

Household Hazardous Waste

6.1 INTRODUCTION

This chapter of the county's Solid Waste Management Plan (SWMP) discusses the issues, policies and options of managing Household Hazardous Waste (HHW) in Yamhill County.

HHW is hazardous waste commonly found around the house that has the potential to cause significant harm to human health or the environment. HHW are substances commonly used in household cleaning, around the yard, or in hobbies, crafts and auto maintenance that are poisonous, toxic, flammable, reactive or corrosive. These products include, but are not limited to pesticides, herbicides, mercury and mercury thermometers, some types of batteries, gasoline, kerosene, motor oil, antifreeze, oil-based paint, paint thinner, turpentine, pool chemicals and drain cleaners.

Without proper disposal opportunities, these materials are dumped illegally on the ground, in a stream, in the sewer system, allowed to evaporate, or sent to municipal solid waste (MSW) landfills that are not licensed to receive hazardous wastes. Improper use, storage, handling, and disposal can impact local air quality, human health, and environmental systems, as described below:

- **Product Use.** Improperly used pesticides may enter groundwater or runoff from lawns and gardens into storm drains, rivers and lakes, killing aquatic life and contaminating drinking or surface water.
- **Product Storage.** Improperly stored products may cause accidental poisonings, especially among children. Flammables (solvents, fuels) may start fires or add fuel loads to buildings.
- **Waste Collection.** Employees at solid waste transfer stations or disposal facilities have been injured or endangered as a result of hazardous waste mixed in with household garbage from residents and businesses. Chemicals for swimming pools are highly reactive and can release poisonous gasses. Flammable products may ignite inside a vehicle, transfer station or disposal site.
- **Product Disposal.** Many hazardous products, unless segregated and collected separately from other wastes, may contaminate the soil, water and air through a direct release into the environment. This includes accidents within the home, releases from disposal sites (landfills and transfer stations), and releases into municipal wastewater treatment facilities.

The disposal of some HHW products (mercury) in lined, RCRA Subtitle-D facilities may cause environmental damage by leaching through the waste and degrading the liner system, causing leaks from the landfill. Some households and small business may flush certain hazardous wastes into the local wastewater sewer system. Some types of HHW can damage drain lines, leak into surrounding soil, or enter wastewater treatment facilities where chemicals may damage biological components within the treatment system.

Household Hazardous Waste

The proper disposal of HHW is an important factor for the county's solid waste management system. HHW can present substantial environmental and health risks that will require solutions as Yamhill County grows and the demand for disposal options increase. The proper management of these waste streams will reduce the health risk and reduce the impact to the environment.

6.2 REGULATORY BACKGROUND

The management of hazardous substances is regulated under Subtitle C of the federal Resource Conservation and Recovery Act (RCRA). The rules however, specifically exempt wastes generated in homes, by stating that HHW shall be managed under Subtitle D as solid waste. Households are exempt from liability under the federal CERCLA ("Superfund"). HHW is also exempt from most state or local separation requirements governing hazardous wastes, with the exception of a disposal prohibition of "bulk liquids" such as large quantities of paint in solid waste.

These materials typically accumulate in small quantities within the home, but inappropriate disposal of these wastes, even in small quantities, may harm human health or the environment. Since management of these household hazardous wastes as solid wastes is not adequate, there is language in subtitle D of RCRA encouraging states to develop solid waste management plans and to develop management of HHW to prevent it from going to MSW landfills.

States, including Oregon, have provided funding and other support to local jurisdictions to encourage collection of HHW and its proper disposal. The material is collected through special HHW collection events or at permanent HHW facilities. These collection events or facilities are often opened to certain businesses that generate very low amounts of hazardous waste. These businesses are required to pay for the services that are provided to them, whereas HHW customers are provided the service as part of their solid waste service.

Some businesses, including dry cleaners, print shops and film processors, generate what is considered to be very small quantities of hazardous waste materials. These conditionally exempt small quantity generators (CESQG) are businesses that generate less than 100 kilograms per month (220 pounds) of hazardous waste (or 1 kilogram/month of acutely hazardous waste), and accumulate less than 1,000 kilograms (2,200 pounds) of that material at any one time.

This category, unlike generators of larger amounts of hazardous waste, is not required to have an EPA identification number, use a shipping manifest, properly package and label waste shipments, or report to DEQ (though they still must follow standard OSHA and DOT labeling and shipping requirements).

Like households, CESQGs are allowed to use permitted MSW facilities as a method of disposal. They are, however, responsible for maintaining paperwork to verify their CESQG status, and for verifying the proper treatment or disposal of their wastes. By allowing CESQGs to use

Household Hazardous Waste

collection events or HHW facilities, jurisdictions can ensure proper disposal of more hazardous materials.

CESQG examples (and common types of wastes they generate) include:

- Small printers (press cleaners and other solvents)
- Photography businesses (developers, bleaches, fixers)
- Small dry cleaners (perchloroethylene)
- Automobile services (spent solvents, antifreeze)
- Construction contractors (paint thinner, flammable paints, varnishes, stains)
- Farmers, landscapers and horticultural businesses (pesticides, herbicides, fungicides, motor oil)

6.3 OREGON HHW PROGRAMS

The state of Oregon has provided two mechanisms to promote the collection and proper disposal of HHW within its jurisdiction. First, the state has set up a contract with a private HHW collection company, which can be used by local jurisdictions to provide special collection events to their residents. The second program provides grants to build permanent HHW collection and storage facilities.

6.3.1 State HHW Contractor

The states of Oregon (for the Department of Environmental Quality) and Washington (for the Department of Ecology) maintain contracts for waste management that may be used by local governments in Oregon through a special program. This program allows local jurisdictions to use the state's respective waste management contractor(s) (and the security of those contracts) to meet their HHW management requirements.

These contracts require the user (local jurisdictions) to follow the respective state decisions regarding waste management options. The DEQ, when selecting disposal options, often uses (by rank) environmental protection, reduced liability, and cost as its primary considerations. Under CERCLA (Superfund), the waste "generator" (whoever signs the waste manifests – typically this is the facility manager, such as the county) is responsible and may be liable should hazardous waste from this program end up causing environmental damage. The generator (Yamhill County) is liable *even if this damage occurs outside Yamhill County or is a consequence of poor management by the county's hazardous waste vendor or its agents.*

Some HHW may be recycled or re-used, but the some types may require delivery to a permitted Treatment, Storage and Disposal Facility (TSDF). There, wastes may be recycled, disposed of in a hazardous waste landfill, burnt for fuel, or incinerated in a hazardous waste incinerator. The

Household Hazardous Waste

TSDf then provides the generator with a certificate of disposal or destruction as appropriate. Waste management options are driven by a variety of factors, including available technology, cost, policy (the waste management hierarchy) and risk.

There is a significant liability involved with handling and transporting larger quantities of HHW materials, and even though the state employs a contract handler, liability associated with the transport and disposal of hazardous waste can never be reduced to zero. It can be limited through adequate contract terms and by ensuring that the TSDf's and the companies that own them have a history of compliance. This includes relevant experience and staff, a U.S.-based insurance policy with a reasonable deductible and from an insurance company with acceptable ratings (A- or better from AM Best, or A or better from Standard and Poor's), adequate funding reserved for facility closure, and adequate overall financial strength.

The insurance policies should cover vehicle liability, including MCS-90 (provides cash availability to pay for immediate clean up in the event of spills), workers' compensation, general liability, pollution liability for at least the next three years, and umbrella liability (for all liability expenses not covered by other insurance). Yamhill County can eliminate the investigation of these issues through the use of a state contractor provided state has included such provisions in the vendors' agreement.

If the county does not use a state-approved contractor it will be essential to review and approve the TSD facilities used by the contractor for adequate liability insurance, compliance history and management systems. The county should also consult with its risk management group to determine the degree of risk and adequacy of existing insurance policies associated with managing and transporting the waste in a county-owned and operated vehicle.

6.3.2 Permanent HHW Facility Grants

The HHW grant program provides funds from DEQ for a permanent facility that provides HHW collection services to all residents of a specific jurisdiction in Oregon. These permanent facilities provide a consistent schedule for HHW material collection and can increase participation in the program. Based on the biennium budget for fiscal year 2003-04, the grant amount is \$60,000 plus \$0.50 for each resident over 10,000, with a maximum of \$100,000.

6.4 WASTES TO TARGET AND ACCEPT

In Oregon, many HHW collection programs typically collect the high-hazardous waste types that have been identified by the Oregon Department of Environmental Quality. This requires a special focus on the following categories:

- **Poisons:** pesticides, herbicides and fungicides

Household Hazardous Waste

- **Heavy Metals:** mercury and products containing elemental mercury (thermostats and thermometers, fluorescent light tubes, mercury batteries, bilge pump switches), Nickel-Cadmium (Ni-Cad) batteries, lead-acid batteries
- **Flammables:** solvents, gasoline, kerosene, other fuels, oil-based paint and flammable solids
- **Corrosives:** acids, bases and reactives (such as pool chemicals)

6.4.1 Waste Types to Collect

Yamhill County’s consideration and review of the issues and policies for managing HHW and CESQG waste will define how it identifies the products its system will collect. The types of materials typically collected in other HHW programs often include but are not limited to:

<p>Paints, Stains and Solvents</p> <ul style="list-style-type: none"> • Oil-based paint and stains • Latex paint, water-based stains • Aerosol paints • Other paints (pool, marine, auto) • Solvent-based cleaning fluids • Water-based cleaners 	<p>Pesticides and Poisons</p> <ul style="list-style-type: none"> • Solid, non-flammable pesticides/herbicides • Aerosol pesticides/herbicides • Liquid pesticides/herbicides • Solid, flammable pesticides/herbicides
<p>Corrosives</p> <ul style="list-style-type: none"> • Acids • Bases (drain cleaners, oven cleaners) • Reactives • Oxidizers (pool chemicals) 	<p>Other Automotive Products</p> <ul style="list-style-type: none"> • Motor oil (new and used) • Contaminated, used motor oil • Antifreeze • Vehicle batteries • Old fuel • Other automotive fluids
<p>Other Household Products</p> <ul style="list-style-type: none"> • Consumer batteries (ni-cad, lithium) • Heavy metals • Polishes, waxes, soaps • Thermometers • Fluorescent light bulks • Ballasts 	<p>CESQG Waste</p> <ul style="list-style-type: none"> • Automotive products • Agricultural chemicals • Laboratory chemicals • Photography & Printer chemicals • Construction chemicals

6.4.2 Wastes to Exclude

Household Hazardous Waste

The county should consider excluding some hazardous waste products due to safety and existing recovery programs. Examples of these exclusions include:

- Explosives
- Radioactive materials
- Electronics
- Compressed gas cylinders

For the most part these items are handled by other entities and require special handling.

Explosives and radioactive materials require handling beyond the training of a HHW program and should be referred to the local fire marshal or hazmat team. Electronics are often bulky and are more easily handled by a commercial recycler. Compressed gas cylinders should also be referred to a commercial handler or provider for proper discharge and disposal.

6.5 YAMHILL COUNTY HHW SYSTEM

Yamhill County is a growing and important part of the Willamette River Valley in Northwest Oregon. The most diverse agricultural region in Oregon, this valley specializes in berries, vegetables, hazelnuts, hops, grapes, grass seed and nursery products. The market value of the county's agricultural production, which includes a growing wine industry, ranks seventh in Oregon. Its other principal industries include lumber, education, international aviation, dental equipment, manufactured homes, pulp and paper, and steel.

Yamhill County is 718 square miles. Its population of 84,992 (2000 Census) reflects a 10-year increase of 29.7% and an urban to rural residential ration of three to one. It has ten incorporated cities with populations that range from Yamhill (794) to McMinnville (26,499).

Yamhill County generated 128,043 tons of waste in 2001. 65,022 tons were disposed of the Riverbend Landfill; 63,021 were recovered for processing and recycling. Currently, Riverbend Landfill has permitted capacity to meet the county's disposal requirements through 2014. A long-term disposal solution should include consideration of how the county manages its special waste streams like HHW.

Two private companies, Western Oregon Waste (WOW) and Newberg Garbage Service (NGS), provide residential and commercial collection of MSW in Yamhill County. These companies operate through franchise agreements with the county that permit regular collection and recycling services. They also provide limited HHW service (antifreeze and used motor oil) through their respective material recovery (WOW) and transfer station (NGS) operations.

These facilities, and the Riverbend Landfill, provide recycling drop-off for antifreeze, used motor oil, scrap metal, tin/aluminum cans, glass, plastic bottles, magazines, newsprint and corrugated cardboard.

Household Hazardous Waste

HHW generation can be expected to grow at the same rate as the population growth and similar to that of the solid waste stream. HHW is estimated across the nation to vary between 0.01% to 3.4% of MSW by weight, with the variability coming mainly from the differences in the definition of what material is HHW. In this analysis, the HHW generation rate is assumed to be 1% of the total waste generated. Regardless of which generation rate is used, any HHW that is not collected by HHW programs can be assumed to have been improperly disposed of. Tables 7-1 summarizes the growth in waste generation for the next twenty years in Yamhill County.

Table 6-1
Yamhill County Waste Stream Projections

<i>Year</i>	Population¹	Waste Generated (tons)²	HHW Generated (tons)³
2001	86,400	128,043	1,280
2005	91,924	135,128	1,351
2010	99,516	146,288	1,463
2015	109,040	160,288	1,603
2020	118,868	174,735	1,747

¹ See data presented in Table 2-4.

² Based on Yamhill per capita waste generation rate of 2,940 lbs./year.

³ Based on national average generation rate of 1% of total waste generated

As the county continues to grow, the amount of HHW generated will continue to grow. It is in the best interest of the environment within the county to identify and adopt a HHW program that will increase the awareness of the community and increase the total HHW collection within the county. Providing HHW collection programs increases the likelihood that these materials will be properly disposed.

6.5.1 County Hazardous Waste Recycling Program

Yamhill County offers one hazardous waste recycling program through its franchise collection services. These services collect used motor oil at three facilities throughout the county. It advises the county's businesses and citizens about the services available through the Metro transfer stations, HHW facilities and latex paint recycling program in Portland and Oregon City.

Household Hazardous Waste

The two Metro Transfer Stations are open to the public and citizens of Yamhill County seven days per week between 7:00 a.m. and 7:00 p.m. (HHW Monday through Saturday from 9:00 a.m. to 4:00 p.m.). However the Metro South Transfer Station in Oregon City is about 40 miles and the Metro Central Transfer Station in NW Portland is about 50 miles from McMinnville.

Used Motor Oil

This service allows citizens to deliver used motor oil to the franchised Newberg Garbage Service Transfer Station, Western Oregon Waste Recycling Center or the Riverbend Landfill. The combination of options diverts 10,000 gallons per year into a recovery program. The oil collected by franchised firms is sent to recycling operations in Oregon and Washington.

Used Batteries

The same facilities accept used batteries for recycling at their operations.

Antifreeze

Western Oregon Waste collects antifreeze for a fee at the recycling center. In 2003 they collected about 50 gallons and it is recycled by Thermafluids. NGS does not collect antifreeze at the transfer station.

6.5.2 Existing Collection Events

In addition to the ongoing recycling program, Yamhill County has conducted nine HHW collection events in two-year cycles since 1992. These have been weekend events (April, June or September) in two locations: McMinnville on Saturday and Newberg on Sunday. The county uses an DEQ-approved environmental contractor to receive, process and dispose of the HHW from these events. The costs to hold these special HHW collection days were initially paid for by DEQ. In January 1999 Yamhill County Solid Waste Department began paying for the HHW collection events. Table 7-2 provides a summary of the participation at the 1997, 1999, and 2001 events. As shown, the costs of these events have ranged from \$25,000 in 2001 to as high as \$72,000 in 1999.

During these collection events, participants brought a wide variety of HHW materials, as shown in Table 7-3. These materials range from small quantities of toxic materials, such as mercury, to larger quantities of both latex and oil-based paints. Most notable is that of the 30,000 lbs collected at the event, 25,000 lbs (or 83% by weight, and two-thirds of the total cost) was Paint/Non-Poisonous substances. In fact, the event collected 9,450 lbs (32%) of latex paint, which can be handled at existing nearby facilities and recycled instead of collected and handled as hazardous waste.

Both the county and DEQ provide public information about their respective collection events. While the HHW collection event is free to the public, DEQ and the county require that CESQG

Household Hazardous Waste

participants pre-register and pay a disposal fee based on the type and quantity of waste that they bring.

**Table 6-2
Yamhill County Household Hazardous Waste Collection Events Participation/Costs**

Year	Event Month & Location	Resident Number	Estimated Weight Collected (tons)	Total Event Cost (disposal, people)	Total Event Cost Per Ton	Total Cost Per Participant	Total Tons Collected
1997	April - McMinnville	666	28.5	\$57,169	\$2,006	\$73.27	44.6
	April - Newberg	359	16.1	\$34,952	\$2,170	\$63.43	
1999	Sept. - McMinnville	950	38.3	\$72,519	\$1,893	\$50.18	74.6
	Sept. - Newberg	554	36.3	\$56,388	\$1,553	\$101.78	
2001	April - McMinnville*	532	21.4	\$38,317	\$1,790	\$72.02	36.7
	April - Newberg*	248	15.3	\$25,014	\$1,635	\$100.86	

Note: The total cost for each event includes disposal, advertising and additional personnel.

*In 2001, participation was less than previous years partially due to limited or no special advertising to support this program.

Event Comparisons

Yamhill County's 1997, 1999 and 2001 HHW events provide important, comparative information about the value of these collection days. In 1997, the event saw 1,025 participants who delivered 44 tons of HHW. The 1999 event had 1504 participants who delivered almost 75 tons of waste at two locations (an increase of almost 47% in participation and 70% in material).

The increase in participation may be a result of better promotion and the fact that more people were aware of the program based on the 1997 events. In the 2001 event, 780 citizens delivered over 36 tons. This 39-ton drop in the volume of HHW may reflect the difference between participation based on promotion. As noted above there was limited or no special advertising of these events. The 1999 events included a minimum of ten percent of the total budget for advertising and promotion. The 2001 events had no budget for these activities.

Household Hazardous Waste

**Table 6-3
Yamhill County Household Hazardous Waste Collection Amounts, Newberg 2001**

Waste Material	D.O.T. Proper Shipping Name	Pounds of Waste	# of Drums	Cost per Line
Paint / Non-Poisonous Waste				
Oil Base Paint	Paint Related Material	7200	8	\$ 3,414.48
Latex Paint	Non RCRA Waste Liquid	9000	10	\$ 4,325.50
Aerosol Paint	Aerosols, Flammable	800	4	\$ 857.50
Solvents	Flammable Liquid	3600	9	\$ 1,125.00
Latex Paint	Latex Bulk	450	1	\$ 150.00
Flammable Solid	Flammable Solids, Organic, N.O.S.	4	1	\$ 40.00
Oil Base Paint	Paint Related Material	3000	12	\$ 1,620.00
Latex Paint	Non RCRA Waste Liquid	1000	4	\$ 500.00
	Subtotal, Paint/Non-Poisonous Waste	25,054	49	\$ 12,032.48
Toxic & Special Hazard				
Aerosol Insecticide	Aerosols, Poisonous	200	1	\$ 183.75
Isocyanates	Isocyanates Toxic	135	1	\$ 120.00
Acid	Corrosive Liquid, N.O.S.	250	1	\$ 225.00
Base	Caustic Alkali Liquid, N.O.S.	250	1	\$ 225.00
Poison Flammable	Toxic Liquids Flammable, Organic, N.O.S.	3250	13	\$ 3,575.00
Oxidizer	Oxidizing Liquid, N.O.S.	150	1	\$ 325.00
Reactive	Water Reactive, Solid, N.O.S.		0	\$ -
PCB-Ballasts	Polychlorinated Biphenyl's		0	\$ -
Lead Acid Batteries	Batteries Wet, Filled With Acid	26	1	\$ 40.00
Poison PG I	Toxic, Organic, Liquids, N.O.S.		0	\$ -
Mercury	Mercury Thermometers (90)	5	1	\$ 56.00
Mercury	Mercury Debris	3	1	\$ 56.00
Spontaneously Combustible	Sodium Hydrosulfite	4	1	\$ 40.00
Base	Corrosive Liquid, Basic Inorganic	40	1	\$ 56.00
	Subtotal, Toxic & Special Hazard	4313	23	\$ 4,901.75
Lower Toxic Risk Materials				
Antifreeze	Non RCRA Waste Liquid	550	2	\$ 113.05
Asbestos	Asbestos	100	1	\$ 65.00
PPE Gear / Plastics	Non RCRA Waste Solid		0	\$ -
Ni-Cad Batteries	Batteries Dry, Containing Potassium Hydroxide, Solid	21	1	\$ 40.00
Alkaline Batteries	Batteries Dry, Containing Potassium Hydroxide, Solid	150	1	\$ 41.25
Fluorescent Lights	Material Not Regulated by D.O.T.	60 ft	1	\$ 9.00
Lithium Batteries	Lithium Battery	3	1	\$ 40.00
Cylinders	Compressed Gas Flammable	250	2	\$ 850.00
MEKP	Organic Peroxide Type E Liquid	1	1	\$ 40.00
	Subtotal, Lower Toxic Risk	1075	10	\$ 1,198.30
Grand Totals		30,442	82	\$ 18,132.53

Household Hazardous Waste

6.5.3 1998 HHW Survey

In 1998 Yamhill County conducted a survey of residents to obtain their opinion of the HHW service that the county provides. A total of 400 people completed the phone survey, and 29% indicated that they had used the HHW service. A total of 16% of the people were unaware that the county was offering the service, and 35% of the people responded that they had no HHW that needed to be disposed of at the time. The survey also asked if people would be willing to pay for HHW service, and 61% of the respondents said that they would be willing to pay an additional \$0.60 per month in their garbage bill for semi-annual collection events, and 25% would choose to pay an additional \$1.10 per month for a permanent facility that is open once per week.

The numbers discussed above indicate that there is a lot of support for the HHW program in Yamhill County, and that they are willing to pay a nominal amount for this service. Of the people surveyed, 86% would choose to support semi-annual or weekly collections with an increase in their garbage bill, even though only 29% had stated that they had used the HHW collection program before. Assuming that the county instated a \$0.60 per month fee for HHW and Latex Paint services, approximately \$218,000 would be available for administering the programs (based on 30,270 households residing in the county).

The survey responses show two things. First, regardless of whether or not residents had HHW materials to dispose of, the majority was in favor of a collection program in the County. And second, that residents indicated that they would be willing to pay a nominal amount for these services in their monthly collection bills.

6.5.4 Latex Paint Collection Program

A large component of the material received at HHW collection events is latex paint, which is not hazardous and can be recycled. Table 7-3 shows that 10,000 lbs or 33% of the material collected at the 2001 collection event in Newberg was Latex Paint. The collection of this non-hazardous material at the HHW events is very expensive, accounting for almost \$5,000 or 30% of the event expenses.

Metro Regional Services in Portland, has developed a latex paint recycling service, located at the Metro South Transfer Station in Oregon City, which is part of their HHW program. Metro then sells the recycled paint, or donates it to charitable groups. Metro has developed agreements with several surrounding communities to accept their latex paint for a fee.

In October of 2003 the County working with both NCS and WOW has developed a latex paint recycling program. Under the arrangement the two waste haulers would periodically collect latex paint at their facilities, but at a minimum of once per month. As part of the agreement Metro would provide storage containers for the paint. The latex paint would then be transported to Metro's paint recycling facility for processing and resale. The County would pay the transportation cost and a small to Metro for handling the material. The County is entering this

Household Hazardous Waste

program as a pilot study to determine how effective it will be. However, because it has the potential to significantly impact the volume handled at HHW collection events this program could reduce cost on whatever alternative collection program the County should choose.

6.6 NEEDS

Yamhill County generated 128,043 tons of solid waste in 2001. Assuming that HHW generation is equal to the national generation rate, Yamhill County residents generated 1,280 tons of HHW in 2001. Based on the collection event summary in Table 7-2, 36.7 tons of HHW were collected and properly disposed of during 2001. That means that approximately 1,240 tons of HHW may not have been disposed of properly in the county (this does not account for any HHW that was disposed of at the Metro HHW collection facilities).

HHW poses challenges to human health and to the environment although it is a small portion of the total waste stream. It is important to manage this material in a responsible manner, to reduce the impacts of these materials. By offering collection methods for residents to easily and properly dispose of HHW, the likelihood for improper disposal is reduced. The improper disposal of HHW poses certain risks to the environment, including the use of storm and sanitary sewers, municipal solid waste streams, illegal dumping, on-site burial and incineration.

The county has successfully conducted several HHW collection events in past years. These events have been conducted with the support of state funds. Since state funding of these collection events is ending, the county needs to make a decision whether to continue collection events or adopt other methods for collecting HHW and CESQG materials. In addition to evaluating options and determining a course of action, a stable method of funding for the program must be established.

As shown in past events, the level of participation in such collection events was related to the level of promotion and advertising supporting the program. Therefore, it is apparent that a promotion program should be a key ingredient to any of the preferred programs.

Another factor is education. The policies developed by the county to manage these wastes should include an education program specifically designed to encourage the reduction and prevention of HHW. It is inherently more cost effective to educate households and businesses on the use of alternative products that may not contain toxic or hazardous materials. The cost to manage and dispose of HHW is significant and ranges between \$70-\$100 per participant per event. It is less expensive to educate the public on the available options and alternatives and avoid the costs of managing HHW after it enters the waste stream.

Yamhill County may consider several alternatives for the collection of HHW as part of its Solid Waste Management Plan. Each alternative may review primary policy issues that include:

- Promotion and education for alternatives to HHW use
- Regular (and supplemental limited) collection of certain HHW

Household Hazardous Waste

- Facility ownership and operation
- Facility and event locations
- Purchase or lease of a mobile HHW collection vehicle
- Funding options

Based on survey results and feedback from participants, there is strong support for providing a means to collect and safely manage HHW and CESQG wastes. With state funding for collection events expiring and with other programs and services competing for limited state resources it is important to evaluate opportunities and determine a strategy for continuing this service.

The following section discusses the options that can be considered for managing HHW and CESQG waste.

6.6.1 HHW Service Options

The county's HHW strategy may identify new services to manage HHW and CESQG wastes. This approach should allow the Yamhill County Solid Waste Department to continue its partnership with the franchised collection companies to better manage HHW. The county and its partners, WOW and NGS, may consider the several options for continuing to provide comprehensive HHW services. These comprehensive services must include alternatives to three basic elements of the program.

1. Promotion / Education - Any HHW collection program must include a program aimed at educating the public about how to manage HHW materials. Yamhill County should support any service option that it selects for HHW and CESQG collection through an ongoing Prevention and Education program. This includes additional education for county residents regarding the reduction and prevention of HHW. Education will be an important element in a successful collection strategy for this service.
2. Collection methods – A convenient and cost effective means of collecting HHW and CESQG materials must be developed in order to provide citizens and businesses with alternatives to disposing materials inappropriately. Options may include:
 - a. Continue to conduct annual collection events and maintain existing or expand services such as:
 - Curbside collection and facility acceptance of used motor oil and antifreeze
 - Expand collection of lead-acid batteries at the MRF, transfer station and Riverbend Landfill
 - Paint recycling where the collection companies, in partnership with local retailers, recover unused oil-based and latex paints

Household Hazardous Waste

- b. Develop a permanent HHW facility in the county. The facility would provide:
 - A secure, protected location for waste identification, packing and temporary storage
 - A regular location for the county or contractor to provide collection events
 - An appointment-only service for small businesses and residents at the permanent facility between regular collection events
- c. Provide regular, mobile collection services throughout the county. This could include:
 - A Yamhill County owned mobile collection vehicle, or
 - A multi-county (Yamhill, Marion and Polk) shared vehicle and staff.
3. Develop stable funding for the program – Past HHW collection events have been supported by funding from the DEQ or by the county using franchise fees. An assessment of funding alternatives should be conducted and a stable mechanism established.

The value of this program is based on an understanding that it is more cost effective to educate households and businesses on the use of alternative products that may not contain toxic or hazardous materials. Also, the education materials informing the public about these products provides another form of advertising for the HHW program, enhancing the success of the special collection events.

6.7 MANAGEMENT ALTERNATIVES FOR HHW /CESQG WASTE

6.7.1 Management of HHW Program

The Yamhill County Solid Waste Department or its franchised collection companies should provide management and oversight of the HHW program. Program budgeting, contracting and reporting to DEQ would be the responsibility of Yamhill County. Basic management responsibilities include the following five categories:

- Program Coordination Responsibilities to schedule events and facility service, manage information, evaluate the program and prepare the annual report.
- Financial Responsibilities to recommend an annual budget, review contractor performance and payment, and manage information.
- Staffing Responsibilities to develop job descriptions, hire and train personnel, manage schedule requirements, and coordinate with contractor services.
- Facility Responsibilities to conduct audits, purchase equipment and supplies, provide maintenance, and ensure permit compliance.
- Waste Management Responsibilities to establish waste protocols and inspection procedures, review disposal facilities, and manage contracts for TSDF.

Household Hazardous Waste

In the past the YCS has been responsible for planning HHW collection events. They have managed to implement these events within the current resources. Any commitment to continue regular collection events would require appropriate resources be dedicated to the program to ensure its success. This commitment would include staff resources and funds needed to advertise and promote such events.

6.7.1.1 Promotion and Education

Under the current program the YCS provides the primary promotional and educational materials and services for the HHW program. Promotion and education efforts are primarily related to informing the public of HHW collection events. There has been no ongoing program for instructing residents on how to reduce the amount of HHW materials by purchasing alternative products. The collection companies however, inform residents and businesses to refrain from discarding certain materials such as sharps and other medical or certain hazardous materials.

The options for conducting a regular or ongoing education program are described.

County Education / Promotion

Under this approach YCS would develop an ongoing campaign to inform the public about the types of HHW materials contained in municipal solid waste and how to properly dispose of them. The program could be conducted as part of the regular waste reduction and recycling promotion program. It could involve at a minimum a brochure that can be distributed at facilities or through the collection companies themselves. It should also include an education element to instruct people about products that are non hazardous and that can be used instead of the common products that contain low amounts toxic materials.

A good example of educating the public on alternatives to using commercial cleaning products that may contain small amounts of toxic ingredients was recently completed by YCS. YCS published its first issue of a countywide waste reduction and recycling newsletter in the spring of 2003. It included one page devoted to “green clean home products” or home cleaning products that can be just as effective as commercial products that may otherwise contain small amounts of toxic chemicals. This type of education can be effective in not only educating consumers but also making them aware of the potential harm these products can cause if not properly handled.

The program would also include an advertising element that would inform citizens of collection events or other instructions on how to properly dispose of HHW materials. It should also include a component for informing businesses that generate CESQG waste on the proper handling methods for these waste materials.

The cost to implement and carry out an ongoing HHW and CESQG promotion and education program will vary. However, it is reasonable to budget a minimum of \$10,000 annually to remind people of the types of HHW materials that are contained in certain products and to be responsible for properly disposing of these materials. The budget for advertising HHW collection

Household Hazardous Waste

programs will vary depending on which collection alternative is selected by the County and service providers. However, as demonstrated from past events the success of the collection events has been related to the amount of money spent on advertising. The County should place sufficient budget to promote the collection program selected.

Collection Companies – Promotion /Education

The County could require that collection companies adopt a permanent promotion and education program as part of their ongoing recycling campaigns. Under this approach both NGS and WOW would develop a program that would be agreed to by the County and cities. As part of their recycling literature they would produce a brochure or materials to inform residents and businesses about HHW or CESQG wastes. The program could be similar to the program discussed above.

Since franchised collection companies are responsible for minimizing the risk of exposure to hazardous waste it would seem an appropriate approach to have them inform customers of which materials can be harmful. And, although many HHW materials pose little risk if properly stored in containers, it would be a natural extension of their business. The program would need to be coordinated with the County but would become part of their franchise services.

6.7.2 Collection Alternatives

A key element of any HHW program is providing a convenient means of collecting, storing and transporting these materials for disposal in an appropriate facility. The State of Oregon provides a statewide service to work with local jurisdictions and private industry to store, transport and dispose of these materials. Each jurisdiction must choose a method for collecting and handling both HHW and CESQG materials. A discussion of each of the alternatives is provided.

6.7.2.1 Continue Special Collection Events

Yamhill County has successfully conducted annual collection events at two locations over the past 10 years. The program consists of holding two collection events one in McMinnville and one in Newberg have been popular and effective. These collections events have traditionally been partially funded by DEQ but in recent years the program has been funded from franchise fees. The DEQ funding mechanism has dried up and a new source of funding must be provided if the program is to continue.

As discussed previously, the cost to provide these collection events has varied from as low as \$25,000 to as much as \$72,000 per year. The cost ranges from \$70 to \$100 per participant. Participation has varied greatly and is related to the amount of promotion and advertisement provided prior to each event.

The collection events provide a basic level of service to collecting HHW materials. By conducting two separate events at two locations a majority of the county's population is provided

Household Hazardous Waste

with a means to dispose of these materials. One drawback is that people who might need this service during the year must wait and store HHW or CESQG material until the collection event occurs. If they are not aware when the event will occur they might select a less desirable disposal method. Also, with only two events per year a household may not be available to make use of the service day that is selected.

6.7.2.2 Construct a Permanent HHW Facility

Yamhill County may consider siting a permanent HHW facility as part of its updated SWMP. This facility could be sited at one of the existing transfer stations or at the Riverbend landfill, or a separate site could be selected. Another aspect is whether the facility would be operated by the county or by a private party. This decision is secondary to that of building a permanent HHW facility to serve the county.

The significance of having a permanent facility, as compared to a greater frequency of one-day collection events or a shared mobile operation, is the commitment to more onsite functions and storage. These waste functions include acceptance, identification, packing and storage.

Waste acceptance includes a minimum number of collection events per year (often one per month) at the facility, as well as special use of the facility on an appointment-only basis by residents and small-quantity generators. Appointment-based use of the facility may be limited to special circumstances such as a home sale or a bulk delivery.

Waste identification is the screening and classification of materials into pre-determined categories. This allows the proper management of compatible and incompatible wastes. The difference is a function of reactivity, safety, end-user (TSD) requirements, economics, and available storage space.

Waste packing is based on three approaches for proper management:

- Loose packing allows wastes to remain in their original containers as they are packed together into totes or drums.
- Lab packing is the same as loose packing with the addition of absorbent material around the containers. This protects the containers during shipment and absorbs any spills.
- Bulking empties the original containers into a bulk liquid mixture of compatible wastes.

Waste storage provides the temporary capacity for containers prior to their delivery to a regional TSD facility. When considering building a permanent facility, one must account for the added cost to staff and operate it.

DEQ Permit Requirements for HHW Facilities

The facility will require a DEQ solid waste permit. The agency does not have specific permit requirements for household hazardous waste facilities. However, DEQ does have a General

Household Hazardous Waste

Guidance description for the design and operations of HHW collection and storage facilities. The county's development plan should refer to both permit requirements for the Transfer Station/Material Recovery Facility category and the HHW General Guidance.

The Guidance contains specific requirements for HHW facilities including siting, security, emergency equipment, structural requirements, exterior secondary containment, drum storage, waste identification, waste sorting and storage, waste packing, waste shipments, worker safety, facility inspections, spill prevention and emergency response, equipment, personnel training, and facility closure.

Building a permanent facility provides a high level of commitment to the program. It also provides flexibility as to how these services will be provided. For instance, once a permanent facility is constructed there are several different alternatives for providing the services. Some communities like Metro in Portland, which operates two HHW facilities, are open every day and available to the public each day. Other communities operate HHW facilities and restricting use to certain times.

In Marion County the new facility will be open only five days per month and users must call for an appointment. Marion County also intends to supplement its permanent operation with a mobile collection vehicle. This mobile unit is available to conduct special collection events throughout the county to better service outlying areas. Yamhill County can consider any number of alternatives if a permanent facility is constructed.

Residential Collection Events at a Permanent HHW Facility

Yamhill County may consider conducting a minimum number of collection events each year (one per month, one per week). These events, which require preparation and closure time, could be open to the public for 4-6 hours. Waste acceptance should begin in the morning to allow adequate daylight hours to complete waste sorting, packing and storage.

These HHW events are a service provided by the county. An important consideration is whether they should be limited to Yamhill County residents only. This decision is a function of funding. If the service is funded by county residents and businesses, it may be necessary limit its use.

Special Collection at the Permanent Facility

This facility could also be available for special collections on an appointment basis. This service is intended for small generators and special situations where there is an immediate and time-sensitive need for HHW collection. Examples of this include people who are selling their home and have an immediate need to dispose of large quantities of garden, garage and household chemicals, or a person who calls in with a large quantity of highly hazardous materials.

These appointment-based visits to the facility could be scheduled, whenever possible, to maximize staffing efficiencies and reduce the disruption of staff opening up the facility for a single user. This may include only taking appointment-based visits on one day of the week.

Household Hazardous Waste

Using this approach provides a more leveled cost of service. Unlike collection events where the amount of material delivered will vary greatly, a regular appointment based program somewhat regulates how much material will be collected and thus processed for storage, transport and disposal.

6.7.2.3 Mobile Collection Vehicle and Events

Yamhill County may consider a mobile collection vehicle for HHW. The vehicle should meet all requirements for the collection and transport of HHW, and the necessary support equipment, to events throughout the county. The appropriate vehicle should be a tractor-trailer (53 LF) system that is estimated to cost between \$35,000 and \$55,000. This does not include other support equipment such as forklifts. It should meet all federal Department of Transportation regulations and include systems for fire suppression, spill containment, power, ventilation and chemical resistance.

Using a mobile collection vehicle provides flexibility to conduct collection events at various locations at different times of year. A minimum service capacity standard might be a collection event for 300-400 households. After the initial capital to purchase the vehicle, the mobile collection program could be relatively cost effective. Collection events using the mobile unit should be arranged such that the people staffing the event, who are trained in handling these materials, can be scheduled in advance or even contracted for specific dates throughout the year.

Similar to the appointment program for permanent facilities, the amount of material will generally be limited to the area served by the mobile collection event. This helps to level the cost of the program. The one drawback is that there is less storage capacity. This means the HHW transportation contractor may have to make more frequent pickups, which may impact cost.

The cost to purchase a mobile unit and other support equipment might range from \$35,000 to as much as \$75,000. Therefore, to operate a County owned vehicle would be similar to holding collection events but would include the capital expenditure for the mobile unit, which could add about \$10,000 per year.

6.7.2.4 Mobile Collection Vehicle and Events – Shared Services

One option that might be available to Yamhill County is to use a mobile collection vehicle in conjunction with a neighboring county or counties. Under this alternative one community might purchase the mobile unit and provide basic staffing to operate the vehicle and the events. Any community wishing to use the service might contract for the use of the unit. They could also provide support services to needed to conduct the collection events.

This option may be more appealing to Yamhill County since Polk and Marion County have discussed this option and are continuing to explore implementing such a program. One scenario that has been discussed is for Polk County to purchase the mobile unit through a grant with DEQ.

Household Hazardous Waste

Marion County, which is in the process of building a permanent facility, would operate the unit. A cost for providing collection events throughout the two-county area would be established and each county would pay for the service.

The annual cost to participate in a shared mobile event could vary significantly depending on the frequency and number of participants per event. If shared with other communities the annual cost may be \$4,000 assuming each community uses the vehicle twice per year. This does not assume any DEQ grant money is used. Cost to set up the event, collect the HHW materials and transport them to a HHW processing facility may cost \$50 to \$60 per participant. Thus, assuming 1,200 participants per year the cost may range from \$65,000 to \$76,000 per year. Adding in \$10,000 for promotional materials and advertising the total cost may range from \$75,000 to almost \$90,000 per year. This approach may be available to Yamhill County.

Benefits of this approach are that Yamhill County could select the level of collection services it wishes. For, instance the County could decide to hold quarterly rather than semi-annual events each year. And, the county could select any part of the county it chooses to hold such events. This added flexibility is certainly advantage over other collection options. The cost would most likely be less than holding special collection events since the vehicle is equipped to handle both HHW and CESQG materials.

6.7.3 Evaluation of Collection Alternatives

Each of the collection alternatives discussed have certain advantages and disadvantages. For instance, if a permanent HHW facility is built it has the major advantage of providing a central facility that can be operated any number of days. The facility would make it possible for customers to drop off materials on a regular basis throughout the year. A central location would be desirable so that it will be convenient to a majority of residents and businesses. However, certain customers would certainly need to drive farther than others.

Collection events, on the other hand offer flexibility. They can be scheduled in advance and the service can be provided at different locations possibly making it more convenient to customers. In addition there are different costs associated with each alternative. Table 7.3 provides a comparison of the collection alternatives for collection of HHW and CESQG waste. It compares four alternatives discussed above. These are:

Alternate A

Conduct collection day events twice each year in McMinnville and Newberg to allow the county to control the increasing resident participation.

Alternate B

Construct a permanent facility in the McMinnville area this operates on a regular schedule and appointment-only basis.

Household Hazardous Waste

Alternate C

Purchase and operate a mobile HHW vehicle that only serves Yamhill County.

Alternate D

Provide mobile HHW service through a joint agreement with Marion and/or Polk County.

Household Hazardous Waste

**Table 6-4
Qualitative Evaluation of Alternatives for Yamhill County**

	Alt. A: Collection Events	Alt. B: Permanent Facility	Alt. C/D Mobile HHW Vehicle Collection Service
Major Advantages	<ul style="list-style-type: none"> No facility siting or construction requirements Easier to stage temporary events than a permanent facility Flexible – can serve different areas Incorporates promotion and education activities including brochures, advertising and school programs 	<ul style="list-style-type: none"> Provides more frequent opportunities for residents to safely dispose of HHW than events Allows for appointment only use for home sellers (a major targeted population) and as a method to control access and cost Partial funding available from DEQ (\$100,000) for facility construction Provides opportunity for HHW re-use Provides opportunity to serve CESQGs that may also lower per-pound HHW costs 	<ul style="list-style-type: none"> No facility siting or construction requirements Easier to stage events Flexibility to serve entire county May serve only Yamhill County May share multi-county service costs through agency agreement
Major Disadvantages	<ul style="list-style-type: none"> Difficult to control access (and thus costs) Not convenient; residents must wait for the next event No funding available from DEQ Does not serve home sellers, a significant source of HHW 	<ul style="list-style-type: none"> Fixed location may be inaccessible to some and accessible to others Requires permit from DEQ 	<ul style="list-style-type: none"> Vehicle and staff costs Depends on cooperation of other jurisdictions that may impact flexibility.
Cost	<ul style="list-style-type: none"> Cost vary per number of participants – Estimated to range from \$60,000 to \$110,000* 	<ul style="list-style-type: none"> \$100,000 - \$250,000 capital, various operations 	<ul style="list-style-type: none"> Similar to Alternative A-Collection Events Estimated to range from \$75,000 to \$110,000 for County owned to \$65,000 - \$100,000 for shared vehicle *

*Includes promotional program.

Household Hazardous Waste

One possible option for Yamhill County to consider is to work cooperatively with both Polk and Marion Counties regarding the purchase of a mobile collection unit. The capital cost to purchase a mobile unit would be shared and each community would pay for the operating cost.

Additionally, each County would have some flexibility to schedule collection events in their community. This would have the same advantages as conducting special collection events.

Yamhill County can continue to evaluate the paint recycling program in an effort to increase the amount of recycled material. It would also possibly decrease the cost of HHW events by reducing the amount of material collected at such events.

6.8 HHW /CESQG PROGRAM FUNDING OPTIONS

In order to institute a HHW and CESQG collection program the County needs to identify a stable source of funding. The alternatives described above ranged in cost from \$50,000 to as much as \$250,000 per year. The difference in cost depends on whether there is a permanent facility and how many days the facility is opened. If collection events are preferred it will vary depending on the number of events held each year.

In the past the program has been partially funded by grants from DEQ and/or paid for by the County from franchised fees or other collections. In 1998 a survey of customers was conducted. Although the survey was limited it had a fairly good response rate. It showed that people were supportive of having HHW collection events and they were willing to pay a fee for service.

The mechanisms that are available to the County for funding the HHW program are discussed.

6.8.1 Yamhill County Solid Waste Funds/Franchise Fees

The Solid Waste Fund consists of revenue from host community fees at the landfill and franchise fees for collection companies. The County currently collects approximately \$650,000 per year in fees. A portion of this Fund could be allocated to pay for HHW collection and disposal events as in past years.

To fund an ongoing HHW collection program would require a minimum of \$50,000 per year but most likely it will require \$100,000 annually. This would represent 15% of the total funds available for other County solid waste services. These same resources are needed to fund all programs including franchise administration including rate review, waste reduction and recycling programs and enforcement of illegal dumping. Therefore, these funds could be used to support certain elements of the program but would not be adequate to support an ongoing HHW and CESQG collection program.

It may be possible to increase franchise or host community fees to pay for the program. This would require renegotiating contracts with Riverbend Landfill and they in turn would need to pass cost along to customers. This may not be feasible. Also, using County fees has other limitations. Since 80% of the county's revenue is from host community fees from Riverbend

Household Hazardous Waste

Landfill, the amount of revenue could be impacted negatively, if waste disposed at the landfill would decrease or waste from outside the region were discontinued. For these reasons any use of County fees should be seen as an interim solution.

6.8.2 CESQG User Fees

One method for paying for the HHW collection program is to institute a fee for service. Under this program anyone dropping off HHW or CESQG materials would pay fee. The fee could be prorated based on the volume or level of toxicity of the waste. For instance, dropping off of oil-based paint might incur one fee compared with a customer dropping off flammable or toxic liquid that might pay another fee. Each product must be manifested in a safe manner but the flammable and toxic material may cost slightly more per unit.

In our research we have not located a facility that charges customers a service fee. Based on the past collection events conducted by the County actual cost of collection events ranged from \$70 to \$100 per vehicle. At this rate it is unlikely any one would subscribe to the service. Another alternative would be to charge a nominal fee per vehicle. Each customer could pay \$5 or \$10 to drop off materials. Based on the participation of past collection events this approach would generate between \$6,000 and \$12,000 annually. Therefore, adopting a user fee approach would require an additional source of revenue or it would need to be subsidized by other funds.

6.8.3 Add Services to Franchised Collection Rates

Both NGS and WOW offer a wide variety of services to customers. Each service has an associated fee for services, which is regulated by the County and by Cities. The recommended HHW collection program could be added to the current collection fees. Under this approach the County would work with collection companies and cities to establish a basic fee for the services.

For instance, each household that subscribes to service will be charged a fee as part of their collection rate. As suggested in the 1998 survey this fee could range from \$0.50 to \$0.75 per household per month. With 30,000 households in the County it would generate between \$180,000 and \$270,000 per year. This may be more than what is required for the program depending on which alternative is selected.

This amount of money would be sufficient to fund any of the collection alternatives discussed in the previous section. It would provide stable funds that are directly related to the services provided. A separate rate could be established for commercial customers for the CESQG waste materials.

One drawback to this approach would be that some households do not subscribe to collection services. These households would be subsidized by those paying for collection services. One solution is to issue coupons or obtain receipts from paying for collection services that are redeemable at HHW collection events or at a facility.

Household Hazardous Waste

6.8.4 Add Fee to Disposal Charges

The County could work with Riverbend Landfill to establish a fee or surcharge on waste disposed at the landfill to pay for the HHW and CESQG collection program. The rationale being that all residents and businesses use the landfill and it would provide a fair and equitable means of charging customers. For instance County disposes of about 70,000 tons of MSW at Riverbend.

To generate \$140,000 the landfill would need to charge about \$2.00 per ton for all waste delivered by the franchised collection companies and by those who haul their own waste. The franchised collection companies would still need to prorate this charge back to both residential and commercial customers. For instance, each household might be asked to pay \$0.25 per month, which would be \$3.00 per year. This amount would seem reasonable considering the feedback provided in the survey. The remaining amount would be generated from commercial waste.

Using the disposal rates does provide an equitable means to generate revenue for the HHW program assuming it is charged to Yamhill County waste only. It is also possible to consider that all waste delivered to the landfill pay for the HHW program. Under this arrangement the actual per ton charge could be between \$0.25 and \$0.35 per ton. Based on the fact that 400,000 tons of wastes are disposed of annually at Riverbend this arrangement would generate between \$80,000 and \$140,000 per year. The one drawback to this approach is that operators of Riverbend Landfill would need to adjust rates with many of their customers outside of Yamhill County.

6.8.5 Wastewater System Surcharges

Some communities have chosen to implement a fee using their sewer or water rates. King County, Washington partially funds its HHW and CESQG programs through surcharges on the wastewater bills. The rationale behind this approach is that reducing the improper disposal of HHW benefits wastewater treatment systems, and so users of these systems should help pay for proper treatment. Since most households do have water service most households are then paying for this service.

The fee charged would be similar to that used under the collection fees since the amount of the fee would not relate to the amount of water used. Therefore, the impacts would be similar to the alternative of adding this fee to collection rates.

6.8.6 DEQ Grants

In the past the state has offered grants to pay for HHW collection events. In recent years however, these funds have been cut from the state budget. Local governments have had to find other sources of revenue to pay for these events. DEQ does provide funds to build permanent facilities for HHW collection services. Both Marion and Columbia Counties have received \$80,000 to fund the construction of a permanent building. The state does not provide monies to fund operations.

Household Hazardous Waste

The grant amount is \$60,000 plus \$0.50 for each resident over 10,000, with a maximum of \$100,000. Yamhill County would currently qualify for up to \$100,000.

6.9 EVALUATION AND RECOMMENDATIONS

The current Yamhill County HHW program has relied on contractor provided collection events that have been held once every two years in two locations in the county. With such a long period between events, residents are unlikely to see HHW collection as a regular program; therefore the special events require a lot of advertising to make residents aware of upcoming dates.

Most residents are also not very likely to save HHW materials for two years for the next collection event, so some material from program participants is probably not being handled correctly. But historical use of the collection events shows that residents support and use the program, so the county should focus on making the program more convenient to increase participation. The county can also reduce the cost of the program by diverting non-hazardous materials such as latex paint from the HHW events.

The following recommendations provide Yamhill County with a set of actions for managing its HHW collection program.

Recommendation 6.1: The County, in cooperation with NGS and WOW, should proceed with the latex paint collection program and disposal agreement with Metro.

Rationale for Recommendation: This would be an effective method to possibly reduce costs of the HHW program by eliminating the disposal of a material that is not a hazardous waste. Since the latex paint would be collected separately and sent to Metro, the volume of latex paint that is collected at the HHW events would be reduced. Additionally, with this agreement in place, any latex paint that is collected at the events could then be separated and sent to Metro instead of being disposed of by the TSD contractor. It will also increase the overall waste recovery rate.

Implementation Timeline: Start in 2004 – Ongoing

Recommendation 6.2: The County should consider developing an agreement with Marion and/or Polk Counties for the purchase and use of a common mobile HHW collection vehicle.

Rationale for Recommendation: The mobile collection unit could be used to stage collection events in Newberg and McMinnville, as well as allowing the county to cost effectively offer HHW collection in more remote areas traditionally not served by collection events. Since the HHW collection events would typically occur on a three to six month schedule in any of the jurisdictions, the collection unit and staff for the events could very easily be shared.

Additionally, a common mobile HHW collection vehicle will allow the counties to jointly fund the program, instead of individually supporting their own programs.

Implementation Timeline: Startup by 2005 - Ongoing

Household Hazardous Waste

Recommendation 6.3: The County should continue to schedule collection events in the county at least twice per year until the mobile program is established.

Rationale for Recommendation: By establishing a regular collection schedule, even twice a year, residents will know when to look for the advertising of the event, and public awareness of the program will increase. Irregular schedules tend to lead to more confusion on the part of the public and less participation. Also, by holding the event on a regular basis, residents will become more educated about what materials are and are not considered HHW.

Implementation Timeline: Two years (2005)

Recommendation 6.4: The County should work with cities, Riverbend Landfill and franchised collection companies to establish an appropriate fee to support the latex paint and HHW collection programs. This new fee can be part of the collection rates or collected as part of the disposal rate.

Rationale for Recommendation: By adding a nominal amount to monthly collection bills, \$0.30 to \$0.60 per month, the county could generate \$110,000 to 220,000 per year to support the latex paint and HHW programs. A survey of residents showed that the majority is willing to support the HHW program, even if they were not currently using the program. Another benefit of adding a fee to monthly bills is that it would generate more awareness of the program and increase participation. The funds can either be collected through disposal tipping fees or by altering collection rates.

Implementation Timeline: One to two years (2004 –05)

Recommendation 6.5: The County should develop an ongoing promotion and education program for proper management of HHW and CESQG waste.

Rationale for Recommendation: The County and service providers have already developed a formal promotion and education program for waste reduction and recycling services. Additionally, the County has developed information that has been distributed to educate households on alternatives to using products that may contain low amounts of toxic ingredients. A minimal amount of funds should be budgeted to support this effort. These monies can either be funding from current resources or be part of developing a permanent funding source for the collection program. However, it is important that the County ensure the message is delivered on a consistent basis.

Implementation Timeline: Ongoing