets. Sorting, screening, and lab-packing of many wastes may be difficult, given space and time limitations inherent in curbside collection. Modification of existing collection vehicles or purchase of new vehicles is necessary.

**Feasibility/  
Likelihood  
of Success:** Curbside collection is feasible, but would be more expensive in rural areas where houses are far apart, especially if more than one or two waste types are collected. This program would be easiest to implement if limited to certain specific wastes that are not risky to leave on the curb, are not messy, and are easily recognized. Coordination with waste haulers would be required. The only ongoing curbside hazardous waste pick-up programs in existence are for waste oil and household batteries. In many of these programs, waste oil is collected by trucks as part of curbside recycling programs which do not currently exist in the region.

The local waste haulers may not be very interested in modifying their fleet to accommodate different materials. Household batteries are usually collected only in locations where MSW is incinerated and the potential release of heavy metals or metal contamination of the ash residue is an issue.

**Costs:** Los Angeles had a pilot program which attempted to perform this service for a few range of HHW but found that it was very expensive and not cost-effective when compared to other alternatives. For Grant, Adams, and Lincoln Counties a more economical, less costly alternative for collection general HHW would be more appropriate.

Limited HHW waste types curbside collection has not been attempted in Washington except for household batteries in Bellingham. This is a new program driven by the need to remove these wastes prior to incineration but it is a new program without a cost history to project to other locations. Costs may be estimated by contacting local waste haulers and discussing the types of wastes to be collected.

**Program:** **USED OIL COLLECTION FACILITIES**

**Description:** Used oil is collected at multiple igloos or free standing tanks from do-it-yourself (DIY) vehicle maintenance persons. Snohomish County has instituted a system of used oil collection stations specially designed for that use. Used oil is collected by some retail and service stations but much fewer are accepting this waste stream than in past years when the price of oil was

higher. The facility may be attended or not and may be a simple fuel/oil tank design or specially constructed and sited at the factory unit for the collection of used oil.

**Relationship to Management Priorities:**

Used oil that has been collected is typically refined for use as a lubricant or blended for use as a fuel. Either of these management techniques are higher on the waste management priority list than direct disposal via landfilling.

**Advantages:**

Recycling used oil provides a source of energy or substitute for virgin crude oil. Potential pollution from oil entering surface or ground water is reduced through non-land or wastewater management methods. The oil from one four-quart oil change can foul the taste of one million gallons of water and introduce toxic substances which may concentrate in animal and plant tissue.

Collection facilities for oil can be developed quickly and relatively inexpensive in comparison to many other MRW. Collection siting is usually relatively easy due to the stand-alone feature of holding tanks used for used oil.

**Disadvantages:**

Collection site needs to have a berm or drip pan containment to contain any spills. If unattended, contamination of oil by dumping of solvents, and other automotive related fluids can make the entire tank unusable for a refinery or as a fuel. Contaminated oil may cost \$0.25 per gallon or more to dispose of properly.

During periods of low crude oil prices, a used oil collection company may charge a fee per gallon to collect used oil.

**Feasibility/Likelihood of Success:**

Thousands of used oil collection facilities are in place throughout the United States. Because it has been estimated that up to two-thirds of all used oil is generated by individual DIY mechanics, convenient collection facilities for used oil is an effective program to manage this type of MRW.

In a 1981 Department of Energy (DOE) study, 75% of individuals that changed their own oil said that they would recycle their used oil if it was convenient to their usual shopping or auto supply locations. The DOE survey indicated that 61% of DIY oil changers improperly disposed of their oil on the land in their trash or to storm drains.

Although Ecology has been encouraging the recycling of used oil aggressively since 1983, fewer outlets and gas stations are accepting used oil now than in the early 1980s. The generation of used oil has increased during this same period. Consequently, there is large opportunity to improve the management practices for used oil. This program appears to be both feasible and likely to succeed.

**Costs:** Each site will require different amounts of improvements to be prepared for used oil collection. The collection facility should be located on an impervious surface and all applicable building, fire and safety codes should be considered in any installation.

A minimum facility would consist of berm with an impervious surface, a vented tank properly labelled to identify its contents, a fence to minimize trespassing and signs posted indicated no smoking allowed. WAC 212-51 provided a list of waste oil standards for recycling purposes.

An example range of possible costs per site would be:

200-300 gallon tank	\$ 300 -	2,000	
Site preparation	1,000 -	2,000	
Fencing	500 -	1,000	
Signs	<u>200</u> -	<u>500</u>	
	\$2,000 -	5,000	facility site

Maintenance of the collection site is assumed to be \$1,500 per year. The price paid for used oil pickup will vary depending primarily on crude oil market prices. Over time this may vary around zero to 15 to 20 cents per gallon paid to or by collector. Current cost are 0 to 10 cents paid to the used oil collector.

**Program:** **COLLECTION AREA AT TRANSFER STATIONS OR LANDFILLS FOR VEHICLE BATTERIES**

**Description:** A specific covered area or building designed for storage of vehicle batteries, with no additional increases in staffing levels. People would be asked when they pay their fees, if they have any vehicle batteries they would like to get rid of. Landfill personnel would be trained to properly handle vehicle batteries. Personnel working at the facilities would also be on the lookout for any batteries being disposed of. One of the collection companies could then be contacted to come and remove the batteries.

**Relationship to Management Priorities:** Provides households and businesses with an opportunity to recycle their batteries instead of landfilling or dumping. Often people may bring vehicle batteries to the landfill to get rid of them only to be told to dispose of them elsewhere.

**Advantages:** There are several locations within the region where batteries are currently being collected. Making modifications to the facilities that are already identified as disposal locations not only makes it more convenient for the population but also increases local awareness. Grant County Landfill already has an area identified to collect and store batteries.

**Disadvantages:** Time must be taken to handle and store lead acid batteries safely and legally.

**Feasibility/  
Likelihood  
of Success:** Grant County is already implementing a similar program which is successfully removing batteries from the solid waste stream. The experiences of the program can readily be passed on to Adams and Lincoln Counties for implementation.

**Costs:** Costs are relatively low for setting up a covered area. The ground surface should be impervious, such as concrete, to prevent any spills from potentially entering the ground water. The area will have to be covered to prevent any moisture from coming into contact with the batteries. Total costs may be \$1,000 to \$2,000 per site.

## C. COMPLIANCE TRACKING AND ENFORCEMENT

**Program:** HAZARDOUS WASTE DISPOSAL ORDINANCE

**Description:** The cities, Counties and POTW's would enact ordinances or pass resolutions prohibiting landfilling or discharge to wastewater treatment systems of moderate risk waste. Some examples of existing ordinances and local regulations are contained in Appendix F. The ordinance could include a definition of MRW and would define legal modes of treatment or disposal, analogous to the State's dangerous waste regulations. The ordinance could also require SQGs to keep records verifying their compliance with the ordinance. These records could include the following:

- Written documentation of the procedure used to determine if they generate targeted hazardous waste
- Contracts with milk-run/MRW collection services or other hazardous waste haulers
- Copies of manifests or receipts for hazardous waste shipments or hazardous wastes self-hauled to collection centers

This alternative should only be implemented after education has been performed and more specific problems are documented that call for the presence of an ordinance.

**Relationship to Management Priorities:** Prohibitions against disposal of household and SQG hazardous wastes through the MSW or wastewater system will help remove undesirable wastes from these waste streams. Publicizing and enforcing bans would promote higher waste management priorities.

**Advantages:** Sends a clear message to households and SQGs. Ordinances could give authority to take legal action against violators. May be most useful after an education campaign in order to foster compliance by more hesitant parties and specific problem areas are identified.

**Disadvantages:** Some businesses would probably oppose the ordinance. The program would not be as effective without an enforcement arm. There may also be some liability issues associated with an ordinance if it does not contain provisions for enforcement and someone is injured. Enforcement of these ordinances can be very costly. Enforcement would require the reallocation of staff time from other important tasks.

**Feasibility/Likelihood of Success:** Local governments have authority to regulate MRW under Chapter 70.105. Legality of a specific ordinance will have to be reviewed by County/City Attorneys and by Ecology. Success will depend on availability and cost of

alternative disposal methods and on the strength of the education and enforcement programs.

If the Counties or individual cities used phased enforcement in the ordinance, no enforcement may be needed in the early implementation phases. This type of ordinance may be difficult to pass until there is a widely perceived need for this type of government involvement in Grant, Adams, and Lincoln Counties.

**Costs:** Model local ordinances or regulations could be drafted for the region for perhaps \$5,000. See examples in Appendix F.

There may be potential liability costs to the cities or Counties if the ordinance is not enforced and someone is injured.

**Program:** WASTE ACCEPTANCE CONTROL PROGRAM (WACP)

**Description:** A WACP is designed to identify and remove hazardous waste that has entered the solid waste stream by developing procedures and inspection provisions at the point of collection and at the landfill. The following describes steps to establish a waste control program.

1. Solid waste collection and self-haul customers need to be made aware of new requirements and WACP procedures.
2. Garbage collectors should be trained to recognize which wastes are not acceptable. Notification procedures should be developed.
3. A waste inspector needs to be designated to inspect incoming loads for unacceptable waste. Other employees handling waste should also be trained to identify MRW. Loads should be randomly inspected each day, with several very thorough inspections over the course of the year.
4. When unacceptable waste is detected, WACP staff should identify the material, the hauler, and the generator to the greatest extent possible.
5. After the identification process, the generator, the hauler, and the appropriate enforcement agency should be notified. Notification should identify reasons why waste was not accepted at a solid waste landfill. The generator will be supplied with information regarding the SQG education program, if available, and/or household hazardous waste education program. The hauler or generator could be required to dispose of the waste properly or pay a fee.

**Relationship to Management Priorities:** The program would serve as a mechanism to educate and alert the generators to the implications associated with improper disposal. The SQG and household hazardous waste education programs would provide information to reinforce waste reduction and recycling, the two highest management priorities.

**Advantages:** A WACP would eliminate some of the easily identifiable MRW from the landfills and promote proper hazardous waste management, education, and reduction of hazardous waste disposal into the solid waste stream. This program would provide the effect of a regionwide solid waste disposal ordinance without having to pass an ordinance. The program could be most effective if coupled with a permanent MRW facility at landfills or transfer stations to provide proper disposal.

**Disadvantages:** The program may discourage individual haulers from bringing potential hazardous wastes to the landfill for disposal for fear of being discovered. They may instead dispose of the wastes by less safe means. Clean-up of these improperly disposed MRW would be costly.

**Feasibility/Likelihood of Success:** Periodic random inspections not only detect hazardous wastes in solid waste; but they also deter improper disposal into the solid waste stream. Inspection of self-haul generators will be emphasized and violators provided with immediate education. The WACP would involve assigning resources to inspection procedures and formalizing procedures for rejecting SQG and household hazardous waste. WACP programs have worked well in communities throughout the United States. The likelihood of success appears good.

**Cost:** A WACP could be implemented by staff at the landfill or transfer stations. To encourage compliance with the program as soon as possible, a higher level of effort could be made in the first year or two to fully educate commercial and self-haul customers. One employee would be designated to closely monitor random loads delivered to the landfills and transfer stations.

Approximate costs may be as follows:

Year 1	\$5,000 per landfill or transfer station
After Year 1	\$3,000 per landfill or transfer station

**Program:** SQG INSPECTION/ENFORCEMENT PROGRAM

**Description:** Periodic inspection by designated city and County building inspectors or other officials of all known SQGs, to be carried out in conjunction with city and County ordinances prohibiting improper disposal. Enforcement would occur through a phased-in approach. Purpose of first visit would be to identify problems, provide information, and issue a warning to the business

if needed. In follow-up inspections, agency would check for compliance and could issue citations for violations if necessary. Inspector would check for conformity between materials in use, purchase records, and records of hazardous waste disposal.

**Relationship to Management Priorities:**

Program would be used to enforce ordinances that prohibit disposal of targeted waste in landfills or in wastewater, discouraging the use of the last management priority.

**Advantages:**

Provides SQGs with the information they need to comply with the law. Gives backbone to ordinances. Waste reduction is usually very cost effective with short payback periods.

This program would be ineffective if there are no alternatives to improper disposal. The program may be opposed by businesses on an economic hardship basis. The program would require additional staffing or reprioritization of efforts by existing staff or new staff.

**Feasibility/ Likelihood of Success:**

The Alaska Health Project has developed a small business guide to help identify, implement, and evaluate waste reduction including MRW. This could be easily adopted for use by local SQG's. Seattle-King County Health Department has been "advising" small businesses quite successfully for a few years. Grant, Adams, and Lincoln Counties and/or the individual cities staff may be able to "learn the ropes" from this in-state resource.

**Costs:**

It is estimated that at least 1 FTE would be required to start and maintain a program of this nature in the region. The costs may range between \$35,000 to 45,000 per year for a comprehensive program.

**Program:**

**SOLID WASTE SORTING STUDIES TO DETERMINE MRW CONTENT**

**Description:**

One-time or repeated (e.g., annual and/or seasonal) program in which representative samples of solid waste delivered to landfill or transfer stations are sorted, and their MRW contents recorded. Data collected would include the source, number, type, and weight of hazardous materials per ton of solid waste. Some samples could be sent to labs for chemical analysis. This program could be repeated to help determine, in conjunction with surveys, the progress of Grant, Adams, and Lincoln Counties in reducing improper disposal of MRW.

**Relationship to Management Priorities:**

A waste sort would help to focus county efforts to manage MRW over the long term toward waste reduction and recycling the top two waste management priorities.

- Advantages:** Provides less biased, more scientific information than phone or mail-out surveys. Provides solid data on risks to sanitation workers, and potential environmental and public health threats. Provides baseline data from which improvements in disposal practices regarding the solid waste stream can be measured from time to time through follow-up surveys. County and/or city laborers can be used to perform the sort under a hired experienced waste sort supervisor. These data can also be used in solid waste planning and recycling efforts.
- Disadvantages:** This program does not measure other forms of improper disposal, such as burning, burying, or sewerage of wastes. Sorting studies can be expensive and may pose a minor health risk to MRW researchers, although no greater than everyday risks faced by sanitation workers.
- Feasibility/  
Likelihood  
of Success:** Major barrier is cost. Ease of program execution depends in part on cooperation of landfill/transfer station operators and the haulers. Sorting studies have been carried out in a number of communities, usually by consultants experienced in this area. A comprehensive study examining over 30 tons of Puget Sound area solid waste was carried out in 1985 and yielded a wealth of information on MRW.
- Costs:** Depends on number of waste samples sorted. A statistically valid survey for the three County region would cost at least \$30,000 to \$40,000 using County laborers diverted for a few days from other tasks.
- Program:** LABELING LAW IDENTIFYING SAFE DISPOSAL OPTIONS — STATE LEGISLATURE
- Description:** **State Level Program**
- A liaison would work with the Washington State Legislature to develop a bill requiring all moderate risk waste products to include label directions on proper disposal. Disposal options should include information regarding recycling and reuse similar to the state goals.
- Local Level Program**
- Each jurisdiction who is party to the Plan should endorse state labeling law legislation in writing to their respective legislators and city or county associations.
- Relationship to  
Management  
Priorities:** The labeling law would be used to help businesses and households identify what products are hazardous and require special disposal considerations compared with nonhazardous products.

**Advantages:** This program would increase public awareness of hazardous products on a statewide level. Increasing public awareness may reduce new collection program costs by reducing the quantities of MRW generated. Local level program would require minimal local resources to implement.

**Disadvantages: State Level Program**

Very costly. At the state level, all manufacturers that supply goods in the state would have to add the disposal label. Manufacturers of hazardous materials or products will not want to add anything indicating their product will require additional disposal.

**Local Level Program**

In addition to the State Level Program disadvantages this program variant must rely on a less direct approach to affecting the legislature as a whole.

**Feasibility/  
Likelihood  
of Success:**

Feasibility would depend upon the enforcement of the labeling law. Currently manufacturers are required to carry signal words telling the consumer something about the product's relative hazard. Poison, danger, warning and caution relate information about a product's toxicity or hazard. The law is confusing to some manufacturers as the distinction between signal words is not clear. The size of the letters as well as how clearly the signal words can be read is currently not regulated.

Some of these problems with the federal law could also be expected when implementing a state labeling law.

**Costs:**

**State Level Program**

It is estimated that one-half FTE for a two-year period would be required to start and help the state develop a law of this nature. Total cost estimate: \$35,000 to \$45,000 (over 2 years).

**Local Level Program**

Minimal local resources would be required.

Table VI-1  
 COST ESTIMATES FOR HHW COLLECTION EVENTS  
 (1990 DOLLARS)

<b>ASSUMPTIONS:</b>																																																			
3		Days of collection per year																																																	
2		Collection sites in the region																																																	
17,600		East side Population																																																	
56,500		West side Population																																																	
<b>DISPOSAL COST ASSUMPTIONS(1):</b>  Popular, fast growing program High Disposal Expense \$1.00 /capita East Side \$0.50 /capita West Side 50.0% increase per year		<b>DISPOSAL COST ASSUMPTIONS(1):</b>  Program with moderate popularity and growth Low Disposal Expense \$0.40 /capita East Side \$0.30 /capita West Side 25.0% increase per year																																																	
<b>Labor and Disposal</b>  <hr style="width: 100%;"/> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%;">1991</td><td style="width: 10%;"></td><td style="width: 60%; text-align: right;">\$46,000</td><td style="width: 20%;"></td></tr> <tr><td>1992</td><td></td><td style="text-align: right;">\$69,000</td><td></td></tr> <tr><td>1993</td><td></td><td style="text-align: right;">\$103,000</td><td></td></tr> <tr><td>1994</td><td></td><td style="text-align: right;">\$155,000</td><td></td></tr> <tr><td>1995</td><td></td><td style="text-align: right;">\$232,000</td><td></td></tr> <tr><td>1996</td><td></td><td style="text-align: right;">\$348,000</td><td></td></tr> </table>		1991		\$46,000		1992		\$69,000		1993		\$103,000		1994		\$155,000		1995		\$232,000		1996		\$348,000		<b>Labor and Disposal</b>  <hr style="width: 100%;"/> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%;">1991</td><td style="width: 10%;"></td><td style="width: 60%; text-align: right;">\$24,000</td><td style="width: 20%;"></td></tr> <tr><td>1992</td><td></td><td style="text-align: right;">\$30,000</td><td></td></tr> <tr><td>1993</td><td></td><td style="text-align: right;">\$37,000</td><td></td></tr> <tr><td>1994</td><td></td><td style="text-align: right;">\$47,000</td><td></td></tr> <tr><td>1995</td><td></td><td style="text-align: right;">\$59,000</td><td></td></tr> <tr><td>1996</td><td></td><td style="text-align: right;">\$73,000</td><td></td></tr> </table>		1991		\$24,000		1992		\$30,000		1993		\$37,000		1994		\$47,000		1995		\$59,000		1996		\$73,000	
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(1) Based on collection event cost information gathered by Ecology and R. W. Beck and Associates

Table VI-2  
 COST ESTIMATES FOR MOBILE HHW COLLECTION PROGRAMS  
 (1990 DOLLARS)

<p><b>CAPITALIZATION COST ASSUMPTIONS:</b></p> <p style="margin-left: 40px;">\$36,000      Possible cost share for the region</p>																																	
<p><b>LABOR COST ASSUMPTIONS:</b></p> <p style="margin-left: 40px;">3      Days of collection per week</p> <p style="margin-left: 40px;">6      Weeks of operation per year</p> <p style="margin-left: 40px;">\$2,400      per week for two hire staff</p> <p style="margin-left: 40px;">\$1,500      per week local support staff assistance and publicity</p> <p style="margin-left: 40px;">28,300      households in the region</p>																																	
<p><b>DISPOSAL COST ASSUMPTIONS :</b></p> <p>Popular, fast growing program</p> <p style="margin-left: 20px;">1.0% of households in year one</p> <p style="margin-left: 20px;">50.0% increased participation per year</p> <p style="margin-left: 20px;">0.4 drums per participating household</p> <p style="margin-left: 20px;">\$300 average disposal cost per drum</p>	<p><b>DISPOSAL COST ASSUMPTIONS:</b></p> <p>Program with moderate popularity and growth</p> <p style="margin-left: 20px;">0.5% of households in year one</p> <p style="margin-left: 20px;">25.0% increased participation per year</p> <p style="margin-left: 20px;">0.4 drums per participating household</p> <p style="margin-left: 20px;">\$300 average disposal cost per drum</p>																																
<p><b>Capital</b></p> <hr style="width: 80%; margin-left: 0;"/> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">1991</td> <td style="text-align: right;">\$36,000</td> </tr> <tr> <td>1992-1996</td> <td style="text-align: right;">\$0</td> </tr> </table> <p><b>Labor and Disposal</b></p> <hr style="width: 80%; margin-left: 0;"/> <table style="width: 100%; border-collapse: collapse;"> <tr><td>1991</td><td style="text-align: right;">\$57,000</td></tr> <tr><td>1992</td><td style="text-align: right;">\$86,000</td></tr> <tr><td>1993</td><td style="text-align: right;">\$129,000</td></tr> <tr><td>1994</td><td style="text-align: right;">\$194,000</td></tr> <tr><td>1995</td><td style="text-align: right;">\$290,000</td></tr> <tr><td>1996</td><td style="text-align: right;">\$436,000</td></tr> </table>	1991	\$36,000	1992-1996	\$0	1991	\$57,000	1992	\$86,000	1993	\$129,000	1994	\$194,000	1995	\$290,000	1996	\$436,000	<p><b>Capital</b></p> <hr style="width: 80%; margin-left: 0;"/> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">1991</td> <td style="text-align: right;">\$36,000</td> </tr> <tr> <td>1992-1996</td> <td style="text-align: right;">\$0</td> </tr> </table> <p><b>Labor and Disposal</b></p> <hr style="width: 80%; margin-left: 0;"/> <table style="width: 100%; border-collapse: collapse;"> <tr><td>1991</td><td style="text-align: right;">\$40,000</td></tr> <tr><td>1992</td><td style="text-align: right;">\$50,000</td></tr> <tr><td>1993</td><td style="text-align: right;">\$63,000</td></tr> <tr><td>1994</td><td style="text-align: right;">\$79,000</td></tr> <tr><td>1995</td><td style="text-align: right;">\$99,000</td></tr> <tr><td>1996</td><td style="text-align: right;">\$123,000</td></tr> </table>	1991	\$36,000	1992-1996	\$0	1991	\$40,000	1992	\$50,000	1993	\$63,000	1994	\$79,000	1995	\$99,000	1996	\$123,000
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1996	\$123,000																																

Table VI-3  
 COST ESTIMATES FOR PERMANANT HHW COLLECTION FACILITIES  
 (1990 DOLLARS)

<b>CAPITALIZATION COST ASSUMPTIONS:</b>  <div style="display: flex; justify-content: space-between;"> <div style="width: 15%;">\$14,000</div> <div>Collection Structure</div> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 15%;">\$10,000</div> <div>Site Preparation, assuming structure to be located at transfer station or landfill</div> </div>																																									
<b>LABOR COST ASSUMPTIONS:</b>  <div style="display: flex; justify-content: space-between;"> <div style="width: 10%;">1</div> <div>Days of collection per week</div> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 10%;">\$400</div> <div>per week for one staff personnel</div> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 10%;">28,300</div> <div>households in the region</div> </div>																																									
<b>DISPOSAL COST ASSUMPTIONS :</b>  Popular, fast growing program 0.1% of households in year one 50.0% increased participation per year 52 weeks of operation per year 0.4 drums generated per household \$300 average disposal cost per drum	<b>DISPOSAL COST ASSUMPTIONS:</b>  Program with moderate popularity and growth 0.01% of households in year one 10.0% increased participation per year 26 weeks of operation per year 0.4 drums generated per household \$300 average disposal cost per drum																																								
<b>Capital</b> <hr/> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 15%;">1991</td><td style="text-align: right;">\$24,000</td></tr> <tr><td>1992</td><td style="text-align: right;">\$24,000</td></tr> <tr><td>1993</td><td style="text-align: right;">\$24,000</td></tr> <tr><td>1994-1996</td><td style="text-align: right;">\$0</td></tr> </table> <b>Labor and Disposal</b> <hr/> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 15%;">1991</td><td style="text-align: right;">\$24,000</td></tr> <tr><td>1992</td><td style="text-align: right;">\$36,000</td></tr> <tr><td>1993</td><td style="text-align: right;">\$54,000</td></tr> <tr><td>1994</td><td style="text-align: right;">\$82,000</td></tr> <tr><td>1995</td><td style="text-align: right;">\$122,000</td></tr> <tr><td>1996</td><td style="text-align: right;">\$184,000</td></tr> </table>	1991	\$24,000	1992	\$24,000	1993	\$24,000	1994-1996	\$0	1991	\$24,000	1992	\$36,000	1993	\$54,000	1994	\$82,000	1995	\$122,000	1996	\$184,000	<b>Capital</b> <hr/> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 15%;">1991</td><td style="text-align: right;">\$24,000</td></tr> <tr><td>1992</td><td style="text-align: right;">\$24,000</td></tr> <tr><td>1993</td><td style="text-align: right;">\$24,000</td></tr> <tr><td>1994-1996</td><td style="text-align: right;">\$0</td></tr> </table> <b>Labor and Disposal</b> <hr/> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 15%;">1991</td><td style="text-align: right;">\$10,000</td></tr> <tr><td>1992</td><td style="text-align: right;">\$11,000</td></tr> <tr><td>1993</td><td style="text-align: right;">\$23,000</td></tr> <tr><td>1994</td><td style="text-align: right;">\$25,000</td></tr> <tr><td>1995</td><td style="text-align: right;">\$28,000</td></tr> <tr><td>1996</td><td style="text-align: right;">\$31,000</td></tr> </table>	1991	\$24,000	1992	\$24,000	1993	\$24,000	1994-1996	\$0	1991	\$10,000	1992	\$11,000	1993	\$23,000	1994	\$25,000	1995	\$28,000	1996	\$31,000
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## SECTION VII

### RECOMMENDED PROGRAMS AND ACTIONS

#### 1. INTRODUCTION

The MRW programs and actions outlined in Section VI are technically feasible and could potentially be implemented if there were no budgetary constraints on these activities. To assess whether a particular option should be recommended, each alternative program can be compared to the following:

- the goals and objectives of this Plan
- Ecology's guidelines for plan development
- whether the program addresses the targeted wastes
- whether the program can be implemented without incurring high costs

These factors must be weighed and balanced in the selection of the most appropriate combination of programs for the region. The selection of the most appropriate alternatives is the object of this section. Recommendation of some final administrative actions related to the implementation of the Plan are also included in this section. The HW committee as a whole was anticipating that the SQGs MRW generation and management techniques would be more of an overall problem in the region than shown in the survey results. These revelations from Section IV influenced the HW Committee in selecting programs aimed more at HHW than SQG MRW.

#### 2. PREFERRED PROGRAM ALTERNATIVES

In order to compare the program alternatives based on consistent criteria, the individual program descriptions and evaluation categories in Section VI were used to create a ranking matrix. Each HW Committee member completed a ranking matrix form. The completed forms were compiled and the simple average of the responses are showing in Table VII-1. Each ranking criterion was assigned either a positive and negative range of possible values. This ranking system reflects the fact that there are both advantages (positive attributes) and usually disadvantages (negative attributes) associated with each alternative. The criteria with positive attributes were ranked by the HW Committee on a scale of 1 to 5, with 1 representing somewhat positive and 5 representing very positive. On the other hand, criteria with negative attributes were ranked on a scale from 0 to -5, with 0 representing neutral or somewhat negative and -5 representing a very negative ranking. The alternatives are ordered based on the total ranking value received on Table VII-1.

The waste management priorities and costs of alternatives were not contained in the ranking matrix. This is because all of the programmatic alternatives promote higher waste

management practices if they were to be implemented. In this way they are all in accordance with the concept of using management techniques higher on the waste management practices hierarchy if they were to be implemented. Costs affect the alternatives which may be implementable but do not affect the potential desirability of a program. The impact of costs were developed after the alternatives were ranked and so, costs were not included in the ranking matrix.

In the last column of Table VII-1, there is a relative preference categorization based on the total ranking of each alternative. A "HIGH" relative preference was given to alternatives that received a ranking over 6.0. Alternatives which were ranked between 4.0 and 6.0 were designed with a "MODERATE" relative preference and those below 4.0 are noted with the relative preference of "LOW."

Based on the ranking analysis in Table VII-1, the MRW program alternatives that appear to be the best alternatives, before considering costs, for Grant, Adams, and Lincoln Counties are those which received "HIGH" or "MODERATE" relative preferences. These are the recommended programs which can be implemented within the five-year time frame of this Plan and are technically feasible in the region under current conditions.

- Public education for households and SQGs
- Vehicle battery collection programs in Adams and Lincoln Counties
- One or more used oil collection facilities for households and SQGs
- HW disposal ordinances for the region
- Labeling law at the state level
- Mobile collection facility for HHW
- Permanent collection facility for households and SQGs
- On-site HW assistance for SQGs

The remaining alternatives appear to be less desirable or effective for implementation in Grant, Adams and Lincoln Counties based on the current understanding of these programs.

The following subsections will examine further the "HIGH" and "MODERATE" preference program alternatives.

### **3. PROGRAM ALTERNATIVES VERSUS GOALS AND OBJECTIVES**

The alternatives to be implemented in Grant, Adams, and Lincoln Counties need to be reconciled with the goals and objectives established in Sections I and VI of this Plan, respectively. To show that each alternative meets these goals and objectives, Table VII-2 was

prepared. All of the goals and objectives are met by one, some, or all of the selected alternatives. Additional objectives were developed by the HW Committee and were largely administrative in nature as opposed to programmatic. These administrative issues are covered later in this section.

#### **4. PROGRAM ALTERNATIVES VERSUS ECOLOGY LISTING AND TARGETED WASTES**

Ecology's planning guidelines require the consideration of some specific program alternative. Also, the programs selected should establish efforts to address the proper management of the targeted wastes in Grant, Adams, and Lincoln Counties. In Table VII-3, the preferred alternative programs are evaluated with respect to the specific program alternatives suggested in the guidelines as well as for the management of the targeted wastes identified in Section IV. This table shows that all of the program alternatives mentioned in the guidelines are addressed by the selected programs and that all the targeted wastes can be addressed through the selected programs.

#### **5. ADMINISTRATIVE IMPLEMENTATION ACTIONS**

Administration organization and the assignment of responsibility between the different agencies in the region is needed for the efficient implementation of any regional program. More specifically, in order for the program to be implemented efficiently, the administrative planning, leadership, and responsibility for the recommended programs need to be clearly defined and understood. The first administrative objectives of the Plan require this type of understanding, particularly between the different agencies. The administrative objectives and recommended actions are listed in Table VII-4.

The HW Committee has the responsibility for developing and recommending this Plan to their Boards of Commissioners. A Regional MRW Task Force with representatives from the three Counties and incorporated cities, should be appointed to direct the implementation of the recommended programs which the Counties want to implement regionally. The Task Force would be appointed to coordinate with the different landfill owners/operators, State Patrol, Sheriff's Department, Cooperative Extension, the County Health, Public Works, and Planning Departments, SARA Title III enforcement agencies, and the privately funded projects that deal with MRW programs or issues in each County or City as appropriate and assigned by each County. Overseeing the development of region-wide educations and possibly other programs and future planning needs should also be a responsibility of the Task Force.

Initially, the lead implementing agencies for the plan will be Grant County Public Works Department, Adams County Public Works Department, and Lincoln County Planning and Building Department. As the plan is implemented, certain tasks will likely be assigned to the Task Force or others for execution as appropriate.

The programs or administrative issues that the local jurisdictions and Task Force could begin work on immediately include all of the actions listed in Table VII-4 except for periodic evaluation of programs.

The Regional MRW Task Force will direct the regional elements of the plan as assigned by Counties. It should also assist the County and any regional program and education coordinators in establishing the required funding and staffing for plan implementation. This may involve: meetings with Ecology and other State grant providers, local jurisdictions, local agencies, preparing budgets, soliciting paid and/or volunteer staff, talking to local clubs and service organizations, identifying and instigating the most appropriate funding mechanisms in different areas of the region, and other tasks as is appropriate.

The Regional MRW Task Force should also provide ongoing guidance and assistance to the program and education coordinators on regional issues and programs. The Regional MRW Task Force shall meet at least twice per year to review plan implementation progress and provide assistance and guidance as is appropriate.

## **6. ALTERNATIVE PROGRAM IMPLEMENTATION**

Tables VII-5 and VII-7 represent the estimated costs for two alternative program implementation options for the region, for Baseline and Ideal Implementation Options, respectively. The Ideal Option includes the program alternatives that were ranked "HIGH" or "MODERATE" by the HW Committee. The Baseline Option, in Table VII-5, includes the program alternatives that were ranked "HIGH" by the HW Committee.

### **a. Baseline Program Implementation Alternatives**

The Baseline Option, shown in Table VII-5, includes the "HIGH" ranked program alternatives and their estimated costs per year for the 5-year planning time frame. To satisfy Ecology's planning requirement for a minimum level of HHW collection, a permanent collection facility is included in the baseline program. This was the highest ranked HHW collection alternative. Because of the regional and rural nature of this plan, a mobile or other collection system may be implemented to satisfy this requirement for HHW collection. The intent of the implemented HHW collection program will be to collect at least the target wastes at locations in all three Counties.

This implementation option was developed to meet the minimum requirements of the planning guidelines but also provides a minimum level of collection and MRW education/outreach to local households and SQGs. Because the level of service for MRW is reduced in this option, the costs associated with its implementation are also reduced. The distribution of local funding based on County populations is shown in Table VII-6. All program costs identified in this implementation option would be less than the maximum grant funding levels expected to be available for plan implementation from Ecology.

## **b. Ideal Program Implementation Alternatives**

Shown in Table VII-7 is the estimated range of costs for the "ideal" program alternatives in each year from 1991 through 1996, the 5-year planning horizon for this plan. In the "State Funding" subsection of Section V the estimated level of available and continuing Ecology matching grant support is approximated. The 75% matching grant Ecology plans to provide support to the region was estimated to be up to approximately \$118,900 per year. If the region provides matching support (not necessarily in cash) of \$39,600, the total program value under the general plan implementation grant program would be about \$158,500.

There is also approximately \$33,000 of grant funds available for SQG education and technical assistance from Ecology at a 75% local match basis. This grant program would require the contribution from local sources of approximately \$11,000 for a potential SQG education and technical assistance program with a cost of approximately \$44,000.

In 1990 dollars, the maximum anticipated expenditure for the two SQG education and technical assistance programs cost the most in the start-up year 1991 (Table VII-8). In that year the Public Education for SQGs and the On-Site MHW Assistance for SQGs totals approximately \$22,000 to \$35,000, well below the \$43,000 estimated grant program amounts for these activities in the region.

The remaining programs in this implementation option have an estimated range of costs of between \$200,000 to \$272,000 in 1991 as shown in Table VII-8. Because the estimated 75% match grant from Ecology for plan implementation will provide matching funds up to about \$158,500, the plan implementation costs above this level would have to come from local regional sources; however, supplemental grant funds from the state are available if requested before July 1, 1991. An estimated range of local costs for the Ideal Option distributed proportionately to each County's population is also shown in Table VII-8. This table also reflects an anticipated reduction in the Ecology match to approximately 65% beginning in 1992.

This implementation option includes an estimated eight used oil collection facilities. An assumed distribution of the used oil facilities is four in Grant County and two each in Lincoln and Adams Counties. There may be more sites than this actually developed as experience and needs dictate. This implementation option also calls for one HHW and one SQG permanent collection facility in each County. The facilities are assumed to be constructed one per year for each HHW SQG until a total of six facilities are available across the region in addition to regional participation in a mobile collection facility for HHW to be built the first year of the Plan.

## **7. RECOMMENDED PROGRAMS**

To provide the region with a foundation MRW management system, the Baseline Implementation Program is recommended. If local or state funding is available at higher than expected levels, certain program alternatives will be added to more closely reflect the Ideal Program.

In the future, the programs listed above will provide insight and experience in managing MRW in the region. This acquired knowledge base will point to areas where additional efforts are needed or redirection of efforts is appropriate. Some of the other alternative programs may need to be implemented if additional needs of Grant, Lincoln, and Adams Counties require such action.

## 8. PLAN AMENDMENT PROCESS

No matter how complete and thorough a plan is at the time it is completed, conditions within the planning area or regulatory constraints from outside may necessitate changes in the plan to keep it current with the needs of the planning area. There is also the ongoing evolution of MRW management methods as experience is gained and innovative programs are developed. The plan amendment process needs to be triggered when significant changes are required in the plan document or when the amount, and/or distribution, and/or share of local funding jurisdictions is altered or proposed to change significantly. The plan is written with substantial flexibility in program and funding levels in order to minimize the need for amending the plan.

The Regional MRW Task Force will determine when conditions warrant a plan amendment prior to the plan update. Any County Board of Commissioners or other jurisdiction or agency in the region that is responsible for implementing plan program(s) can propose the commencement of a plan amendment to the Regional MRW Task Force or the Regional MRW Task Force can initiate the amendment process on its own volition. Any amendment must be adopted by all Counties and Cities in the region.

*From Grant-Adams  
Lincoln MRW  
Plan*

TABLE VII-1  
RANKING MATRIX FOR MODERATE RISK WASTE ALTERNATIVES  
AVERAGE RESPONSES FROM THE REGIONAL LOCAL  
HAZARDOUS WASTE MANAGEMENT COMMITTEE

Moderate Risk Waste Management Alternative	Advantages (1 to 5)	Disadvantages (0 to -5)	Feasibility/ Likely to Succeed (1 to 5)	Total Ranking (10 to -3)	Relative Preference
HHW Education	4.6	-0.7	4.1	8.0	High
Vehicle Battery Collection Program - Adams & Lincoln Counties	4.5	-0.5	4.0	8.0	
Used Oil Collection Facilities	4.4	-1.0	4.1	7.5	
SQG Education	3.9	-0.9	3.2	6.2	
HW Disposal Ordinance	4.2	-1.0	2.9	6.1	
Labeling Law (Local Level Program)	4.1	-1.3	2.6	5.4	Moderate
SQG Permanent Collection Facility	3.9	-2.1	2.9	4.7	
HHW Permanent Collection Facility	3.9	-2.3	2.9	4.5	
HHW Mobile Collection Facility	3.4	-1.9	2.9	4.4	
On-Site HW Assistance for SQGs	3.0	-2.0	3.0	4.0	
HHW Collection Days	2.6	-2.0	2.9	3.5	Low
Waste Acceptance Control Program	3.0	-2.0	2.0	3.0	
Curbside Pickup of HHW	2.9	-3.3	2.6	2.2	
SQG Inspection/Enforcement Program	2.8	-2.8	1.9	1.9	
Solid Waste Sorting Studies	2.0	-2.9	1.6	0.7	



TABLE VII-3

PROGRAMS THAT ADDRESS ECOLOGY ALTERNATIVES LIST  
OR IDENTIFIED TARGETED WASTES

Programs or Systems Identified by Ecology	Compatible Programs or Ones That Address the Targets										
	Public Education HHW	Vehicle Battery Collection Facilities	Used Oil Collection Facilities	Public Education SQG	HW Disposal Ordinances	Labeling Law Local-Level	Permanent Facility SQG	Permanent Facility HHW	Regional Mobile Collection	On-Site HW Assistance	
HHW and SQG information and technical assistance	X			X						X	
Local ordinances or incentives					X					X	
MRW diversions from improper disposal	X	X	X	X		X	X	X	X	X	
System/network to manage diverted MRW		X	X				X	X	X		
SQG assistance program				X		X				X	
SQG monitoring, surveillance, and enforcement				X	X					X	
Collection of HHW		X	X					X	X		
Collection of targeted MRW		X	X				X	X	X	X	
Targeted Wastes											
Used Oil	X		X	X	X	X				X	
Used Oil Filters	X		X	X	X	X				X	
Paint	X			X	X	X	X	X	X	X	
Pesticides	X			X	X	X	X	X	X	X	
Cleaners	X			X	X	X	X	X	X	X	

TABLE VII-4

ADMINISTRATIVE OBJECTIVES  
AND RECOMMENDED ACTIONS

<u>ADMINISTRATIVE OBJECTIVES (1)</u>	<u>RECOMMENDED ACTIONS</u>
1 Establish responsibility for coordination and implementation of this plan at the local level.	1 Form a region-wide MRW Task Force and hire a MRW education specialist/program coordinator for plan implementation oversight and assisting local Counties in implementation. Each County will initially implement Plan separately
2 Develop ongoing sources of funds, programs and administrative support to adequately implement the Plan recommendations.	2 MRW Task Force works with local jurisdictions to acquire local and state funding
3 Refine and improve MRW programs through periodic reevaluation. (1)	3 MRW Task Force program coordinator to periodically review programs
4 Establish responsibility for purchasing equipment specifically for HW management activities and to make the equipment available to cities and counties in the region.	4 MRW Task Force works with local jurisdictions
5 Identify what special insurance requirements are necessary for implementing the different program options for the three Counties.	5 MRW Task Force works with local jurisdictions
6 Encourage coordination of contaminate site cleanup response planning. Formalize responsibilities and roles within the region.	6 MRW Task Force works with local jurisdictions, Ecology, and site owners

(1) See Section VI for more details.

TABLE VII-5

## BASELINE IMPLEMENTATION AND COST ESTIMATES (1)

ESTIMATED RANGE OF COSTS (1991 DOLLARS, TO NEAREST \$1,000)

## RECOMMENDED PROGRAM

	1991	1992	1993	1994	1995	1996
HHW Collection	\$0	\$0	\$0	\$34,000 - \$48,000	\$35,000 - \$60,000	\$47,000 - \$78,000
Public Education - HHW	\$1,000 - \$5,000	\$38,000 - \$39,000	\$38,000 - \$39,000	\$39,000 - \$39,000	\$38,000 - \$39,000	\$38,000 - \$39,000
2 - Vehicle Battery Collection Facilities	\$1,500 - \$3,000	\$2,000 - \$4,000	\$2,000 - \$2,000	\$2,000 - \$2,000	\$2,000 - \$2,000	\$2,000 - \$2,000
8 - Used Oil Collection Facilities (2)	\$500 - \$1,500	\$16,000 - \$44,000	\$4,000 - \$4,000	\$4,000 - \$4,000	\$4,000 - \$4,000	\$4,000 - \$4,000
Public Education - SQG	\$0	\$18,000 - \$27,000	\$16,000 - \$25,000	\$16,000 - \$25,000	\$16,000 - \$25,000	\$16,000 - \$25,000
HW Disposal Ordinance	\$0	\$0	\$5,000 - \$5,000	\$0	\$0	\$0
Regional Coordination	\$500 - \$1,000	\$2,000 - \$4,000	\$2,000 - \$4,000	\$2,000 - \$4,000	\$2,000 - \$4,000	\$2,000 - \$4,000
Estimated Costs	\$3,500 - \$10,500	\$76,000 - \$118,000	\$67,000 - \$79,000	\$96,000 - \$122,000	\$97,000 - \$134,000	\$109,000 - \$152,000
Probable Ecology Funding (3)	\$2,600 - \$7,900	\$49,000 - \$77,000	\$44,000 - \$51,000	\$62,000 - \$79,000	\$63,000 - \$87,000	\$71,000 - \$99,000
Local Funding	\$900 - \$2,600	\$27,000 - \$41,000	\$23,000 - \$28,000	\$34,000 - \$43,000	\$34,000 - \$47,000	\$38,000 - \$53,000

(1) Includes funds from Ecology and each of the cities and counties through 1996

(2) Does not include disposal costs, assuming no revenue from used oil pick-up. Over time this may range plus or minus 20 cents per gallon.

(3) Assumes: Up to \$158,500 for Plan implementation and up to \$44,000 for SQG Ed. in 1991 at 75%.

Half of CPG used for Plan implementation, up to \$168,250, in 1992 and in 1993 at 65%\*.

Half of CPG used for Plan implementation, up to \$195,750, in 1994 through 1996 at 65%\*.

Grant County may apply for funding grants at a 75% level in 1992.

and beyond because of its status as a financially distressed county.

(See Section V for details about these Ecology grant programs. CPG means "Coordinated Prevention Grants".)

\* Because this is a unified plan, Adams and Lincoln counties may ask for a 10% increase of grant funding at 60% instead of this amount at 65% and Grant County can ask for 10% more at the full 75%, as a financially distressed county

TABLE VII-6

EXAMPLE FUNDING DISTRIBUTION FOR BASELINE IMPLEMENTATION PROGRAMS

LOCAL FUNDING BREAKDOWN PROPORTIONAL TO POPULATION IN EACH COUNTY (1)

ESTIMATED RANGE OF COSTS (1991 DOLLARS)

Year	Local Funding Range	Funding Distribution Proportional to Population (Nearest \$100)			Range of Dollars per Capita per Yr.
		Grant County*	Adams County	Lincoln County	
1991	\$900 - \$2,600	\$600 - \$1,800	\$200 - \$500	\$100 - \$300	\$0.01 - \$0.04
1992	\$27,000 - \$41,000	\$18,900 - \$28,700	\$4,900 - \$7,400	\$3,200 - \$4,900	\$0.36 - \$0.55
1993	\$23,000 - \$28,000	\$16,100 - \$19,600	\$4,200 - \$5,100	\$2,700 - \$3,300	\$0.31 - \$0.38
1994	\$34,000 - \$43,000	\$23,800 - \$30,100	\$6,100 - \$7,800	\$4,000 - \$5,100	\$0.46 - \$0.58
1995	\$34,000 - \$47,000	\$23,800 - \$32,900	\$6,100 - \$8,500	\$4,000 - \$5,600	\$0.46 - \$0.63
1996	\$38,000 - \$53,000	\$26,600 - \$37,100	\$6,900 - \$9,600	\$4,500 - \$6,300	\$0.51 - \$0.72

\* May apply for 75% matching funds due to its status as a financially distressed county

(note 1)

	1989 Population Estimate	Regional Population Percentage
Grant*	51,900	70.0%
Adams	13,400	18.1%
Lincoln	8,800	11.9%
Region	74,100	100.0%

TABLE VII-7

IDEAL IMPLEMENTATION AND COST ESTIMATES (1)  
ESTIMATED RANGE OF COSTS  
(1991 DOLLARS, TO NEAREST \$1,000)

RECOMMENDED PROGRAM	1991	1992	1993	1994	1995	1996
Public Education - HHW	\$2,000 - \$6,000	\$38,000 - \$39,000	\$38,000 - \$39,000	\$38,000 - \$39,000	\$38,000 - \$39,000	\$38,000 - \$39,000
2 - Vehicle Battery Facilities	\$1,500 - \$3,000	\$2,000 - \$4,000	\$2,000 - \$2,000	\$2,000 - \$2,000	\$2,000 - \$2,000	\$2,000 - \$2,000
8 - Used Oil Collection Facilities (2)	\$1,000 - \$3,000	\$16,000 - \$44,000	\$4,000 - \$4,000	\$4,000 - \$4,000	\$4,000 - \$4,000	\$4,000 - \$4,000
Public Education - SGQ	\$0	\$18,000 - \$27,000	\$16,000 - \$25,000	\$16,000 - \$25,000	\$16,000 - \$25,000	\$16,000 - \$25,000
HW Disposal Ordinance	\$0	\$0	\$5,000 - \$5,000	\$0	\$0	\$0
Labeling Law (Local-Level, 3)	\$0	\$0	\$0	\$0	\$0	\$0
Permanent Collection Facility - SQG (4,5)	\$0	\$34,000 - \$44,000	\$37,000 - \$54,000	\$51,000 - \$69,000	\$33,000 - \$68,000	\$42,000 - \$102,000
Permanent Collection Facility - HHW (5)	\$0	\$34,000 - \$48,000	\$35,000 - \$60,000	\$47,000 - \$78,000	\$25,000 - \$82,000	\$28,000 - \$122,000
Regional Mobile Collection	\$0	\$76,000 - \$93,000	\$50,000 - \$86,000	\$63,000 - \$129,000	\$79,000 - \$194,000	\$99,000 - \$290,000
On-Site HW Assistance for SQGs	\$0	\$4,000 - \$8,000	\$4,000 - \$8,000	\$4,000 - \$8,000	\$4,000 - \$8,000	\$4,000 - \$8,000
Regional Coordination	\$2,000 - \$4,000	\$4,000 - \$8,000	\$4,000 - \$8,000	\$4,000 - \$8,000	\$4,000 - \$8,000	\$4,000 - \$8,000
Estimated Costs	\$6,500 - \$16,000	\$184,000 - \$268,000	\$153,000 - \$244,000	\$187,000 - \$315,000	\$163,000 - \$383,000	\$195,000 - \$553,000
Probable Ecology Grant (6)	\$4,900 - \$12,000	\$120,000 - \$168,000	\$99,000 - \$159,000	\$122,000 - \$196,000	\$106,000 - \$196,000	\$127,000 - \$196,000
Local Funding	\$1,600 - \$4,000	\$64,000 - \$100,000	\$54,000 - \$85,000	\$65,000 - \$119,000	\$57,000 - \$187,000	\$68,000 - \$357,000

- (1) Includes funds from Ecology and each of the cities and counties through 1996
- (2) Does not include disposal costs, assuming no revenue from used oil pick-up. Over time this may range plus or minus 20 cents per gallon.
- (3) A local recommendation for the State, therefore, no costs are included at the regional level
- (4) Assumed to operate independent of HHW facility
- (5) Assumed construction of 1 facility per year until 3 facilities are built, one in each County
- (6) Assumes: Up to \$158,500 for Plan implementation and up to \$44,000 for SQG Ed. in 1991 at 75%.  
Half of CPG used for Plan implementation, up to \$168,250, in 1992 and in 1993 at 65%.  
Half of CPG used for Plan implementation, up to \$195,750, in 1994 through 1996 at 65%.  
Grant County may apply for funding grants at a 75% level in 1992 and beyond because of its status as a financially distressed county  
(See Section V for details about these Ecology grant programs. CPG means "Coordinated Prevention Grants".)

\* Because this is a unified plan, Adams and Lincoln counties may ask for a 10% increase of grant funding at 60% instead of this amount at 65%, and Grant County can ask for 10% more at the full 75%, as a financially distressed county

TABLE VII-8

EXAMPLE FUNDING DISTRIBUTION FOR IDEAL IMPLEMENTATION PROGRAMS  
 LOCAL FUNDING PROPORTIONAL TO 1989 POPULATION IN EACH COUNTY (1)

(1991 DOLLARS)

Year	Total Local Funding Range	Funding Distribution Proportional to Population			Range of Dollars Per Capita Per Yr.
		Grant County*	Adams County	Lincoln County	
1991	\$1,600 - \$4,000	\$1,100 - \$2,800	\$300 - \$700	\$200 - \$500	\$0.02 - \$0.05
1992	\$64,000 - \$100,000	\$44,800 - \$70,000	\$11,600 - \$18,100	\$7,600 - \$11,900	\$0.86 - \$1.35
1993	\$54,000 - \$85,000	\$37,800 - \$59,500	\$9,800 - \$15,400	\$6,400 - \$10,100	\$0.73 - \$1.15
1994	\$65,000 - \$119,000	\$45,500 - \$83,300	\$11,800 - \$21,500	\$7,700 - \$14,100	\$0.88 - \$1.61
1995	\$57,000 - \$187,000	\$39,900 - \$131,000	\$10,300 - \$33,800	\$6,800 - \$22,200	\$0.77 - \$2.52
1996	\$68,000 - \$357,000	\$47,600 - \$250,000	\$12,300 - \$64,600	\$8,100 - \$42,400	\$0.92 - \$4.82

\* May apply for 75% matching funds due to its status  
 as a financially distressed county

(note 1)	1989 Pop. Estimate	Pop. Percentage
Grant*	51,900	70.0%
Adams	13,400	18.1%
Lincoln	8,800	11.9%
	74,100	100.0%