

Introduction and Background



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The Local Hazardous Waste Management Program in King County (Program) was established in 1990 in response to a Washington State requirement that local jurisdictions develop plans for managing hazardous wastes generated by residents and in small quantities by businesses and institutions.¹ Local jurisdictions within King County collaborated to develop a regional hazardous waste plan that was adopted by King County and all the cities within King County in 1990.² The Program has been operating since 1991 to address hazardous materials and to protect the public and the environment from their effects.

1.1. The Intent of This Plan Update

This document updates the original 1990 Final Plan for the Local Hazardous Waste Management Program and the Program's 1997 Plan Update.³ It builds on the components of those two documents and extends planning for the Program forward, taking advantage of nearly twenty years' experience addressing residential household hazardous waste (HHW) and hazardous wastes generated in small volumes by non-residential entities like businesses, schools, governments and other conditionally exempt small quantity generators (SQGs).

Realizing that it cannot succeed by trying to collect all hazardous waste "at the end of the pipe," that is, after it has been generated, the Program has revised its approach to managing hazardous waste. Hazardous chemicals, materials and components of products must be addressed, and hopefully eliminated, in the product's design and manufacturing stages, before the product becomes a waste. For this reason, some of the Program's focus has shifted "upstream," that is, to the design and manufacturing stages of the product's life, rather than focusing exclusively on end-of-life waste streams. The Plan Update documents these and other changes that have been made in the Program's philosophy and services since 1997 and describes future plans.

1.2. Rationale for a Plan Update

The Program is nearly twenty years old, and the last Plan Update was completed in 1997. Since then, changes have occurred in the populations served, the Program's goals, the nature of hazardous products and wastes, and the methods used to address them.

1 Revised Code of Washington (RCW) 70.105.220.

2 Solid Waste Interlocal Forum, *Local Hazardous Waste Management Plan for Seattle-King County: Final Plan and Environmental Impact Statement for the Management of Small Quantities of Hazardous Waste in the Seattle-King County Region & Appendices A & B*, (Seattle: LHWMP, November 1990). Cited hereafter as *1990 Final Plan*.

3 Local Hazardous Waste Management Program in King County, *Local Hazardous Waste Management Plan for King County: Final Plan*, (Seattle: LHWMP, May 1997). Cited hereafter as *1997 Plan Update*.

King County's significant growth and shifts in population have created inequities in hazardous wastes collection services, particularly in south and northeast King County. In addition, the Program must consider increasing services to the most vulnerable segments of the population, including children, infants and youth, pregnant women, and women of childbearing age. Historically underserved groups, such as the homebound, apartment dwellers, immigrant communities and those who use English as a second language, also need service. And finally, the Program must consider ways to better serve small businesses through the acceptance policies of collection facilities and services.

The Program's Plan should align more fully with the Washington State Department of Ecology's (Ecology) Beyond Waste Plan, the state's dual Hazardous Waste Management Plan and Solid Waste Management Plan.⁴ The state's plan suggests working 'upstream' in the manufacturing cycle to reduce the toxicity of products. It also proposes reducing public and environmental exposures to toxic materials, specifically the exposure of vulnerable and historically underserved populations. In addition, Ecology recommends that local programs update their plans every five years.

The hazardous wastes, materials and products addressed by the Program are becoming more numerous and complex. New residential products and business components are introduced into the market place and manufacturing arena every day. Reformulations of existing products and chemicals, new combinations of chemicals, and the renaming and re-branding of products and chemicals take place constantly. And finally, new data about the toxicity of products and chemicals become available on an ongoing basis. For these reasons, programs that address hazardous wastes must be dynamic and responsive. Methods used to understand the properties of materials, as well as the populations that use them, must improve over time. For example, providing information to undocumented workers who are fearful of government personnel requires innovative approaches. Addressing and overcoming these barriers improves the Program's communication skills and adds to its repertoire for addressing challenges in other areas and with other segments of the population.

In summary, this 2010 Plan Update will capture what has been learned since the last Update and will describe the work that is currently under way. Most importantly, it will move the Program into the future with new ideas about how to best address chemical hazards and their impacts on human health and the environment.

4 Washington State Department of Ecology, *Beyond Waste: Summary of the Washington State Hazardous Waste Management Plan and Solid Waste Management Plan*, (Olympia: Washington Department of Ecology, November 2004 (publication number 04-07-022)). Cited hereafter as the *2004 Beyond Waste Plan*. This plan and updated information may be found on-line at www.ecy.wa.gov/beyondwaste

1.3. Program History, 1990-1997

1.3.1. 1990 Local Hazardous Waste Management Plan

The original Local Hazardous Waste Management Plan was prepared in the late 1980s to respond to the growing need to address household hazardous waste. Local elected officials and community leaders worked with the Washington State Legislature to develop legislation allowing local jurisdictions to develop moderate risk plans.⁵

During the 1980s, King County, the City of Seattle, the Municipality of Metropolitan Seattle (METRO), the Public Health Department and various suburban cities had worked together on various projects involving household and small business hazardous wastes. These included a series of single-day collection events, called Household Hazardous Waste Round-Ups, and a Waste Information Network that provided disposal and regulatory information to businesses.

The original Program Plan, adopted in November 1990, went into effect in 1991 as financing and organizational structures were developed. The original mission was "...to protect the environment and public health from the adverse effects of improper handling and disposal of HHW and SQG hazardous wastes."⁶

The Plan set nine goals focused on the following: reducing the generation of hazardous waste and its input to municipal waste streams; reducing worker exposure; promoting recycling; and addressing the issue comprehensively—that is, all areas of the county, all waste streams, and targeted audiences. Several of the goals addressed Program implementation. These emphasized education over enforcement and fostered an ethic of personal responsibility and flexibility in allowing for changes in the legal and planning environment. Finally, the goals emphasized the importance of involving all relevant parties in the development and implementation of the Plan and noted that implementation must recognize the unique capabilities and limitations of different governments.⁷

The original Plan proposed an ambitious increase in services to achieve large reductions in the quantities of hazardous waste disposed in the municipal waste stream within a twenty-year period. It proposed building an extensive infrastructure to collect HHW, and it called for technical assistance to small businesses. While many of the proposed services were implemented, the collection infrastructure did not develop as originally envisioned. It was determined to be unrealistic and unsustainable, as were the original targets and assumptions about the effectiveness of educating residents and businesses to stop generating hazardous waste.

⁵ RCW 70.105.220.

⁶ 1990 Final Plan, p. 1-4.

⁷ 1990 Final Plan, p. 1-6.

The 1990 Plan provided clear guidance about HHW collection services, public HHW education, ways to reduce generation of hazardous wastes, technical assistance to SQG businesses, SQG waste collection, and program evaluation. Those components provided the structure for implementation of the Plan throughout the 1990s.

1.3.2. Used Oil Collection Program

In 1991, local hazardous waste plans were required by state law to address used motor oil by July 1993.⁸ In 1991, the City of Seattle established, promoted and paid for oil collection tanks at ten retail locations. After analyzing used oil collection efforts, the Program began developing and promoting new collection sites in 1992. Promotional efforts included providing used oil collection containers to Wastemobile customers and running radio and television advertisements. By 1996, the number of sites had almost doubled, from 84 sites in 1993 to 155 sites. Between 1991 and the end of 1996, these sites collected more than 1,650,000 gallons of used motor oil.

1.3.3. 1997 Hazardous Waste Management Plan Update

In 1997, the Program conducted an assessment of its activities, reviewed the external situation regarding waste management, and looked at funding realities. While the Program mission didn't change, the nine original goals were consolidated to six general goals that articulated waste management priorities, in the following order: waste reduction; recycling; physical, chemical, and biological treatment; incineration; solidification or stabilization; and landfilling. The goals also urged continual improvements in the efficiency and effectiveness of the Program in accomplishing the Plan's mission.

The 1997 document stressed the importance of being responsive to the public, and it encouraged cooperation and coordination among government entities, citizens and businesses. Finally, the document affirmed the importance of fostering a sense of responsibility among those who produce, sell and use hazardous products.⁹

While the 1997 Plan Update did not make significant changes to the Program, it did consolidate services and provide a more robust framework for evaluation. The document notes: "No immediate, significant changes in service, program emphasis, administration, or funding are suggested or appear warranted. Consequently, the Plan recommends continuation of the wide range of HHW and SQG programs now conducted by the LHWMP – with a commitment to enhancing and improving the LHWMP each year."¹⁰

8 RCW 70.105.221 and 70.951.020.

9 1997 Plan Update, p. 4-7.

10 1997 Plan Update, p. 5-43.

Several recommendations for expanding existing activities and adding new ones were included in the 1997 Update. The Update recommended greater efforts to involve the private sector in HHW and SQG hazardous waste management. It also recommended researching and implementing strategies to increase the exchange—as opposed to the disposal—of usable hazardous household products. Other recommendations included refining policies governing HHW acceptance and management, identifying underserved groups, and taking actions to improve service use by these groups. Finally, the Update called for tracking, monitoring, evaluating, and reporting the progress of Program activities.¹¹

The 1997 Plan Update affirmed the Program's role in promoting used oil collection. It specified that Seattle Public Utilities and the Suburban Cities should "...operate sites for the collection of used motor oil to supplement private sector used oil collection sites where necessary to increase service and convenience to residents."¹² It noted that the City of Seattle received the largest quantities of used oil of any public collection site in the country.¹³

1.4. Program Changes, 1997 - 2009

Between 1997 and 2009, the Program conducted a number of studies to evaluate its direction and effectiveness. The studies looked at the Program's mission and goals and at the effectiveness and equity of the Program's collection and non-collection services. One of the studies was a Program-wide review of services and performance during the period 1990 - 2000. The study¹⁴ was conducted in 2000 - 2002 by the newly-created Office of the Program Administrator and resulted in programmatic and organizational changes.

Since 2002 the Program Administrator and senior staff have assessed individual projects and have reconfigured or eliminated some of them, when appropriate. Changes have been influenced by changing demographics, evaluation results, field experience, changes in scientific knowledge, and the direction set by the Washington State Beyond Waste Plan.¹⁵ These changes are reflected in refinements of the Program's goals and strategic direction, as well as in adjustments to Program services.

11 1997 Plan Update, pp. 5-43-5-44.

12 Household Hazardous Waste Recommendation 13, 1997 Plan Update, p. 5-11.

13 1997 Plan Update, page 5-11.

14 Ken Armstrong and Liz Tennant, *Local Hazardous Waste Management Program in King County Component Review 1991-2000*, (Seattle: LHWMP, August, 2002).

15 See Ecology's 2004 *Beyond Waste Plan* at www.ecy.wa.gov/beyondwaste for additional information about the direction set for reducing small volume toxics.

1.4.1. 2001 Strategic Planning Process

A 2001 strategic planning process resulted in a refined mission statement and goals, a new vision statement, and new guiding principles. The mission of the Program was rephrased to be more specific and moved from a focus on the improper handling and disposal of HHW and SQG wastes, to addressing the use, storage and disposal of hazardous materials.¹⁶

The six Program Goals developed in 1997 were refined in 2001 to articulate reductions hoped for in the following areas: hazardous chemical content of products; hazardous chemical use by residents and businesses; human and environmental exposure to the most problematic chemicals; and exposure of the most vulnerable groups to hazardous chemicals. Goals also focused on increasing partnerships with businesses, communities, non-governmental organizations (NGO's) and volunteers, and to providing optimal customer service.¹⁷ A new vision statement aspired to have "citizens, businesses and government demand, use, and produce products that are the least harmful to human health and the environment."¹⁸

A new set of guiding principles¹⁹ encouraged the Program to be a regional leader; foster an ethic of responsibility; provide equitable services, particularly to vulnerable and disadvantaged communities; and communicate in ways that would be accessible to all segments of the population.

The guiding principles also suggested that the Program use emerging technologies; focus on established priorities while being adaptive to community values, environmental and health indicators, and political priorities; be responsive and accountable to ratepayers;²⁰ use resources only for Program activities; and maintain a spirit of cooperation among Program Partners. The guiding principles emphasized on-going evaluation of the Program's performance, staff development, Program operating efficiency, and promotion of partnerships among government entities, NGOs, businesses and residents. Finally, the guiding principles urged the Program to work 'upstream' and to follow the hazardous waste management hierarchy, thus reducing the need to incinerate and landfill hazardous wastes.

1.4.2. 2006 Strategic Planning Process

A Program-wide strategic planning effort in 2006 refined the Program's vision, mission and goals and shifted the Program's emphasis to a broad spectrum of issues related to household and business hazardous products and wastes. The new approach emphasized the importance of shifting resources

16 Management Coordination Committee, Local Hazardous Waste Management Program in King County, *Vision and Mission Statements, Guiding Principles and Strategic Goals*, adopted October 16, 2001; cited hereafter as *2001 Vision, Mission and Strategic Goals*. See the Mission Statement.

17 *2001 Vision, Mission and Strategic Goals*, Goals 4 and 6.

18 *2001 Vision, Mission and Strategic Goals*. See the updated Vision Statement.

19 *2001 Vision, Mission and Strategic Goals*. See the new Guiding Principles.

20 The Program's rates and ratepayers are described in Chapter 5 of this Plan Update.

from 'end of pipe' hazardous waste management to preventing pollution 'upstream,' at the source. One example would be addressing hazardous materials at the production stage, rather than at end-of-life wastes.²¹

The Program's six strategic goals were revised to more clearly reflect the focus on working 'upstream' to reduce the production of hazardous materials and products, facilitate the proper management of hazardous wastes, and be accountable to the public.²² The vision statement was modified to reflect King County's aspiration to be the cleanest region in the country – one free of hazardous chemical exposure.²³

The 2006 strategic planning process also prioritized materials, environmental areas, and vulnerable and historically-underserved populations. Multiple methods were used to prioritize hazardous materials, and these resulted in the Program's commitment to focus on the following: bisphenol-A, particularly in infant and baby products; lead; mercury; PBDEs (commonly known as flame retardants); pesticides; pharmaceuticals; and high-risk solvents.

The Program identified the contamination of ground and surface waters as critical environmental issues and prioritized wellhead protection zones, aquifer recharge areas, and non-residential (small business, or SQG) operations with onsite sewage treatment systems as high priority areas. To address storm and surface water, the Program focused on flood hazard zones.

Finally, the Program identified very young children (prenatal to age six), pregnant women, and women of childbearing age as particularly vulnerable populations and decided to increase services to residents of government-subsidized housing facilities, new immigrants, and businesses with a high percentage of English-as-a-second-language workers.

1.5. Collection Services, 1997 - 2009

In 1997, the Program had two permanent household hazardous waste collection facilities serving Seattle and nearby residents and a mobile collection facility, called the Wastemobile, that traveled throughout King County to serve residents of suburban cities and unincorporated areas. Suburban cities also held special events to collect specific hazardous wastes and promoted private sector recycling of targeted wastes.

21 The new emphasis is captured in the revised Mission Statement, which was formulated and approved by the Management Coordination Committee in March, 2006.

22 The Strategic Goals were formulated and approved by the Management Coordination Committee in March, 2006.

23 The Vision Statement was approved by the Management Coordination Committee in March, 2006.

1.5.1. Expansion of Collection Services, 2000-2006

The 1997 Plan Update called for an examination of “HHW collection service levels, needs and preferences in the suburban cities and unincorporated King County, and... the feasibility of enhancing service where deficiencies are identified.”²⁴ It also called for examination of “the feasibility of assisting residents who are unable to deliver their HHW to a collection facility.”²⁵ An analysis of HHW Services, completed in 2000, found that residents living in south and east King County did not have the same access to collection services as did Seattle residents. It recommended operating a fixed hazardous waste collection facility at the Factoria transfer station, near Bellevue, on a pilot basis and providing enhanced Wastemobile service in South King County.²⁶ The Program also concluded that it should start to collect HHW from homebound residents.

The Program started to collect HHW from homebound residents in 2001 and began offering enhanced Wastemobile service through pilot projects in Federal Way and Kent. The Program established a new HHW collection facility at the Factoria Transfer Station in late 2002 and made efforts to find the most efficient Wastemobile service for residents of Federal Way and Kent.²⁷ By 2006, the Factoria facility proved so popular that services were expanded from four to six days per week.

1.5.2. Collection Services, 2006-2009

The 2006 Strategic Planning process called for an assessment of HHW collection services and a projection of the region’s future needs.²⁸ A 2007-08 study evaluated the amount and type of collection services (fixed, mobile and homebound), ways to increase HHW collection in multi-family residences, and whether to operate collection services on a pilot basis in low-income and ethnic communities in Seattle and King County.²⁹ The study concluded that residents of south King County lacked equal access to the Program’s collection services and recommended offering Wastemobile collection service three days a week at the Auburn SuperMall on a two-year pilot basis. Bimonthly collection service (three days per week) began at the Auburn SuperMall in July 2009.³⁰

²⁴ 1997 Plan Update, pp. 5-13.

²⁵ 1997 Plan Update, pp. 5-16 and 5-17.

²⁶ Local Hazardous Waste Management Program in King County, Memo from Phase II Household Hazardous Waste Service Level Study Group, to The Management Coordinating Committee, subject: “Preliminary Findings and Recommendations Regarding Adjustments to Household Hazardous [Waste] Collection Services,” July 3, 2000, (Seattle, WA: LHWMP, July 2000).

²⁷ King County Solid Waste Division, *Evaluation of Service Level Enhancements in South King County*, February 2004, describes and assesses these efforts.

²⁸ Household Hazardous Waste (HHW) is hazardous waste that is generated by individuals or household, rather than by businesses or institutions. Many consumer products contain hazardous materials and must be disposed of as HHW.

²⁹ The Work Group’s findings and recommendations can be found in Liz Tennant et. al., *2007-2008 Household Hazardous Waste Service Level Report* (Seattle, WA: LHWMP, February, 2010), contained in Appendix D of this Plan Update.

³⁰ The Auburn SuperMall Wastemobile currently is open two full weekends per month, not every weekend. This is the only way that the Program could afford to offer the expanded services without a fee increase.

Other service changes have been made to increase customer service. These include longer hours at the Seattle collection facilities and other scheduling and acceptance policy changes, such as dropping the need for an appointment at one facility.

1.5.3. Latex Paint Collection

Historically, lead and mercury were added to latex paint to enhance its durability and performance. In 1977 the U.S. Environmental Protection Agency banned the addition of lead to paint; the addition of mercury was banned in 1992. After periodic testing of latex paint brought to HHW collection facilities, Public Health—Seattle & King County determined in 2006 that latex paint no longer designated as dangerous waste under WAC 173-303 and that solidified latex paint was acceptable for landfill disposal.³¹

In 2006, the Program decided to discontinue collecting latex paint at the HHW facilities based on evidence that it no longer designates as hazardous waste. The Program phased out acceptance of latex paint at HHW collection facilities during 2008 and early 2009. This decision significantly reduced Program waste disposal costs. Discontinuing the collection of latex paint also led to sharp decreases in customers and tonnage at the Wastemobile and the Factoria collection facility in 2008. As of mid-2009, there appeared to be less of an impact at the North and South Seattle HHW collection facilities.

1.5.4. SQG Waste Collection

During 2005, discussions were renewed about whether there was a need for more hazardous waste collection options for businesses that generate very small amounts of hazardous waste. This was driven by concerns that many businesses generate wastes in quantities too small to make commercial collection economically viable, and other affordable disposal options were limited. Also, other programs across the country provided SQG waste collection services, and there were concerns about whether our Program was providing enough services to businesses to justify the amount being charged to them. An SQG Disposal Study Work Group was formed in 2006 to address these concerns. The SQG Disposal Work Group concluded that there was a need to increase SQG disposal options and recommended a menu of strategies: accept SQG wastes at the HHW collection facilities on a pilot basis; promote product stewardship, especially for fluorescent lamps; and explore alternative approaches with private companies.³²

In early 2008, a one-year pilot project to accept SQG wastes was initiated at several HHW collection facilities. These facilities accepted SQG wastes in the same quantities, container sizes and waste types as for HHW customers. There was no user fee as long as the business completed a survey form. Enough data were gathered to conclude that the service was useful to businesses and should

31 Keiko Ii, *Latex Paint Waste Characterization*, (Seattle: Public Health – Seattle & King County, July 25, 2006).

32 Liz Tennant and Alexandra Thompson, *Small Quantity Generator Disposal Work Group Report* (Seattle, WA: LHWMP, April 2007), contained in Appendix E of this Plan Update.

continue. In late 2008, the SQG disposal pilot project was extended for another year and expanded to include the North Seattle HHW collection facility.

1.5.5. Used Motor Oil

Used motor oil is collected at a variety of locations including the HHW collection sites, the Wastemobile, repair shops, oil change businesses, and suburban city collection events. While the number of collection sites has fluctuated during the period 1997 - 2009, there are currently 86 sites. Consolidation in the auto supply sector has led to the closure of many collection sites, and an increasing number of residents use oil change businesses rather than changing oil themselves. The Program promotes the used oil collection sites through a printed brochure and on its Web site. Between 1997 and 2008, an estimated 3,632,363 gallons of used oil were collected through the private sector in King County.

1.6. Services for Vulnerable and Historically Underserved Groups

While continuing to provide its core services to the general public, the Program is working to prevent the exposure of vulnerable and historically underserved residents to hazardous materials and products. The Program also is working to prevent the production of particularly hazardous products, and, as described below, is working to provide better outreach to vulnerable and historically underserved groups.

1.6.1. Vulnerable Groups

Studies show that exposure to toxic substances poses a greater risk to children, particularly infants and young children. Pregnant women, and women of childbearing age, are also vulnerable. For this reason the Program focuses on products and substances that could affect these populations.

An assessment of chemical exposures and their associated health risks to young children in child care facilities was conducted in 2006. Visits to 74 child care centers and 122 family homes found potential exposures to insecticides, pesticides, soft vinyl toys likely to contain phthalates, art supplies with volatile organic compounds, and household cleaners.³³ As a result of the study, the Young Children and the Healthy Schools projects began in 2007, focusing on the risks to young children and on reducing children's exposure to mercury, pesticides, and other high-risk materials, particularly in child care facilities and in schools.

The "Rehab the Lab" school cleanout project resulted in the removal and disposal of more than 39 tons

³³ For additional details see *Final Report, Child Care Assessment Data Analysis* by Alice I. Chapman, P. E. (Seattle: Local Hazardous Waste Management Program in King County, December 2007, Publication No. SQG-Childcare-1-(12/07)).

of hazardous chemicals, including nearly four tons of high-risk chemicals, from over 300 schools.³⁴ This included the stabilization and removal of 93 pounds of potentially explosive chemicals from 44 schools.³⁵ Other states have developed programs based on this approach.³⁶ In addition to clean-out efforts, the Program has worked with school administrators, teachers, and maintenance staff at more than 250 schools to reduce their use of toxic and hazardous materials and to safely store, use, and dispose of the chemicals kept by the schools. The Healthy Schools project builds on these efforts.

1.6.2. Historically Underserved Groups

According to the 2000 U.S. Census, more than a quarter of King County's population is minority or foreign-born and about four percent of the County's residents do not speak English well or at all.³⁷ The population has grown increasingly diverse since 2000, with south King County growing most in population and diversity. The Program has devoted resources to understanding the needs of immigrant and other historically-underserved communities and is working to improve services to them.

The 1997 Plan Update called for identifying groups within the Program's service area "that may be underserved, or less likely to be participating in HHW programs."³⁸ Using data, reports, and interviews with community leaders from minority, low income, English as a second language and other underserved groups, the Program has been working to identify the socio-cultural factors—that is, the beliefs, practices, habits, norms, customs, and rituals, as well as ease of access to chemicals and other experiences in their countries of origin—that might be influencing behavior regarding HHW.

Mobilizing the participation of new communities and achieving behavior change within underserved groups requires long-term commitment. It means first addressing the issues the community considers important, and it often requires conducting outreach activities in non-traditional venues—shops, sporting events, and places of worship. Some multicultural audiences, especially those who departed their place of origin as refugees, do not trust the government. The Program's 1999 Underserved Populations Workgroup Report recommended expanding activities to improve outreach to underserved groups.³⁹

34 The Rehab the Lab project received the Washington Governor's Award for Pollution Prevention and Sustainability (2001), the "Outside the Box" Award from the Northwest Chapter of the North American Hazardous Materials Management Association (2003) and the U.S. Environmental Protection Agency's "Schools Chemical Cleanout Campaign Award (with the Federal Way School District (2007). Dave Waddell, Rehab the Lab Project Director, Personal communication, August 13, 2009.

35 Dave Waddell, personal communication, August 18, 2009.

36 The following states have asked for guidance or provided Rehab the Lab Web site resources as tools for their state's schools: Florida, Idaho, Iowa, Kansas, Massachusetts, Missouri, Montana, Nebraska, Oregon, Vermont, and Washington State (outside of King County). Dave Waddell, personal communication, August 13, 2009.

37 U.S. Census Bureau, "2000 Census data for King County, Washington, DP-2, Profile of Selected Social Characteristics."

38 1997 Plan Update, p. 5-16, Recommendation 17.

39 Local Hazardous Waste Management Program in King County, *Underserved Populations Workgroup Report*, (Seattle: LHWMP, 1999).

1.6.3. Environmental Justice Activities

The Program's "Environmental Justice- Pass It On" project provided indoor air quality, household hazardous waste, environmental justice, and energy and water conservation training to residents in southeast Seattle in 1999-2000. A community-based "train the trainer" approach was used, and participants were encouraged to share information with others in their communities. This project led to additional assessments of environmental justice needs.⁴⁰

During the period 2000 – 2006, the Program worked with community partners to identify the environmental health concerns of immigrant and refugee communities and to develop mechanisms for effectively providing information and services to them. An Environmental Justice needs assessment, conducted in the Vietnamese, Filipino, Samoan, Chinese, Somali, Ethiopian and Oromo communities, identified key environmental health concerns and helped the Program design and implement strategies to better address their needs. The needs assessment also strengthened relationships between the Program and these communities. For example, the Program sponsored a tour of Seattle's South Transfer Station and the adjoining Household Hazardous Waste collection facility for Chinese, Vietnamese, Samoan and Filipino residents and provided a tour of the Cedar River watershed for Samoan and Filipino community leaders.

In addition to conducting focus groups and surveys, the Project has partnered with a number of organizations including the International District Housing Alliance, White Center Jubilee Days, Pacifica, Refugee Women's Alliance, Community Coalition for Environmental Justice, Environmental Coalition of South Seattle, and others. These community-based partnerships were an integral part of the Program's environmental justice work, as reflected in the 2004 decision to change the project name from Environmental Justice Needs Assessment to Environmental Justice Network in Action "to reflect the network that we are trying to build and the actions that we wanted to see in communities having greater access to programs and services."⁴¹

Based on the Program's environmental justice work with underserved communities, the 2006 strategic planning process developed a new goal: "Reduce exposure of vulnerable and traditionally underserved populations to hazardous chemicals." A suite of projects was developed to implement this goal, and more staff and Program resources were allocated to achieving it. The Environmental Justice Network in Action, the Low Income Government Housing Project, the Nail Salon Project, and the Janitorial Project all address traditionally underserved workers and residents.⁴²

40 For additional details see Michael Davis et. al, *2002-2003 Environmental Justice Needs Assessment Project Report*, (Seattle: LHWMP, Publication Number LHWMP_ENVJustice_1, 2004).

41 Michael Davis et al., *Environmental Justice Network in Action 2006 Annual Report*, (Seattle: LHWMP, Publication Number LHWMP_ENVJUSTICE_3, 2007), page 2.

42 These projects are described in more detail in Chapter 7 of this Plan Update.

1.7. Communications and Web Site

The increased use of computers and the Internet since 1997 has significant implications for communications strategies. A 1998 survey found that 47.4 percent of King County households used computers to communicate,⁴³ and computer use is even more widespread now.

The Program first began offering Web-based information in 1997. A revised Web site was launched in 2005. Since that time the Program has provided a large amount of information on its Web site. In 2008, the Program hired a dedicated Web developer who has redesigned and updated the Program's Web site, making it readily searchable and adding more information. The new Web site, www.lhwmp.org, was launched in February 2010. The Web site strives to be user-friendly and easy to navigate. It provides a variety of information and publications for residents, businesses, schools and others to help reduce the use of toxic and hazardous materials and properly manage and dispose of them.

A variety of other outreach tools, such as trainings, classes, speakers, brochures, lesson plans, technical assistance visits and telephone hotlines, continue to be available to residents who do not use or have access to electronic communications.

1.8. Working 'Upstream'

During the period 1997 – 2005 the Program promoted private sector collection of selected waste streams, including motor oil and latex paint, and encouraged the private sector to offer safer products for consumer and commercial use. These efforts met with mixed success. For example, while the private sector has been willing to collect used motor oil, efforts to promote a take-back program for latex paint did not succeed.

The 2006 Strategic Plan recognized the importance of directing more resources towards preventing the use of hazardous materials in the manufacturing process and promoting "green chemistry" initiatives, as well as more protective policies. And the Plan explicitly acknowledged that product stewardship and producer responsibility systems were major components in the management of moderate risk waste.

1.9. Climate Change

Since the 1997 Plan Update was produced, and as the Program moved into the 21st century, a new global-scale threat emerged. That new threat is climate change. Significant scientific consensus

43 Published Reports: Washington State Survey Selected Findings/Percent of Households with Personal Computers., www.ofm.wa.gov/sps/1998/reports. Accessed Nov. 16, 2009 <www.ofm.wa.gov/sps/1998/reports/17pchaveit.pdf>

has been reached that the current, most significant drivers of that change are anthropogenic, or human-induced.⁴⁴ That consensus focuses on human contributions of greenhouse gasses (GHG) to the atmosphere. Those gasses include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphurhexafluoride (SF₆), as well as other exotic gasses.⁴⁵

While our Program's mission is to address hazardous chemicals and wastes, and is not focused on addressing greenhouse gasses directly, there is some overlap with issues related to the use and management of the fluorinated chemicals mentioned above. In addition, many aspects of product stewardship can address GHG emissions. We must be cognizant of the issue of climate change in terms of Program choices that might exacerbate or ameliorate that change.

Those choices might include an additional screening of the hazardous chemicals that we already address, to focus particular attention, for example, on those products that contain hydrofluorocarbons or perfluorocarbons. Source reduction through a wide variety of product stewardship actions can help to reduce greenhouse gas emissions. Changes in manufacturing processes to minimize material inputs and toxic, or otherwise hazardous, ingredients use less energy in procuring, transporting and manufacturing products, as well as in handling the wastes generated at the end of a product's life.⁴⁶ We may need to look at additional best management practices with regard to current use and storage of hazardous substances to help reduce GHG emissions. We may also need to rethink some of the ways we dispose of hazardous wastes, such as incineration, neutralization or other treatment methods, which may have negative impacts to the climate. Reduction in transportation of wastes by either minimizing the wastes generated or by evaluating more local management options may help to reduce GHG emissions. Finally, at a staff management level, we may need to consider our transportation impacts, including encouraging telecommuting, vehicle usage reduction and the use of virtual meetings and training sessions.

1.10. 2010 Plan Update Process

The current Plan Update began in fall 2008, following a process similar to that used for the 1997 Plan Update. The new Plan Update will follow a similar approval process through the Program's Management Coordinating Committee (MCC), the King County Board of Health, and The Washington Department of Ecology. Although Ecology has stated that "The MCC is therefore the entity that Ecology would consider the 'responsible party' for plan update," the Program considers Board of Health approval important because the Board is a multi-jurisdictional body representing the ratepayers who fund the Program as well as the political jurisdictions for which the Program works.

44 R.K. Pachauri and A. Reisinger (Eds.), *Climate Change 2007: Synthesis Report -- Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, (Geneva, Switzerland: IPCC, 2007).

45 Pachauri and Reisinger, 2007, Chapter 2.1 Emissions of long-lived GHGs.

46 Product Stewardship Institute, *Product Stewardship and Global Warming – A PSI Fact Sheet*, (Boston: PSI, 2008).

And because the Board of Health sets the fees that fund the Program, the Board's review of the Program's 2010 Plan Update allows it to review and evaluate the Program's work in relation to the sources and amounts of those fees.

Like the 1997 process, the current Plan Update has four phases: advertising the Plan Update and confirming the approval process; identifying the scope of the Plan Update; drafting the Plan Update document and soliciting public comments; and seeking review and approval of the Plan Update.

1.10.1. Advertising and Confirming the Update Process

A proposed approval process for the 2010 Plan Update was presented to organizations and entities that had specific interest in, were partners with, or had some level of jurisdiction over, the Program's work. These included:

<ul style="list-style-type: none"> • Municipal Solid Waste Management Advisory Committee 	<ul style="list-style-type: none"> • Municipal Water Pollution Abatement Advisory Committee 	<ul style="list-style-type: none"> • King County Unincorporated Area Councils
<ul style="list-style-type: none"> • commercial refuse haulers 	<ul style="list-style-type: none"> • Muckleshoot Indian Tribe 	<ul style="list-style-type: none"> • Snoqualmie Indian Tribe
<ul style="list-style-type: none"> • relevant nongovernmental organizations (NGOs) 	<ul style="list-style-type: none"> • King County Solid Waste Advisory Committee 	<ul style="list-style-type: none"> • local emergency planning committees (LEPCs)
<ul style="list-style-type: none"> • King County Solid Waste Division 	<ul style="list-style-type: none"> • King County Board of Health and their staff 	<ul style="list-style-type: none"> • King County Council and their staff
<ul style="list-style-type: none"> • Suburban City Recycling Coordinators 	<ul style="list-style-type: none"> • Seattle Solid Waste Advisory Committee 	<ul style="list-style-type: none"> • Seattle City Council and their staff
<ul style="list-style-type: none"> • City of Bellevue staff 	<ul style="list-style-type: none"> • Seattle Public Utilities 	<ul style="list-style-type: none"> • Seattle Drainage staff
<ul style="list-style-type: none"> • King County Water and Land Resources Division • Public Health - Seattle and King County 	<ul style="list-style-type: none"> • interested Sewer Districts • interested Suburban Cities • Seattle Drinking Water staff 	<ul style="list-style-type: none"> • Suburban Cities Association - Public Issues Committee • businesses organizations

The organizations and agencies consulted by the Program confirmed an approval process in which the proposed Plan Update would move from the MCC, to the Board of Health, to Ecology, and they introduced several additional issues for the Plan Update to address.

1.10.2. Identifying the Scope

Input concerning the scope of the proposed Plan Update was solicited from the organizations and agencies involved in commenting on the approval process, which are listed above, and from a Plan

Update page on the Program's Web site. In addition, the following efforts were made to solicit input from Program constituents: a workshop for Program Partner agencies and targeted service populations; focus groups with businesses; focus groups with underserved populations; and the analysis of survey data about the use of services by underserved populations.

The Plan Update page on the Program Web site provided an overview of the Program's structure, mission and funding sources and information about the Update process and scope definition. It also contained a draft outline of the Plan Update, a set of questions from the public about what should be included, and information on how to comment on the proposed scope and draft of the Update. Constituents could comment by e-mail, regular mail or by a dedicated phone comment line.

Issues proposed for the Plan Update document were presented at a workshop at the Renton Community Center in April 2009, and Program staff received input on these. Invitations to the workshop were e-mailed to more than 600 individuals, and more than 45 representatives attended the workshop.

Ideas generated from the workshop and from consultations with partner organizations were compiled and posted on the Web page. The 600 persons on the original invitee list were invited to review the document, and comments were accepted for over six weeks. The results of the consultations, public meeting and public comments were compiled into a draft table of contents for the Plan Update and presented to the MCC. The MCC approved the scope of work for the Plan Update in August 2009.

The Program made an effort to obtain input from its targeted service users, including small businesses and minority populations, through a series of focus groups, interviews and meetings with established minority service groups and coalitions. It also reviewed existing survey data on how they used our services. The results of those efforts are included in the Education and Outreach chapter of this document.

1.10.3. Draft Updates and Public Review

The Plan Update chapters were written by a number of Program staff and by specialized consultants, where needed. Material for some chapters was already available, while for other chapters new material was developed and research was done. The Draft Plan Update was released for public comment in December 2009. It was posted on the Plan Update Web page, advertised to the 600-person e-mail list, and publicized using other means. By the Plan's completion, comments received from the public will have been incorporated into the Plan Update document as appropriate, and a revised Plan Update document will have been submitted to the MCC for review and approval.

1.10.4. The Approval Process

The first step in the approval process is submittal to MCC for their review and approval of the draft Plan Update. By the Plan's completion, MCC changes will have been incorporated into an MCC-

approved draft, and that document will have been submitted to the Board of Health. Any Board changes will have been incorporated into a Board of Health-approved draft. That draft will have been submitted to Ecology for review and approval. If Ecology proposed changes, these will also have been incorporated into the Ecology-approved draft that will have become the final Plan Update.

Characteristics of the Planning Area



2

2. Characteristics of the Planning Area

This chapter describes the political, physical, demographic and economic characteristics of the Program's planning area and how these have changed since the 1997 Plan Update. It also describes the hazardous waste profile of King County, looking at both regulated and small volume hazardous waste generators.

2.1. Description of the Planning Area

The Local Hazardous Waste Management Program in King County (Program) is a multi-jurisdictional regional program in King County, Washington. The Program's planning area encompasses all of King County. The political jurisdictions served by the Program include: the City of Seattle, the unincorporated areas of King County, and the suburban cities¹ of Algona, Auburn, Beaux Arts Village, Bellevue, Black Diamond, Bothell, Burien, Carnation, Clyde Hill, Covington, Des Moines, Duvall, Enumclaw, Federal Way, Hunts Point, Issaquah, Kenmore, Kent, Kirkland, Lake Forest Park, Maple Valley, Medina, Mercer Island, Newcastle, Normandy Park, North Bend, Pacific, Redmond, Renton, Sammamish, SeaTac, Shoreline, Skykomish, Snoqualmie, Tukwila, Woodinville, and Yarrow Point. Our Program does not serve the town of Milton.² In addition to the County and Cities, our Program serves the Muckleshoot and the Snoqualmie Indian Tribes.

Our Program also serves local municipalities and special purpose districts that provide sewer services within and adjacent to King County. These include the following agencies which are served by King County Wastewater Treatment Division: Alderwood Water & Wastewater District, City of Brier Public Works, Cedar River Water & Sewer District, Coal Creek Utility District, Cross Valley Water District, Highlands Sewer District, Northeast Sammamish Sewer & Water District, Northshore Utility District, Olympic View Water and Sewer District, Ronald Wastewater District, Sammamish Plateau Water & Sewer District, Skyway Water and Sewer District, Soos Creek Water & Sewer District, Valley View Sewer District - formerly Val Vue Sewer District, Vashon Sewer District and Woodinville Water District. The Program also serves Lakehaven Utility District, Midway Sewer District and Southwest Suburban Sewer District, all of which have their own sewage treatment plants.

The Program's planning area can also be described in terms of the ratepayers that we serve. Those ratepayers include residential and non-residential customers throughout King County who pay solid waste and sewer utility fees, and customers that pay tipping fees at any landfill or transfer station in King County.³

1 The term "suburban city" is used here as defined by King County Board of Health Code 2.08.065, for any city that has entered into a solid waste interlocal agreement with King County.

2 The town of Milton is partially in South King County and partially in North Pierce County and has elected to participate in Pierce County's hazardous waste program.

3 Several sewer districts in south Snohomish County are part of King County's wastewater treatment system.

2.2. Physical Characteristics and Climate

King County is located in the Central Puget Sound region in the State of Washington. It is bounded by Puget Sound and Kitsap County to the west, Snohomish County to the north, the Cascade Mountain range and Chelan and Kittitas Counties to the east, and Pierce County to the south. The County covers 2,134 square miles or 1,365,760 acres.⁴

King County is geographically diverse. It extends from the Puget Sound lowlands in the west, to 8,000 feet in the Cascade Mountains to the east. The County's wide variety of land forms include saltwater coastline, river floodplains, plateaus, slopes and mountains, punctuated with lakes and salmon-bearing streams. Lake Washington, covering 35 square miles, and Lake Sammamish, covering eight square miles, are the two largest bodies of fresh water in the County. Rural Vashon Island in Puget Sound and urbanized Mercer Island in Lake Washington provide different island environments. The west coast of King County lies on Puget Sound, a large fiord-like saltwater bay, or estuary, which is fed by seasonal freshwater from the Cascade Mountain watershed.⁵

Retreating ice-age glaciers formed the north-south trending shapes of King County's lakes and hills, making east-west travel more difficult than north-south travel. Four major river basins exist in King County. They all contain endangered salmon runs. They also have steep-sided plateaus whose slopes are subject to landslides and erosion. These factors complicate the construction of homes, businesses and roads.

Current land uses in King County range from urban, with concentrated population and intensive commercial and industrial uses, to less densely populated suburbs, farms, commercial forests, woodlots, and state and national forests. Approximately 50 percent of the County, mostly in the mountainous eastern region, consists of federal or commercial forestland.

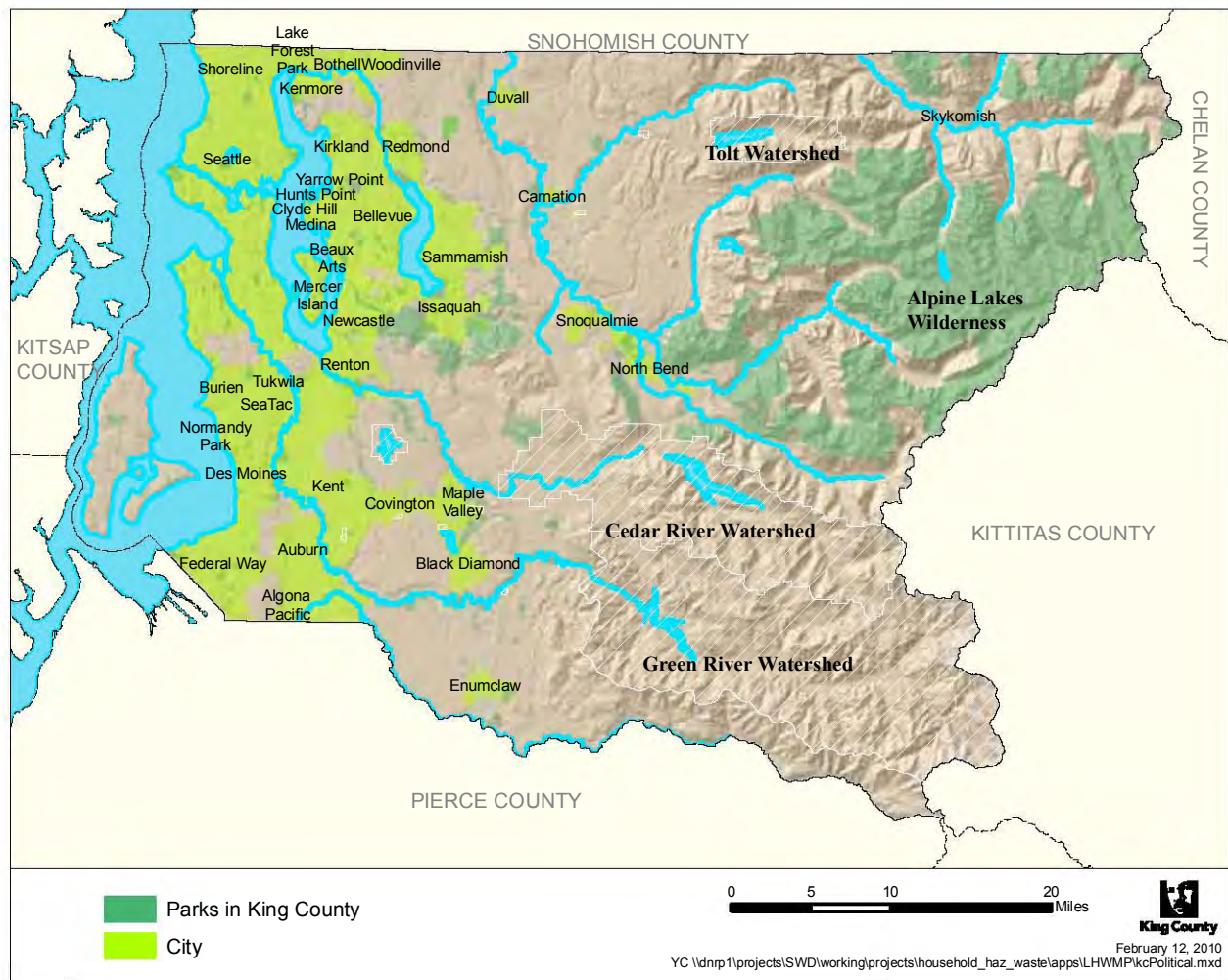
King County's climate historically has been wet, with an average annual precipitation of 35 to 50 inches in the lowlands, 75 inches in the foothills, and more than 100 inches in the Cascade Mountains. Precipitation typically is heavy in the winter and the spring, moderate in the fall, and light in the summer. These weather patterns can affect the release of hazardous materials and wastes into the environment. For example, non-point source contamination, or stormwater run-off, is a major source of toxic contamination in Puget Sound. This occurs when rainwater washes contaminants from yards, parking lots and roads, into the rivers and watercourses that drain into Puget Sound.⁶ During the past several years, major flooding events have also caused the release of hazardous materials into

4 King County, *The 2008 Annual Growth Report*, (Seattle: King County Office of Management and Budget, 2008), "Statistical Profile of King County." King County's annual growth reports will be cited hereafter as *Year X Annual Growth Report*. Descriptions provided in this Plan Update are based on demographic and economic data for King County.

5 The geographic description of the planning area is primarily drawn from the *2008 Annual Growth Report*.

6 Washington State's Puget Sound Partnership has concluded that stormwater poses a high risk to the health of Puget Sound by causing two major problems: 1) it transports a mixture of pollutants into the Sound and 2) during the winter months high stormwater flows can cause flooding, property damage and harm and render unusable fish and wildlife habitat. See www.psp.wa.gov/stormwater.php.

Figure 2-1: Geographic and Political Map of the Program's Planning Area



the environment, and created the need to collect and dispose of them. In 2008, there was extensive flooding along the Snoqualmie River in Northeast King County, and along the Green River in South King County.⁷

⁷ See archived news articles and other flood related information and resources on King County's web site, "Flooding Services and Information" *Flooding Services, King County*. November 2009. Accessed November 20, 2009, www.kingcounty.gov/environment/waterandland/flooding.aspx.

2.3. Population and Housing Trends

2.3.1. Population

Between 1997, when the Local Hazardous Waste Management Plan was last updated, and the end of 2008, King County added more than 237,800 residents. As of July 2008, the County had nearly 1.9 million people, making it the 14th most populous county in the nation. Nearly one third of the State's population lives in King County, and the County accounts for nearly a fourth of the State's growth during the 1990s, and a fifth of its growth so far this decade. King County's population has grown in density and diversity. When examined by sub-area, shown in Figure 2-2, it shows the following characteristics:

- The Seattle/Shoreline subarea continues to grow. With almost 600,000 residents, Seattle contains nearly a third of the County's population.
- South King County absorbed half of the County's population growth in the 1990s and continues to grow in population density and diversity. It now has almost 600,000 residents.
- The Eastside also grew rapidly in the 1990s and since 2000 has been the county's fastest growing subarea, now totaling more than 400,000 residents.

The population in rural areas also has continued to expand within the urban growth boundary limits, although at a relatively slow pace. In 2000, rural-designated areas had approximately 136,000 residents; since 2000 growth has continued at the pace of approximately 1,000 people per year, mostly in several rural cities.⁸

As both the total population and its density in King County have increased, new cities have formed, and previously unincorporated areas have been annexed. Four new cities were incorporated since the 1997 Plan Update was approved: Covington in 1997, Kenmore in 1998, Maple Valley in 1997, and Sammamish in 1999.⁹

As more people move to the cities, fewer people are living in unincorporated King County. In 1997, 432,084 King County residents, or 26 percent, lived in the unincorporated areas, while only 341,150, or 18 percent, live there now. See Table 2-1 for details.

⁸ *King County, 2008 Annual Growth Report*, pages 2-3.

⁹ The four new cities became part of the Local Hazardous Waste Management Program when they signed interlocal agreements with King County Solid Waste Division.

Figure 2-2: Map of King County Sub-Areas from 2008 Annual Growth Report

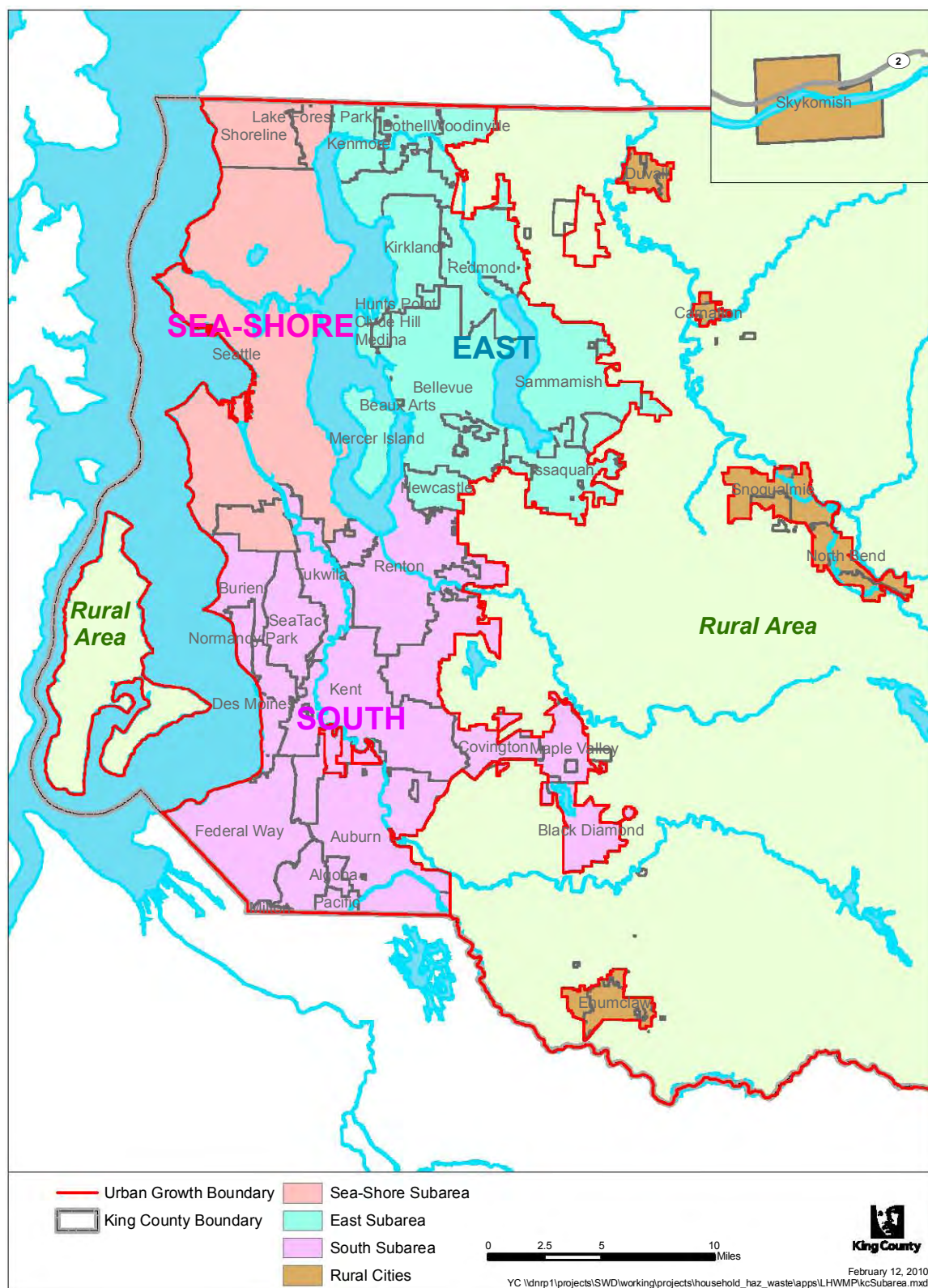


Table 2-1: Distribution of Population in the King County¹⁰

Population Location	1997	2000	2008
In Cities	1,214,116 74%	1,387,812 80%	1,543,050 82%
In Unincorporated Areas	432,084 26%	349,234 20%	341,150 18%
Total	1,646,200	1,737,034	1,884,200

King County's population has also become increasingly diverse. As of 2000, 27 percent of King County residents were persons of other than white/Caucasian ethnicity, including African American, Hispanic/Latino, American Indian/Alaska Native, Asian, Native Hawaiian/Pacific Islander, or multiple races. Data from the Census Bureau's 2006 American Community Survey confirm a continuing increase in diversity, showing 30 percent are now of non-white ethnicity. Trends in population growth among these populations in King County include the following:

- Hispanic/Latino population more than doubled between 1990 and 2000, and by 2006 had reached more than 131,000 people or 7 percent of the population;
- Asian population doubled to more than 239,000 people between 1990 and 2006.
- African-American population grew less rapidly, about 38 percent since 1990.
- Native American population remained the same at about 15,000, although another 17,000 persons reported themselves as partly Native American, and reported more than one race.

Whites/Caucasians are the slowest growing racial group, growing less than two percent between 1990 and 2000; and even less than that since 2000.

While Seattle has become somewhat more diverse in recent years, the dispersion of ethnic populations outside Seattle is the most significant trend. For example, the City of Bellevue has the highest percentage of Asian residents, at 22 percent, and almost half the residents of Tukwila are of non-white ethnicity. Overall, South King County has experienced the most dramatic increase in diversity, with other ethnic populations doubling and tripling in several cities. Burien, SeaTac and Federal Way have large Pacific Islander communities as well as African American, Hispanic/Latino and Asian populations. It appears that much of the increase in diversity is due to immigration.¹¹

Population is expected to continue to grow in total number of residents and households, density, and diversity. According to data from the Puget Sound Regional Council, King County is projected to have over 2 million residents, or 895,109 households, by 2020.¹² Past experience indicates that population

¹⁰ King County, *1998 Annual Growth Report* and *2008 Annual Growth Report*.

¹¹ King County, *2008 Annual Growth Report*, Chapter 1, page 3 and following pages.

¹² Detailed projections are described in *2007 Residential Service Level Study Demographic Analysis* by Liz Tennant, (Seattle: Local Hazardous Waste Management Program in King County, April, 27, 2007). Demographic data and projections can be found on the web sites for the Puget Sound Regional Council and for the Washington State Office of Financial Management.

growth is linked to economic growth. Three years of economic recession, between 2001 and 2005, “profoundly affected the demographics in King County” slowing population growth “to a trickle” as 80,000 jobs were lost, and unemployment grew.¹³ The rate of population growth increased when the economy began to improve in 2005. As the economy rebounded, population growth exceeded the originally projected rates. Current projections may be optimistic, since they pre-date the current, 2008 to 2009, economic slowdown.

2.3.2. Housing Types and Trends

According to the 2008 King County Annual Growth Report, in 2008 the Program planning area had 812,658 housing units,¹⁴ approximately 128,250 more than in 1997. This included 480,454 single-family homes, or 59 percent, 312,143 multifamily homes, or 38 percent, and 20,061 mobile homes and other living units, or nearly 3 percent.

Between 1997 and 2008, the countywide balance between single-family and multi-family households remained relatively constant. However, cities in King County vary widely in the amount of multi-family housing they have. For example, in 2008 more than half the housing stock in Seattle and Tukwila was multi-family, whereas Medina and Hunts Point had no multi-family housing.

Multi-family housing is expected to grow at a faster pace than single-family housing. As shown in Table 2-2, it is projected that by 2040 nearly 45 percent of King County residents will live in multi-family units. However, the impact is expected to vary by region.

Table 2-2: Projected Population and Percent of Households by Housing Type¹⁵

Year	Population	Percent of Households in Single-Family Units ^a	Percent of Household in Multi-family Units
2008	1,884,150	62 %	38 %
2020	2,075,426	59 %	41 %
2030	2,234,775	57 %	43 %
2040	2,401,521	55 %	45 %

a To align with original data sources “Single Family Units” includes mobile homes and other units.

¹³ King County, *2008 Annual Growth Report*, Chapter 1, pages 13 and following.

¹⁴ King County, *2008 Annual Growth Report*, p. 59.

¹⁵ Calculated from Puget Sound Regional Council’s 2006 small area forecast.

This continuing shift in population from single to multi-family housing has implications for Program service delivery as well as Program funding. The number of families living in multi-family housing units is growing at a faster pace than those living in single-family houses, in every part of King County. Multi-family households are expected to make up an increasingly large percentage of the Program's customer base, particularly in urban areas. They include condominium owners and apartment renters from all income levels.

2.4. Businesses, Jobs, and the Economy

At the end of 2007, approximately 59,345 businesses employed nearly 1.2 million people within King County. According to the 2008 King County Annual Growth Report, King County has over 40 percent of Washington State's jobs and payroll. That payroll was \$65 billion in 2005, more than that of several U.S. states.

The number and type of businesses and jobs has changed since 1997, when the Local Hazardous Waste Management Plan was last updated. Initially, in 1997 and 1998, the economy grew; from 1996 to 1998 over 105,000 new jobs were created.¹⁶ Growth continued in 1999 and 2000, but at a slower pace. Beginning in 2001, King County's economy abruptly slowed down. Contributing factors included:

- An earthquake measuring 6.8;
- Boeing moving their headquarters and the 757 fuselage assembly out of the Puget Sound region;
- Employee reductions in some dot com companies and the bankruptcies of many others;
- Increasing transportation congestion; and
- Significant increases in electric power rates.¹⁷

During the next three years, King County struggled with the worst recession it had experienced in over 30 years. Altogether, the King County economy lost 85,000 jobs, or seven percent of the year 2000 employment.¹⁸ During 2004, King County's economy began to recover. Since then, King County has gained back most of the lost jobs. Table 2-3 shows the change in number of businesses and total number of "covered" jobs between March 1997 and March 2007.

However, the jobs that were gained back differ in type from the jobs that were lost, and the mixture of jobs in King County is different in 2009 than it was in 1997. In general, manufacturing jobs have decreased, the service industry has expanded, and replacement jobs are lower paying than the lost jobs. According to the 2008 King County Annual Growth Report:

¹⁶ King County, *1999 Annual Growth Report*, Countywide trends, p. 43.

¹⁷ King County, *2001 Annual Growth Report*, p. 2.

¹⁸ King County, *2005 Annual Growth Report*, p.1.

- The aerospace industry was hit hard by the recession. As of mid-2008, aerospace employment stood at about 45,000 in King County, up from a low point in 2004, but still well below record employment levels.
- Manufacturing industries other than aerospace were also hit hard, currently employing 68,000 workers in King County, down 12 percent from 2001.
- Computer and electronic products were particularly hard-hit by the recession. However in software, Microsoft remains strong, and other parts of the high tech industry have fully recovered.¹⁹

Table 2-3: Comparison of Number of businesses and Covered Jobs in King County²⁰

Year	March 1997	March 2000	March 2007	Net Change from 1997
Number of businesses	58,887	62,526	59,345	+ 458
Number of jobs	1,009,578	1,152,737	1,155,974	+146,396

As of mid-2008, most non-manufacturing sectors were above 2001 levels. Employment in services, including educational, health and professional services, had grown above its 2001 level. However, the retail and finance sectors were still struggling to return to pre-recession employment levels.²¹

In 2010, King County and the Puget Sound region are faced with uncertainty about the economic future and its impact on growth. The area has been affected by the national economic crises in the financial and housing sectors. In addition to the impacts on local financial institutions, such as Washington Mutual, the slower economy is negatively impacting restaurants, retailers, and other small businesses. During the first half of 2009, banks stopped lending to businesses, both large and small; businesses laid-off large numbers of workers; and construction of new housing slowed sharply. As of September 2009, the unemployment rate was 8.8 percent.

At the end of third quarter, 2009, signs of recovery were beginning to appear. However, it is too early to know how significant or sustained the local impacts of this situation will be. Most economists agree that although the recession appears to be over, the recovery, particularly an increase in employment, will be long and slow.²² The following three tables show changes in the number and types of jobs over time, using the information available in King County's 2008 Annual Growth Report.

¹⁹ King County, *2008 Annual Growth Report*, page 1.

²⁰ King County, *1998 Annual Growth Report* and *2008 Annual Growth Report*.

²¹ King County, *2008 Annual Growth Report*, pages 1–2.

²² 2009 Highlights: Signs of Hope, *OSPPM Home Page/Performance Management Section/King County Annual Growth Report 2009 Highlights/2009*. Accessed November 20, 2009, www.kingcounty.gov/exec/strategy/PerformMgmt/KCGrowthReport/AGR%202009%20Highlights.aspx.

Table 2- 4

Nonagricultural Wage and Salary Workers in King County
Average Annual Employment in King County by Sector
2000 - 2007, Using "NAICS" Reporting Scheme *

INDUSTRY	2000	2001	2002	2003	2004	2005	2006	2007
GOODS PRODUCING	206,300	196,900	178,900	164,900	163,700	171,000	183,100	188,400
Natural Resource & Mining	1,300	1,300	1,100	1,200	800	700	700	700
Construction	66,900	63,700	58,900	57,300	59,500	63,000	70,100	74,800
Manufacturing	138,100	131,900	118,900	106,400	103,400	106,900	112,400	113,100
Durable Goods	105,000	101,600	90,500	79,000	76,600	80,400	85,200	86,300
Fabricated Metal Products	6,900	6,700	6,300	5,900	6,100	6,100	6,500	7,000
Computer & Electronic Products	13,300	12,500	11,300	9,600	9,100	9,400	9,500	9,500
Transportation Equipment	58,800	58,000	51,100	43,400	41,200	43,700	47,300	48,800
Aerospace Products & Parts	53,400	54,100	47,200	39,600	37,300	39,100	42,900	44,800
Non-Durable Goods	33,100	30,300	28,400	27,400	26,800	26,500	27,200	26,700
Food Products	12,300	11,400	10,400	10,500	10,600	10,600	11,000	11,200
SERVICES PRODUCING	985,100	973,400	948,100	942,700	956,600	973,300	993,600	1,011,700
Trade, Transportation & Utilities	242,300	236,600	225,400	221,000	222,700	222,700	224,300	224,200
Wholesale Trade	67,000	65,700	63,100	61,800	62,500	62,300	63,900	63,100
Retail Trade	122,500	119,600	115,000	113,400	113,700	114,700	113,600	113,600
Transportation, Warehousing, Utilities	52,800	51,400	47,400	45,800	46,500	45,700	46,900	47,500
Information	71,500	72,600	69,200	68,600	68,400	69,300	72,500	75,700
Software Publishers	31,400	34,500	34,800	35,700	37,800	40,000	43,100	45,800
Telecommunications	19,900	20,600	19,100	18,300	16,700	14,900	14,000	14,700
Financial Sector (Finance, Ins, Real Est.)	77,800	78,600	75,800	77,700	77,200	76,600	77,600	77,100
Professional & Business Services	187,800	174,700	162,800	161,400	163,700	173,300	182,200	190,400
Professional, Scientific & Tech Svs	90,300	89,900	81,300	79,100	77,700	82,100	86,400	92,800
Management of Companies	21,000	20,500	20,900	22,200	22,700	23,200	23,600	24,300
Admin. Support, Waste Management	76,500	64,400	60,600	60,100	63,300	67,900	72,200	73,300
Employment Services and Temp's	40,200	28,400	25,100	25,100	27,500	31,600	33,700	34,100
Educational & Health Services	108,700	111,300	113,400	113,000	118,100	122,800	124,700	127,700
Educ'l Services (private) & Soc Assist.	35,200	35,600	36,200	34,300	38,100	40,500	41,600	43,200
Hospitals, Health Care & Resid Care	73,400	75,700	77,200	78,700	80,000	82,700	83,200	84,400
Leisure & Hospitality	102,500	102,300	99,400	100,000	103,800	106,100	108,600	111,700
Food Service and Drinking Places	70,100	70,700	68,500	68,900	69,800	72,700	74,800	76,800
Other Services	39,900	39,300	40,000	40,100	40,500	41,500	41,800	41,700
Government & Education	154,600	158,000	162,100	160,900	162,200	161,200	161,900	163,300
Federal Government	22,000	21,400	21,900	22,700	22,500	21,900	21,400	21,300
State Government including Education	50,400	52,000	53,000	52,900	54,200	54,200	54,400	54,600
Local Government including Education	82,200	84,700	87,100	85,300	85,400	85,100	86,100	87,300
TOTAL NON-AGRICULTURAL EMPLOYMENT IN KING COUNTY	1,191,300	1,170,300	1,126,900	1,107,600	1,120,200	1,144,000	1,176,700	1,200,200

Note: *This table is reported under "NAICS", the new classification scheme for employment in the United States. NAICS (North American Industrial Coding System), replaced the Standard Industrial Code in 2000. Only NAICS coding will be available from now on. For earlier data trends of King County jobs using the SIC code, see next page. **This table reports on job locations in King County, not residents of King County.**

Table 2-5
Covered Employment by Sector, March 2007
King County and its Cities

Jurisdiction	Construction / Resources	WTU	Mfg.	Retail	Info./ Tech.	Health	Other Serv/ FIRE	Gov't / Educ.	COVERED JOBS
Algona	*	432	1,084	-	*	0	*	22	1,782
Auburn	3,597	5,350	8,987	5,672	1,230	2,692	6,052	5,135	38,715
Beaux Arts	*	-	0	0	*	0	*	2	41
Bellevue	6,914	8,496	5,573	13,136	29,377	13,043	39,957	7,852	124,347
Black Diamond	203	34	*	41	*	*	*	123	559
Bothell	783	676	763	765	3,589	1,021	2,423	1,301	11,321
Burien	566	476	142	1,829	556	3,405	2,912	1,796	11,682
Carnation	79	20	170	53	*	20	*	326	799
Clyde Hill	37	16	*	*	*	*	*	181	656
Covington	417	*	*	1,079	70	287	1,106	709	3,803
Des Moines	390	158	22	428	*	1,356	*	1,633	5,539
Duvall	110	24	69	128	*	88	*	245	1,102
Enumclaw	221	124	383	785	159	738	1,531	705	4,646
Federal Way	1,095	1,084	685	5,221	1,784	5,221	12,245	3,919	31,254
Hunts Point	0	*	0	0	-	0	*	5	37
Issaquah	824	1,213	1,879	3,358	1,590	1,709	7,230	1,406	19,209
Kenmore	653	374	51	385	127	289	1,781	658	4,319
Kent	4,906	15,544	16,429	5,726	2,598	3,439	11,136	5,199	64,977
Kirkland	3,192	1,482	1,328	3,974	5,087	2,999	9,463	4,874	32,398
Lake Forest Pk	240	36	25	210	87	186	517	222	1,523
Maple Valley	542	145	60	523	*	258	*	785	3,561
Medina	*	6	0	*	*	*	*	26	325
Mercer Island	628	158	16	568	*	733	*	905	6,761
Milton	12	10	*	0	*	*	*	0	30
Newcastle	75	122	*	204	117	92	*	205	1,724
Normandy Pk	71	8	0	88	11	173	210	166	727
North Bend	329	101	*	694	*	252	*	260	2,604
Pacific	218	773	69	*	* *		223	124	1,500
Redmond	3,976	3,788	9,672	4,257	*	3,173	*	2,181	85,775
Renton	2,622	5,638	15,512	5,082	2,956	3,123	9,341	7,363	51,637
Sammamish	429	261	8	495	*	408	*	1,346	5,054
SeaTac	274	13,888	609	817	442	970	8,333	3,413	28,746
Seattle	21,957	33,266	30,343	38,794	68,190	58,299	148,442	79,462	478,755
Shoreline	796	126	181	2,682	*	2,237	*	4,803	16,187
Skykomish	*	0	0	*	0	0	*	39	67
Snoqualmie	534	107	663	75	*	99	*	711	3,296
Tukwila	1,888	6,802	11,653	6,737	2,430	2,717	10,809	3,936	46,972
Woodinville	2,874	1,703	2,448	1,663	982	634	2,944	472	13,721
Yarrow Point	*	*	*	*	*	*	*	4	71
Cities Total	61,523	102,525	109,125	105,543	170,714	109,698	304,580	142,512	1,106,222
Uninc. King Co.	9,909	3,931	1,981	3,932	2,002	3,006	14,085	10,907	49,752
KING COUNTY	71,432	106,456	111,106	109,475	172,716	112,704	318,665	153,419	1,155,974

* Sector detail is suppressed for cities with few employers in order to protect confidentiality of the small number of firms in these cities.

SECTORS: Construction/Resources=Construction, Forestry, Fishing, Mining, Resources WTU = Wholesale, Trans., Utilities, Mfg. = Manufacturing;

Retail excludes restaurants Info./Tech. = Information, Technology Health = Health Services; Other Serv/FIRE = Services,

Finance, Insurance, Real Estate.

Note: Covered employment is the number of jobs covered by state unemployment insurance. Corporate officers, railroad employees, and sole proprietors are excluded.

Source: Washington State Employment Security Department, 2007, and Puget Sound Regional Council, 2008.

Table 2-6
Covered Employment
King County and its Cities, March 2000 - 2007

CITY	<u>2000</u>		<u>2002</u>		<u>2004</u>		<u>2006</u>		<u>2007</u>	
	Number of Firms	March Cov. Jobs	Number of Firms	March Cov. Jobs	Number of Firms	March Cov. Jobs	Number of Firms	March Cov. Jobs	Number of Firms	March Cov. Jobs
Algona	53	1,849	51	1,350	53	1,587	55	1,874	53	1,782
Auburn	1,669	38,393	1,538	36,026	1,581	35,332	1,714	37,543	1,793	38,715
Beaux Arts	9	17	8	20	12	19	10	53	7	41
Bellevue	6,407	120,170	5,468	111,594	5,586	109,537	5,929	118,632	6,200	124,347
Black Diamond	70	427	64	482	63	471	62	463	69	559
Bothell	560	10,320	458	11,017	498	10,297	509	11,015	565	11,321
Burien	1,060	12,149	912	12,107	908	11,810	918	11,854	945	11,682
Carnation	42	591	48	550	55	627	67	873	60	799
Clyde Hill	56	424	48	570	54	622	47	646	54	656
Covington	223	2,467	199	2,418	224	2,670	261	3,313	286	3,803
Des Moines	576	5,846	433	5,706	441	5,650	433	5,607	435	5,539
Duvall	117	902	105	994	110	970	129	1,016	147	1,102
Enumclaw	368	4,158	314	4,232	321	4,359	330	4,431	360	4,646
Federal Way	2,073	29,258	1,755	30,012	1,844	29,357	1,968	30,248	2,040	31,254
Hunts Point	23	35	13	26	15	22	16	36	15	37
Issaquah	807	14,611	740	15,506	816	16,614	946	18,668	1,034	19,209
Kenmore	465	4,396	393	4,280	388	4,124	411	4,217	431	4,319
Kent	2,930	59,920	2,674	58,845	2,640	58,922	2,850	63,382	3,020	64,977
Kirkland	2,215	38,827	1,899	31,593	1,986	31,334	2,034	32,050	2,076	32,398
Lake Forest Park	254	1,348	212	1,404	224	1,536	238	1,598	245	1,523
Maple Valley	239	2,741	203	2,517	237	2,778	279	3,318	302	3,561
Medina	76	357	48	304	67	360	57	283	70	325
Mercer Island	677	6,679	576	6,959	602	7,349	614	6,810	656	6,761
Milton	4	3	5	5	7	17	8	24	13	30
Newcastle	128	1,019	113	1,083	130	1,286	153	1,573	153	1,724
Normandy Park	118	568	90	541	96	570	111	733	107	727
North Bend	162	1,842	174	2,287	180	2,265	204	2,424	207	2,604
Pacific	85	885	78	877	74	759	76	1,597	78	1,500
Redmond	2,114	67,707	1,791	76,830	1,835	79,459	1,960	81,814	2,005	85,775
Renton	1,631	55,094	1,517	51,984	1,595	46,396	1,750	50,703	1,776	51,637
Sammamish	553	4,757	479	4,027	537	4,436	600	4,809	650	5,054
SeaTac	765	31,160	687	30,164	673	25,821	716	28,696	725	28,746
Seattle	26,326	510,221	21,570	479,241	22,056	462,137	22,730	470,698	23,489	478,755
Shoreline	1,224	14,793	1,054	14,684	1,121	16,673	1,156	16,360	1,193	16,187
Skykomish	13	106	13	78	13	52	12	56	13	67
Snoqualmie	72	1,104	105	1,452	113	2,048	143	2,298	179	3,296
Tukwila	1,584	47,824	1,391	35,624	1,362	41,034	1,481	44,185	1,503	46,972
Woodinville	782	13,457	746	13,459	764	13,166	782	13,791	803	13,721
Yarrow Point	18	49	16	54	24	70	24	80	25	71
Cities Total	56,548	1,106,476	47,988	1,050,902	49,305	1,032,535	51,783	1,077,771	53,782	1,106,222
Uninc. King Co.	5,978	46,261	4,774	43,509	5,020	44,792	5,203	47,426	5,563	49,752
KING COUNTY	62,526	1,152,737	52,762	1,094,411	54,325	1,077,327	56,986	1,125,187	59,345	1,155,974

Notes: Burien and Woodinville incorporated in 1993, Covington and Maple Valley in 1997, thus, do not have figures for this table. **Covered employment** is the number of jobs covered by state unemployment insurance. **Number of Firms** means firms with employees covered by unemployment insurance. Corporate officers, railroad employees, and sole proprietors are excluded. For detail by job sector, see Covered Jobs by sector, page 73.

Source: Washington State Employment Security Department, 2002 - 2005. Compiled by Puget Sound Regional Council, 2008.

2.5. Overall Hazardous Waste Profile

Hazardous waste is produced by residents and all sizes of businesses in King County.

Residents commonly use products containing chemicals that are hazardous to the environment and human health. These chemicals are found in many products used to clean and maintain houses, eliminate pests, care for yards, and maintain cars and boats. They are also used in hobbies such as jewelry making, art, photography, and furniture refinishing. Household hazardous products usually have one of the following words on the label: “poison,” “danger,” “caution” or “warning.”

Many businesses and other organizations also use hazardous products. These range from large-scale manufacturers, such as the Boeing Company, to smaller businesses such as auto repair shops. Most businesses use hazardous materials and generate hazardous wastes that may be corrosive, flammable, reactive and/or toxic to the environment and human health. Some businesses use hazardous materials routinely, while others use them only infrequently.

When hazardous products are no longer useful they become hazardous waste. With nearly 1.9 million people living in King County, and nearly 60,000 businesses and other institutions operating here, the potential cumulative amount of hazardous waste from all sources is large. When improperly used, stored or disposed of, these chemicals threaten human health and the environment. Moreover, exposure to some household products and business materials presents a risk even when they are used and disposed of properly.

As Figure 2-3 shows, hazardous waste generators fall into three general groups: large quantity generators (LQGs), medium quantity generators (MQGs), and small volume “moderate risk waste” generators. The Washington State Department of Ecology (Ecology) regulates business-generated hazardous waste under the State Dangerous Waste Regulations (WAC 173-303).²³ These regulations primarily affect LQGs and MQGs. Small quantity hazardous waste generators (SQGs) are conditionally exempt from the state regulations, provided that they manage their hazardous wastes properly. Our Program addresses the hazardous waste generated by households (HHW) and by small quantity generators (SQGs).

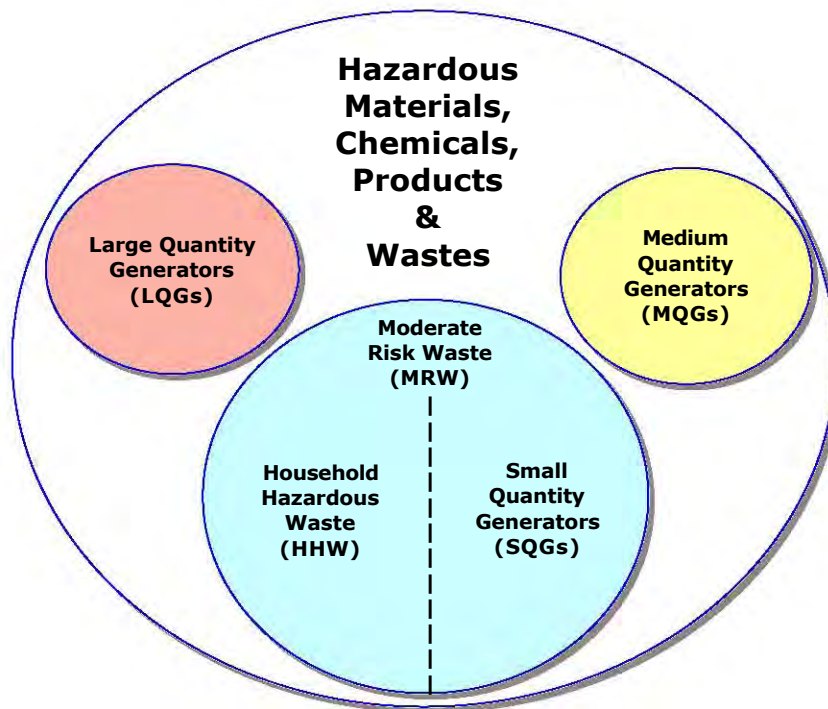


Laboratory chemicals

This section of the Plan Update describes what is generally known about hazardous waste generators, transporters, facilities and contaminated sites in King County.

²³ “Dangerous Waste” is a statutory term that is synonymous with the more common term “hazardous” waste.” In this document we use the term “hazardous waste” instead of “dangerous” waste.

Figure 2-3: Categories of Hazardous Waste Generators *



** Proportions in this figure are not representative of the total amounts of waste within or between each classification.*

2.5.1. Hazardous Waste Generators

The Washington State Department of Ecology (Ecology) refers to hazardous waste as “dangerous waste” and defines a dangerous waste generator as “any person by site, whose act or process produces dangerous waste or whose act first causes a dangerous waste to become subject to regulation.”²⁴ All businesses and institutions likely produce some amount of hazardous waste. Regardless of waste generation rates, all businesses and institutions are required to comply with Ecology’s Dangerous Waste regulations. Certain exclusions are allowed depending on the quantity of waste generated or stored on site. In general, there are fewer regulatory requirements for those that generate smaller amounts.²⁵

It is the responsibility of each business or institution to determine which of its wastes are hazardous, and how much hazardous waste it generates and stores. Ecology regulates large and medium quantity generators. Businesses that generate and store small quantities of hazardous waste are conditionally exempt from full state regulations, provided that they properly manage their hazardous

²⁴ See Washington State Dangerous Waste Regulations, Chapter 173-303-040 *Washington Administrative Code (WAC)*.

²⁵ The procedures for designating wastes and regulatory requirements are contained in the Chapter 173-303 WAC.



Auto worker removing a mercury switch from a car

wastes.²⁶ For example, conditionally exempt small quantity generators (SQGs) are not required to obtain a U.S. Environmental Protection Agency (EPA)/Washington State identification number, as long as they track, properly manage, and legally dispose of their hazardous wastes.

Given that 40 percent of the jobs in Washington State are located in King County, it is not surprising that King County has 39 percent of the State's regulated hazardous waste generators. According to data provided by Ecology, King County has 487 regulated

generators. The 214 businesses listed as large quantity generators (LQGs) each generate more than 2,200 pounds per month of a wide variety of hazardous wastes and/or more than 2.2 pounds per month of acutely hazardous or extremely toxic wastes. The 273 businesses listed as medium quantity generators (MQGs) each generate between 220 and 2,200 pounds per month of hazardous waste and less than 2.2 pounds per month of acutely hazardous or extremely toxic waste. Information about wastes generated by these businesses can be found in the annual reports each business files with Ecology.²⁷ Ecology also maintains data on SQGs that have obtained an EPA/state identification number. Ecology reports that in 2009, King County has 511 active SQGs and 355 previously reporting businesses that did not generate any dangerous waste during their last reporting year.²⁸

Because SQGs are not required to report annually to Ecology, Ecology's list of SQGs represents less than one percent of the likely number of SQGs that are addressed by our Program (estimated to be approximately 58,858 businesses and institutions).²⁹

Table 2-7 lists the number and type of hazardous waste generators reported for each city in King County. See Appendix B for a list of Hazardous Waste Generators reported to Ecology as of September 2009 and for information about who to contact for additional information.

26 Businesses are small quantity generators if they generate less than 220 pounds of hazardous waste a month and never accumulate more than 2,200 pounds. For certain hazardous wastes, such as mercury, the limit is 2.2 pounds per month. See WAC 173-303-070.

27 See Appendix B for specific contact information.

28 Data provided by Taisa Welhasch, Washington Department of Ecology, August 2009. The currently inactive reporters are "XQGs." Transporters and other non-waste generators are in this category. Businesses may be active generators one year and not generate hazardous waste the next year. Depending on their circumstances and processes, they can also move between being small, medium and large quantity generators.

29 See Section 2.6 for additional information on the number and types of SQGs in King County.

Table 2-7: Hazardous Waste Generators By City in King County³⁰

City	# LQGs	# MQGs	# SQGs	# XQGs	Total
Algona	0	0	2	1	3
Auburn	12	11	27	18	68
Bellevue	8	17	43	20	88
Black Diamond	0	0	0	1	1
Bothell	2	10	9	5	26
Burien	0	1	5	6	12
Carnation	1	0	0	1	2
Covington	0	3	0	1	4
Des Moines	2	3	2	3	10
Duvall	0	2	1	0	3
Enumclaw	0	1	5	6	12
Federal Way	5	11	10	9	35
Issaquah	2	6	13	6	27
Kenmore	0	1	3	1	5
Kent	27	26	61	21	135
Kirkland	8	9	16	8	41
Lake Forest Park	0	0	0	0	0
Maple Valley	1	0	4	2	7
Mercer Island	0	1	3	3	7
Newcastle	0	0	0	1	1
Normandy Park	1	0	0	1	2
North Bend	1	0	4	0	5
Pacific	0	0	2	3	5
Redmond	17	12	20	13	62
Renton	12	15	29	18	74
Sammamish	0	0	0	0	0
SeaTac	1	3	4	5	13
Seattle	103	123	213	178	617

³⁰ Data provided by Taisa Welhasch, Washington Department of Ecology, August 2009.

Table 2-7: Hazardous Waste Generators By City in King County Continued

City	# LQGs	# MQGs	# SQGs	# XQGs	Total
Shoreline	0	1	3	2	6
Skykomish	1	0	1	0	2
Snoqualmie	0	2	2	1	5
Tukwila	6	9	18	8	41
Woodinville	3	5	8	5	21
City Total	213	272	508	347	1,340
Unincorporated King County	1	1	3	8	13
Grand Totals	214	273	511	355	1,353

2.5.2. Hazardous Waste Transporters

There are more than 134 registered hazardous waste transporters in Washington. Some of these haul waste produced in the course of conducting their own business or agency operations, while others provide a commercial waste transport service.³¹ Washington State registered hazardous waste transporters based in King County that offer commercial waste transport services are listed in Table 2-8.

Table 2-8: State-Registered Hazardous Waste Transporters Located in King County³²

Vendor Name	Location
Clean Harbors	SeaTac
Emerald Services	Seattle
FBN Enterprises	Bellevue
General Environmental Management	Kent
Keep It Clean Recycling	Redmond
Kleen Environmental Technologies	Seattle
PSC Environmental Services	Kent
Safety-Kleen	Auburn
Univar USA	Kent
Veolia Environmental Services	Kent

³¹ Data provided by Kathleen Kaynor, Washington Department of Ecology, 9/16/09.

³² This list includes major companies based in King County that the Program lists as having hazardous waste facilities or brokers and Ecology data shows "transport others wastes." Clean Harbors and PSC provide these services but are not on Ecology's list.



Hazardous Waste Transporter

Many other transporters serve King County businesses. Hazardous waste transporters do not have to register with Ecology to pick up dangerous/hazardous waste in King County or Washington State. According to Ecology, some transporters are registered in Washington State because they are based here or operate locally; most other Washington State transporters are probably registered in another state.³³ However all hazardous waste transporters need to have an EPA/State identification number, comply with federal hazardous materials transportation requirements, and comply with manifest tracking and reporting requirements. See Appendix B for a list of current state transporters.

2.5.3. Facilities Handling Hazardous Waste and Used Oil

There are several different types of facilities in King County that address hazardous waste and used oil. They include hazardous waste treatment facilities, hazardous waste recyclers, used oil processors, and registered transfer facilities with on-site storage time limitations.

In May 1997, there were 16 hazardous waste treatment or storage facilities with EPA/state identification numbers in King County. Several of the sites were operated by businesses for management of their own wastes, while other sites were operated as commercial facilities handling the wastes of other fully regulated and small quantity hazardous waste generators.



PSC/Burlington Environmental facility in Kent

As of September 2009, there was only one commercial hazardous waste treatment, storage, disposal, and recycling facility (TSDR) in King County. Located in Kent, the facility is owned by Burlington Environmental, LLC and operated by PSC Environmental Services, LLC. A second privately operated hazardous waste TSDR is located in Auburn. It is owned by the Boeing Company to handle its own wastes.

In addition to the hazardous waste TSDRs, two recycling-only facilities are located in Seattle. They are: Ecolights Northwest, which recycles fluorescent tubes, and Total Reclaim, which recycles refrigerants like CFCs and HCFCs.



³³ Kathleen Kaynor, Washington Department of Ecology, personal communication, September 16, 2009.

There also are two facilities in Seattle that process used oil. They are operated by Emerald Petroleum in Seattle and Marine Vacuum Services.

Several hazardous waste transporters and marine terminal operators own, lease or operate transfer facilities where they can transfer shipments of dangerous waste from one transport facility to another, from one container to another, and/or from one transporter to another. A transporter may store manifested shipments of dangerous waste in containers meeting the regulatory requirements of WAC 173-303-190 for ten days or less at a facility that is registered with Ecology, as long as regulatory requirements are met.³⁴ In September 2009, Ecology reported that the companies listed in Table 2-9 have ten-day transfer facilities in King County.



Used oil storage tanks.

Table 2-9: List of Ten-Day Transfer Facilities in King County

Company Name	Address	City	Zip Code
Clean Harbors Environmental Services	19320 Des Moines Memorial Drive S., Suite 400	SeaTac	98188
General Environmental Management	7821 S. 198th Street	Kent	98032
Veolia Environment Dbas Onyx Environmental Services	21814 76th Ave S.	Kent	98032
PSC/ Burlington Environmental LLC.	20245 77th Ave S.	Kent	98032-1386
Northland Services – Jore Marine Services Inc.	6700 W Marginal Way SW Terminal 115	Seattle	98106
Univar USA Inc. Previously Vopak USA Inc.	8201 S. 212th St	Kent	98032-1952
NRC Environmental	9510 10th Ave. S.	Seattle	98108
Emerald Services Inc	7343 E. Marginal Way S.	Seattle	98108
Metso Paper	34320 Pacific Hwy. S.	Federal Way	98003-6816

See Appendix B for additional information about the hazardous waste facilities described in this section.

³⁴ See WAC 173-303-240(6) for specific requirements.

2.5.4. Approved Land Use Zones or Exemptions

The Washington State Hazardous Waste Management Act (HWMA) required local governments to establish land use zones or geographic areas for siting “designated zone facilities,” such as hazardous waste recycling, storage and treatment facilities. These local zoning requirements must be consistent with the State’s hazardous waste siting criteria and must allow hazardous waste processing or handling where hazardous substances, such as raw materials, are processed or handled.

Local governments are not required under the HWMA to develop land use zones for siting designated zone facilities if they can show that within their jurisdictions no regulated amounts of hazardous waste were generated over the previous two years, and no geographic area meets the state’s siting criteria. Zone designations or requests for exemptions were required to be submitted to Ecology by June 30, 1988.

According to Ecology records, the following communities have approved land use zones, or have received approval of their request for an exemption from the zoning requirements:

- Auburn
- Beaux Arts
- Bellevue
- Bothell
- Carnation
- Clyde Hill
- Des Moines
- Federal Way
- Hunts Point
- Kent
- Kirkland
- Lake Forest Park
- Medina
- Mercer Island
- Normandy Park
- Pacific
- Redmond
- Renton
- SeaTac
- Seattle
- Skykomish
- Tukwila
- Yarrow Point

Ecology files do not provide documentation of approval of zone designations or exemptions for the following jurisdictions:

- Algona
- Black Diamond
- Burien
- Duvall
- Enumclaw
- Issaquah
- Newcastle
- North Bend
- Shoreline
- Snoqualmie
- Woodinville
- Unincorporated King County

Ecology files do not provide documentation of approval of zone designation for the following jurisdictions that have been incorporated since 1997:

- Covington
- Kenmore
- Maple Valley
- Sammamish

To comply with the zone designation requirements, these municipalities and King County should contact Ecology to certify compliance, bring their zoning into compliance, or request an exemption as provided for in RCW 70.105.225.

2.5.5. Known and Suspected Contaminated Sites

According to data provided by Ecology and EPA, King County currently has some 242 known or suspected contaminated sites. As of February 2009, Ecology reported that there were 219 state designated sites that were either known or were waiting to be assigned a ranking. In addition, there are 23 Federal Superfund designated sites in King County.

Washington State sites are ranked on a scale from one to five, using the Washington State Ranking Method. A ranking of one represents the highest level of concern to human health and the environment relative to other sites, and five the lowest. Thirty percent of the state sites, or 64 out of 219, are ranked as category one or two. See Table 2-10 for a list of known and suspected contaminated sites by jurisdiction, and Appendix B for additional details. Other sites of concern include leaking underground storage tanks. Ecology maintains a list of commercial property owners with leaking tanks, the addresses of the property at which the tanks are located, affected media and their cleanup status.



**Table 2-10: Location of Known and Suspected Contaminated Sites
as of September 2009**

Location	Number of state sites	Number of Superfund Sites	Total
Auburn	9	0	9
Bellevue	4	0	4
Black Diamond	2	0	2
Bothell	3	0	3
Cedar Falls	1	0	1
Covington	1	0	1
Des Moines	1	0	1
Duvall	1	0	1
Enumclaw	4	0	4
Issaquah	4	5	9
Kenmore	1	0	1
Kent	20	1	21
Kirkland	3	0	3
Maple Valley	3	1	4
North Bend	1	0	1
Ravensdale	2	0	2
Redmond	3	0	3
Renton	10	1	11
SeaTac	4	0	4
Seattle	130	15	145
Skykomish	1	0	1
Tukwila	4	0	4
Vashon	4	0	4
Woodinville	3	0	3
Totals	219	23	242

2.6. Moderate Risk Waste Generation, Collection, Disposal and Impacts

“Moderate risk waste” (MRW) is a statutory term that refers to hazardous wastes that are generated by households and in small volumes by businesses.³⁵ These wastes are more commonly known as household hazardous waste (HHW), if generated by residents; or small quantity generator (SQG) waste, if generated by businesses, schools and other institutions. Essentially, the term MRW encompasses HHW and SQG wastes.

According to Ecology, “‘moderate risk’ does not mean that the material is moderately hazardous. Rather, the material is generated in small volumes and therefore is not regulated in the same way as larger volumes of hazardous waste from businesses. It is more accurate to refer to these wastes as ‘Small Volume Hazardous Wastes.’”³⁶ These wastes typically are toxic, corrosive, flammable and/or reactive. Examples include oil-based paint, adhesives, paint thinner, solvents, oven cleaners, antifreeze and gasoline.

Hazardous chemicals and hazardous materials are widely used in manufacturing processes and are constituents in many commercial and consumer products. Most, if not all, of the households and businesses in King County use some products containing hazardous constituents. In many cases, the hazardous products will be used up. In other cases, the hazardous products will be stored for future use, at which point they may be used up. Sometimes hazardous products are given away to others to use. If and when the hazardous product is no longer usable, it becomes waste. If a resident generates it, it becomes HHW. If it is generated by a business, school or other institution, it becomes SQG waste.

Our Program addresses the production, use, storage and disposal of MRW through a wide variety of programs and services. The following sections describe the use of hazardous materials and disposal of hazardous waste by King County residents and small quantity generator businesses and institutions.

2.6.1. Household Hazardous Waste Generation, Collection and Disposal

Household Hazardous Waste Generation

King County’s approximately 1.9 million residents frequently use hazardous household products to clean and maintain their homes and gardens, to maintain automobiles, boats and other equipment, and for various hobbies and recreational activities. Examples include:

- adhesives, oil-based paint, thinner, epoxy and paint strippers, for repair and remodeling;
- oven cleaners, deck cleaners, degreasers, toilet cleaners, for cleaning and maintenance;

³⁵ See the Washington State Hazardous Waste Management Act, RCW 70.105.010 (17).

³⁶ See the Washington Department of Ecology’s Moderate Risk Waste Home page at www.ecy.wa.gov/PROGRAMS/SWFA/mrw also see *Ecology’s 2004 Beyond Waste Plan*.

- wood preservatives, mole killer, herbicides, insecticides, to maintain yards and gardens;
- batteries, paint, gasoline, oil, antifreeze, solvents, to maintain cars, boats and equipment; and
- photo chemicals, pool chemicals, glazes, paint, white gas, for hobbies and recreation.

The volume and variety of hazardous household products constantly changes as products reformulate, new products come on the market, and market share among products changes. There are also chemicals and products that have been taken off the market, but are still present at businesses and residences and must be addressed, such as DDT, exotics and other legacy chemicals.

Programs throughout the nation have struggled with quantifying the amount of household hazardous waste generated. National estimates range from 4³⁷ to 20³⁸ pounds of HHW per capita, per year. Other estimates range from 10.7³⁹ to 30⁴⁰ pounds of HHW per household, per year. These estimates have been derived by various means. In developing an estimate for King County we are trying to capture all of the HHW that has been collected by the Program, disposed of in the garbage, poured down the drain, and stored in basements, garages, etc. A generally applied estimating method uses municipal solid waste generation as an indicator, and assumes that HHW is generated at the rate of one-half to one percent of the municipal waste generated.⁴¹ Using this rule of thumb, the amount of municipal solid waste generated in 2008 in Seattle and King County ranges from 2,548,473 to 2,632,028 tons in 2008 depending on the assumptions used. Those solid waste numbers yield an estimated possible HHW generation range of from 12,742 to 26,320 tons per year, within King County. That is equivalent to 14 to 28 pounds per person per year, or 32 to 66 pounds per household per year. Again, this is a very crude estimate and should not be thought of as other than anecdotal.

Verifying quantities of HHW is difficult for a number of reasons. Household hazardous wastes are fundamentally different from municipal solid waste in terms of the frequency of their generation and need for disposal. Estimating quantities of waste generated is complicated by the tendency for residents to store hazardous household products for years, and to dispose of accumulated quantities

37 County of Maui, Hawaii, *Integrated Solid Waste Management Plan*, (Wailuku, HI: County of Maui, February 2009). Chapter 11, page 11-3 states that national generation estimates have been at four pounds per person per year, but a 2006 local study (in the County of Kauai) estimated HHW material to be 9.25 pounds per person per year. This study is available on line at: www.mauicounty.gov/index.aspx?NID=881.

38 Washington Department of Ecology, *Moderate Risk Waste Collection System Report* (Olympia, WA: Washington Department of Ecology, 2000), p. 10. Publication # 00-07-041. Available on-line at www.ecy.wa.gov/biblio/0007041.html.

39 U. S. EPA statistic cited by County of Kauai, *Integrated Solid Waste Management Plan* (Lihue, HI: County of Kauai, Department of Public Works – Solid Waste Division, September, 2009), p. 6-6/. Available at: www.kauai.gov/portals/0/PW_SolidWaste/ISWMP_DOCUMENTS/Sec6HHW.pdf.

40 U.S. EPA: www.epa.gov/reg5rcra/wptdiv/p2pages/hhw.pdf.

41 Dave Galvin and Phillip Dickey, in "What Is Household Hazardous Waste?", Chapter 1, *Handbook on Household Hazardous Waste*, Amy D. Cabaniss, ed., refer to 20 years of data from MSW waste characterization studies which document HHW to represent 0.3 to 0.6 percent by weight. David Nightingale and Rachel Donnette cite a figure of 1% HHW in MSW as a general average in "Household Hazardous Waste," *Handbook of Solid Waste Management, 2nd Edition*, eds. George Tchobanoglous and Frank Kreith (New York: McGraw-Hill, 2002), 10.6.

at times of transition. Our attempts to directly quantify HHW generation through looking at purchase data encountered serious obstacles. For example, the Program attempted to track sales of pesticides within King County, but found that the data were incomplete, proprietary and expensive to purchase, difficult to analyze, and later were not available at all when the companies that owned the data precluded further access to it.⁴² The Program has not found a way to obtain reliable and consistent product sales data in a cost-effective way. It is also not clear how that data could ultimately make substantive differences in our decisions about our service delivery.

Survey data confirms that many residents store household hazardous products for years and dispose of accumulated quantities of HHW at times of transition. For example, a 2007 telephone survey of 908 King County residents found that middle-aged and elderly residents have greater proportions of most types of leftover hazardous products than do younger respondents under 34 years old. It also found that, generally, the higher a respondent's income, the more likely they are to possess leftover quantities of hazardous materials.⁴³ A 2007 survey of 1,852 household hazardous waste customers found that 75 percent of the people brought wastes in at a time of transition. Those transitions included 37 percent during a major cleanup effort, 27 percent when they were moving to a different residence, and 9 percent during a remodel or renovation project or at a neighborhood cleanup project. Only 20 percent of the respondents brought the wastes in as part of a routine visit.⁴⁴

Household Hazardous Waste Collection and Disposal

The Program currently collects HHW and SQG waste at its three fixed collection sites and at Wastemobile events throughout King County. In addition, in July 2009, the Program launched a two-year pilot project offering regular Wastemobile collection service at the Auburn SuperMall.

The Program funds fixed collection facilities in North and South Seattle, which are operated by Seattle Public Utilities. The Program also funds the Factoria facility, the Auburn Supermall Wastemobile collection site, and regular Wastemobile services. These are operated by King County Solid Waste Division. Table 2-11 lists the collection sites, their locations, and which agency operates them. These costs are partially reimbursed by grant funding from the Washington Department of Ecology's Coordinated Prevention Program.

42 Philip Dickey, *Pesticide sales at King County "Home Improvement Centers" in 2000, 2001 and 2002*, (Seattle, WA: Local Hazardous Waste Management Program in King County, 2003).

43 EMC Research, *Local Hazardous Waste Management Program in King County Household Hazardous Waste Survey: Summary of Findings October – November 2007* (Seattle: Local Hazardous Waste Management Program in King County, March 2008), PowerPoint Presentation, Slide. 3. There was no statistically significant age difference in leftover quantities of oil-based paint or fluorescent tubes.

44 Gwen Vernon, Christy Shelton, and Jessica Branom-Zwick, *Household Hazardous Waste On-Site Survey, August-September 2007* (Seattle: Local Hazardous Waste Management Program in King County, October 2007).

Table 2-11: Moderate Risk Waste Collection Sites in 2009

HHW Collection Sites	Location	Operator
Fixed Facilities		
Factoria MRW Site	13800 SE 32nd, Bellevue	King County Solid Waste Division
North Seattle MRW Collection Site	125500 Stone Ave N. Seattle	Seattle Public Utilities
South Seattle MRW Collection Site	8105 5 th Ave S., Seattle	Seattle Public Utilities
Wastemobile		
Auburn SuperMall Collection Site	1101 Supermall Way, Auburn	King County Solid Waste Division
Mobile Collection Events	Varies, travels throughout King County	King County Solid Waste Division

These collection sites accept a wide variety of household hazardous wastes including: aerosols; automotive batteries, fluids and products; dry cell batteries; fluorescent light bulbs and other products that contain mercury, like thermostats and thermometers; glues and adhesives; oil-based paints, thinners, and solvents; household cleaners; hobby chemicals; indoor and outdoor pesticides; pool and spa supplies; propane tanks; road flares; and other products. Quantity restrictions apply. See Appendix C for additional information about waste acceptance.

During 2008, the Program collected 1,826 tons of HHW from more than 44,875 customers. Since 1991, the Program has collected or funded the collection of over 29,300 tons of HHW from more than 702,000 customers.⁴⁵

Our Program has significantly expanded our HHW collection services since the 1997 Plan Update. As was described in Chapter 1, HHW service level studies in 2000 and 2008 led to the opening of the Factoria HHW Collection facility in 2003, and offering regular collection service at the Auburn Supermall in 2009. These changes were made to respond to population growth and to improve service equity. As Table 2-12 shows, our Program has more than doubled our operating hours, as well its accessibility for residents in East and South King County.

⁴⁵ See Chapter 6 for information about what happens to the waste that is collected.

Table 2-12: Comparison of Number of Hours Open by Year

Year	1997	2006	2009 Before Auburn Supermall	2009 With Auburn Supermall
Number of MRW facilities/sites	2	3	3	4
Number of hours of regular collection per week (with Auburn Supermall)	36	90	90	111
Number of hours/week in summer with Wastemobile	57	111	111	132

Suburban cities participating in the Program receive funds to carry out projects consistent with Program goals and services. These funds are allocated based on each city's population. Funding is made available through contracts administered by Public Health-Seattle & King County. Most cities combine their HHW funds with their CPG funds to sponsor combined HHW collection and solid waste recycling events. Some cities also use the funds to educate residents and businesses about ways to reduce their use of toxic and hazardous materials and how to properly dispose of them.

The Washington Department of Ecology funds city solid waste recycling projects through its Coordinated Prevention Grant (CPG) Program. Most cities combine their HHW funds with their CPG funds to sponsor combined HHW collection and solid waste recycling events. These events are typically held in the spring and the fall. These city-operated events target wastes that are generated by many residents, and wastes that are easy to recycle. Examples include: used motor oil, batteries and other automotive products; fluorescent tubes and bulbs; refrigerators with refrigerants; and oil-based paint. During 2008, our suburban city partners collected 158 tons of HHW at their city-operated collection events. Since 1991, suburban cities have collected more than 3,258 tons of HHW from some 326,248 residents. Altogether the Program has collected, or funded the collection at suburban city events, of approximately 32,575 tons of HHW, from more than a million households.

Our Program promotes private sector involvement in hazardous waste collection and management. For example, it is currently working with retailers to provide multiple take-back sites for pharmaceutical wastes, and fluorescent light bulbs and tubes. In addition, our Program continues to promote private used oil recycling take-back sites.

Household Hazardous Waste Assessment

Our Program routinely monitors the number of residential customers we serve, the quantities and types of HHW that we collect, and where and how the wastes are recycled or disposed of. We conduct regular customer and public surveys to assess the effectiveness of our services. In addition, we closely monitor implementation of annual work plans and periodically conduct in-depth assessments of our collection service delivery and the needs associated with it.

Again using the estimation method that relates solid waste generation to HHW generation, and applying that rule to 2008 data from Seattle and King County, an estimate of between 12,742 and 26,320 tons of HHW was generated in 2008. Applying these estimates to 2008 collection data yields the following estimates:

Table 2-13: Estimation of HHW Generation and Disposition in 2008

HHW Generated/Collected/ Disposed of	Low Amount Estimate (Tons)	High Amount Estimate (Tons)	Notes
HHW generated.	12,747	26,325	Depends on MSW generation assumptions. (Assumption = 0.5% to 1% of MSW generated in King County in 2008)
Collected by the Program.	1,826	1,826	Program data.
Collected by Program funded city events.	158	158	Program data
Disposed of in MSW.	5,234	5,234	Includes latex paint disposed. Does not include medical wastes or electronic wastes.
Stored or otherwise disposed of.	5,529	19,107	43% to 73% of HHW generated, depending on assumptions.

Table 2-13 does not take into account the estimated 816 tons, or 204,000 gallons, of used motor oil that was recycled at 83 collection sites in 2008. It also does not include rechargeable batteries, thermostats, and fluorescent lamps and tubes that were collected at other private collection sites.⁴⁶

While MRW quantity data are imprecise and based on multiple assumptions, the Program has concluded that spending ratepayer dollars on more precise estimates is not productive and would not make significant programmatic differences. Much of the health risk posed by household hazardous materials occurs during their use and misuse, so focusing on end-of-the-pipe wastes does not advance the goal of protecting public and environmental health. The Program collects the data that are useful and necessary to assess collection service levels, and monitors available environmental data to set Program priorities and service levels.

⁴⁶ See Chapter 6 for additional information about these programs.

2.6.2. SQG Waste Generation, Collection and Disposal

SQG Waste Generation

Most of the approximately 59,345 businesses in King County generate some amount of hazardous waste.⁴⁷ About 487 of these are regulated by Ecology because they generate higher volumes of hazardous waste.⁴⁸ The remaining 58,858 businesses either routinely, or intermittently, generate small volumes of hazardous waste. They are the Program's primary business constituency.

The quantities and types of hazardous material used and disposed of vary widely by business type. Some businesses, such as dry cleaners, dentists, and autobody shops, generate hazardous waste on a regular basis. Others, such as jewelry shops, business offices, and photo processors, generate waste more sporadically. Examples include autobody and auto repair shops discarding solvents, paints, adhesives and oil; dental offices disposing of amalgam particles and amalgam wastewater containing mercury, photo processing chemicals, cleaning solvents and lead; dry cleaners generating perchloroethylene and other solvents; furniture refinishers discarding lead and chlorinated solvents; landscapers disposing of pesticides, fuels and oils; and metal fabricators getting rid of metal working fluids and solvents.

According to Ecology, the SQG waste stream "is less well quantified [than the HHW waste stream], but experts estimate that it is probably at least as large as the HHW waste stream."⁴⁹ Based on this assumption, King County SQGs generate between 12,742 and 26,232 tons of MRW annually. However, as noted in the HHW generation discussion, the one-half to one percent estimation is very general, and even less precise information is available on small-volume business hazardous waste generation.

Despite the Program's long history of working with King County businesses, relatively little is known about the number and type of SQGs in King County and how they handle their wastes. Part of the problem is in the nature of small businesses, many of which experience rapid turnover. In addition, small quantity generators vary widely by size, type and mobility. They run the gamut from one or two-person businesses that operate out of the back of a truck, such as landscapers, janitors, etc., to much larger businesses that operate out of fixed locations. Neither SQG businesses nor the companies that collect their wastes are required to report on the disposition of those wastes. That results in a dearth of data about them.

47 King County, *2008 Annual Growth Report*, p.1 reports that in 2007 there were 59,345 business units in King County.

48 Hazardous waste generator data provided by Taisa Welhasch, Washington Department of Ecology, August 2009 indicates there are 214 large quantity generators and 273 medium quantity generators in King County. See Table 2-7 for the number of hazardous waste generators by city.

49 Washington State Department of Ecology, *Beyond Waste Plan*, pages 17-20 ("Initiative # 2: Reducing Small Volume Hazardous Materials and Wastes") (Olympia: Washington Department of Ecology, November 2004). Available on Ecology's Web site at www.ecy.wa.gov/pubs/0407022.pdf.

The Program is undertaking a pilot project to develop additional information about SQGs in King County and the wastes that they generate and discard. We are doing this by allowing SQGs to use the Program's collection services. However, the issue of addressing the hazardous nature of these materials prior to their becoming wastes remains, and it requires a focus on the production, use and storage, as well as the ultimate disposal of these materials at the end of their useful life.

SQG Waste Collection and Disposal

The Program historically has approached businesses differently than households. Prior to 2008, the Program did not knowingly allow SQGs to use the HHW collection facilities. Instead, the Program provided information, technical assistance, and incentives to encourage businesses and other SQGs to use commercial hazardous waste collection services provided by private companies. However, a 2006 SQG Service Level Study concluded that our Program should allow SQGs to use the HHW collection facilities and services on a test basis.⁵⁰ In response to this recommendation, the Program launched a pilot project that allowed eligible SQGs to bring household quantities and types of hazardous waste to three of the Program's facilities/services. In 2008, SQG waste was accepted at the South Seattle and Factoria fixed collection facilities, as well as at the Wastemobile. The SQG Pilot Project was extended into 2009, and was it expanded to include the North Seattle collection facility and the Auburn Supermall Wastemobile service.

The SQG Pilot Program is intended to serve those SQGs that generate small amounts of hazardous waste on an infrequent basis. It is not intended to serve businesses that generate regular amounts of hazardous waste, which should be managing their waste through one of the commercial hazardous waste vendors. The Pilot Program is designed to gather data about types of SQGs and their need for Program-provided SQG collection services.

The Program allows eligible SQGs to dispose of hazardous wastes, which are of low to moderate hazard, at our facilities. These wastes include:

- oil-based paints and stains, including used thinners;
- paint-related materials like caulks and tars;
- gasoline in amounts up to 25 gallons;
- chlorinated and non-chlorinated solvents which are separated and properly labeled;
- consumer pesticides and herbicides that do not require an applicator license;
- batteries with a limit of 5 automotive batteries and no oversized batteries;
- mercury, including thermostats, thermometers, or switches that contain mercury;
- corrosives up to one gallon of hydrofluoric acid mixtures, and nitric acid up to 75 percent strength;
- oxidizers except for peroxides that exceed 60% strength;
- automotive products including cleaners, degreasers, oil and grease; and
- flammable solids like road flares.

Quantity limits and other conditions apply to all of these materials.

⁵⁰ Liz Tennant and Alexandra Thompson, *Small Quantity Generator Disposal Work Group Report*. (Seattle, WA: Local Hazardous Waste Management Program in King County. April 2007), contained in Appendix E of this Plan Update.

While the Pilot Program allows eligible SQGs to bring hazardous wastes similar to those disposed of by households to the collection facilities, there is one important difference: unlike households, SQGs are not allowed to deliver mercury containing fluorescent bulbs and tubes. Instead, businesses and other SQGs are required to use private lamp and tube recyclers in the Hazardous Waste Directory and the Take-It-Back Network.

Between February and December 2008, 278 businesses and other SQGs disposed of 63,720 pounds of wastes at the Program-operated collection facilities shown in Table 2-14.

Table 2-14: SQG Use of Program Operated Collection Facilities, February – December 2008

Collection Categories	South Seattle	Factoria	Wastemobile	Total
Number of SQGs served	148	108	22	278
Estimated pounds of SQG collected	38,125	18,674	6,921	63,720

Many SQGs use commercial hazardous waste brokers and transporters to collect and dispose of their small volume hazardous wastes. Other SQGs schedule an appointment and drop off their waste for disposal at a commercial collection site. The Program publishes information about how to properly manage specific waste streams and how to choose a vendor. We maintain a list of hazardous waste brokers, recyclers, facilities, transporters and other management companies in our Hazardous Waste Directory. That Directory is given to SQGs during field visits and on request. A downloadable version is also available on the Program's Web site. The Program also offers financial and recognition incentives to encourage SQGs to properly recycle or dispose of their hazardous wastes.

There is one commercially operated Moderate Risk Waste facility in King County. It is the PSC/ Burlington Environmental facility, at 20245 77th Avenue S. in Kent. PSC also provides pick-up services and SQG drop-off services at its Denver Street site in South Seattle, and at the Kent MRW facility, both by appointment only. According to Ecology, Puget Sound Energy and Seattle City Light also operate permitted Moderate Risk Waste facilities. The Puget Sound Energy MRW facility is located at 22828 68th Ave S., Kent. The Seattle City Light MRW facility is located at 3613 4th Avenue S., Seattle.

According to Ecology, in 2008 1,782 King County small quantity generators disposed of approximately 2,481,286 pounds/1,241 tons of hazardous wastes through PSC, Emerald Services, and our Program. This represents about 30 percent of the 8,196,174 pounds of SQG waste collected statewide. Table 2-15 summarizes the amount of SQG waste collected by these vendors and our Program.⁵¹ Waste

⁵¹ This Table uses the numbers reported by Ecology, except that it does not include 1,000 pounds of electronics and 30,050 pounds of CRTs, which are not accepted by our Program. Also, Program reports indicate that an estimated 63,720 pounds was collected through the Program. However these numbers are based on many assumptions and the difference of 825 pounds most likely is accounted for in differing assumptions.

antifreeze comprised slightly more than half of all reported SQG waste collected. Other wastes included flammable liquids, paint, batteries, aerosols, chlorinated solvents, contaminated used oil, acids, bases, mercury and mercury-containing products, pesticides/poisons, reactive wastes, oxidizers, organic peroxides and other hazardous wastes.⁵² However, these data are incomplete because there is no requirement to report SQG waste amounts to Ecology.

According to Ecology's data, over 60 percent of the SQG wastes collected in King County were recycled. The remaining waste dispositions included: 16 percent treatment, 8 percent sent landfilled after treatment, 8 percent of mostly non-regulated liquids discharged to a wastewater treatment system, 6 percent recovered for energy, 1 percent were sent to a hazardous waste landfill or treatment, storage or disposal facility, and .7 percent were incinerated.

Table 2-15: Quantity of SQG Waste Collected in King County in 2008 by Collector:

Collected by	Quantity in pounds	Percent of Total
Emerald	1,514,567	61.0%
PSC at Kent	782,547	31.5%
PSC at Georgetown/Kent Collection events	121,277	4.9%
Private Sector Total	2,418,391	97.4%
The Program at South Seattle	38,172.00	1.5%
The Program at Factoria	18,843.00	0.8%
The Program at the Wastemobile	5,880.00	0.2%
Program Total	62,895	2.5%
Total SQG Waste Collected	2,481,286	100%
Equivalent tons	1,240.6	

The quantity of SQG waste reported as collected represents about five percent of the estimated SQG waste generated in King County. It is unclear where the remaining SQG waste goes. Some of it inevitably ends up in the solid waste stream. These results are consistent with the statewide finding that 99 percent of the SQG waste is not accounted for.⁵³

SQG Waste Assessment

As with HHW, the Program routinely monitors the number of SQGs that are served, the quantities and types of SQG waste collected from them, and where and how those wastes are recycled or disposed of. We also conduct periodic customer and public surveys, and more in-depth assessments of service delivery and needs.

⁵² In addition, over 500,000 pounds of "non-regulated liquids" was collected. See Appendix C for additional details.

⁵³ Washington State Department of Ecology, *2004 Beyond Waste Plan*, p. 20.

The Program obtains data about a limited range of SQG disposal practices from our SQG Pilot Project, and from technical assistance visits made by our staff. Analysis of 4,462 King County businesses⁵⁴ visited by Program staff between 2000 and 2006, found that 45 percent of the businesses were properly disposing of their wastes. Another 44 percent were disposing of their hazardous waste improperly in the garbage, in the sewer, or illegally dumping it. A few were bringing wastes to an HHW collection facility.⁵⁵

Ecology experts estimate that the SQG waste stream is “probably at least as large as the HHW waste stream.”⁵⁶ Applying the same HHW estimation method to SQG waste results in the following approximations. For 2008, Seattle and King County generated between 12,742 and 26,320 tons of SQG waste.

Table 2-16: Estimation of SQG Waste Generation and Disposition in 2008

HHW Generated/Collected/ Disposed of	Low Amount Estimate (Tons)	High Amount Estimate (Tons)	Notes
Estimated amount of SQG generated.	12,743	26,320	Depends on MSW generation assumptions. (Assumption = between 0.5% and 1% of MSW generated in King County in 2008.)
Amount collected by the Program and hazardous waste vendors	1,241	1,241	Ecology data.
Amount disposed of as MSW.	3,821	3,821	Includes latex paint disposed of. Does not include medical wastes or electronic wastes.
Amount being stored or otherwise disposed.	7,681	21,258	60% to 81% depending on assumptions.

The collection data reported to Ecology accounts for only 1,241 tons of the estimated 12,700 to 26,000 tons of SQG waste generated in 2008. Data from municipal solid waste composition studies indicate that possibly as much as 3,821 tons of SQG waste may be disposed in the solid waste stream. It is

54 Examples of those businesses include dry cleaners, janitorial companies, auto repair shops, nail salons, landscapers, photo labs, dentists, marinas, etc.

55 This is a subset of the 14,700 businesses that were visited by field staff between 2000 and 2006.

56 Washington State Department of Ecology, *2004 Beyond Waste Plan*, pages 17-20 (“Initiative # 2: Reducing Small Volume Hazardous Materials and Wastes”).

unclear where the remaining hazardous material is being stored, exchanged, recycled, or disposed of. This is consistent with the findings statewide that “99 percent of the conditionally exempt small quantity generator waste stream is unaccounted for.”⁵⁷

Again, similar to the problems of obtaining better HHW data, obtaining precise SQG data would be extremely costly, and would have limited usefulness in Program decision-making. At the same time, we are taking some steps to learn more about conditionally exempt SQGs in King County and the wastes that they generate and discard.

2.6.3. Solid Waste, Wastewater, Environmental and Human Health Data

Information on the types and quantities of MRW generated and disposed of through means other than those described above is limited. Data are available on hazardous materials and wastes that are stored, released and disposed in Washington State in large quantities. Data sources include the Federal Toxics Release Inventory,⁵⁸ Washington State’s Community Right to Know law, including chemical storage data,⁵⁹ and the Puget Sound Clean Air Agency.⁶⁰ Ecology compiles data about the quantities and types of hazardous wastes associated with regulated large and medium quantity hazardous waste generators. These sources, however, don’t provide detailed information about the many businesses and residents that use and dispose of smaller volumes of hazardous waste.

Solid Waste Composition Data

Seattle Public Utilities and King County Solid Waste Division conduct regular solid waste composition studies that track the quantities and types of waste generated by residents, and by businesses and other non-residential sources. The agencies differ in their classification of hazardous waste, and both include items that are not managed by the Program. The numbers reported here don’t include medical wastes or electronic wastes, because the Program handles neither.

Hazardous waste from households and businesses is present in municipal solid waste in relatively small quantities, as shown in Table 2-17. The types and quantities of waste vary by source, whether single family, multi-family, commercial or self-hauled. The Seattle and King County results are consistent with national findings. Additional details can be found in Appendix C. While these results have been consistent for the past twenty years, they lack reliability due to the small percentage of hazardous waste found in the overall sample. Also, the volumes have remained consistent despite population growth, on the one hand, and the diversion of large volumes of recyclable and compostable materials from the solid waste stream on the other.

⁵⁷ Washington State Department of Ecology, *2004 Beyond Waste Plan*, p. 20.

⁵⁸ Toxics Release Inventory data is available from the U. S. Environmental Protection Agency at www.epa.gov/tri/. A searchable database is available from the Right to Know Network at: data.rtknet.org/tri.

⁵⁹ The Washington State Department of Ecology manages this program. For additional information see www.ecy.wa.gov/epcra/index.html and for data see www.ecy.wa.gov/epcra/index_trids.html.

⁶⁰ The Puget Sound Clean Air Agency permits the release of toxic materials. To learn more about their toxics program, visit www.pscleanair.org/airq/basics/airtoxics.aspx.

Table 2-17: Summary of Municipal Solid Waste (MSW) Characterization Studies in Seattle and King County, 2002-2008

Location - Year	Waste Composition Study	Residential		Commercial	
		Tons of MRW ^a	Percent of MSW	Tons of MRW	Percent of MSW
Seattle - 2002	Commercially collected	688	0.5%	N/A	N/A
King Co. - 2002/3	Commercially collected	1,043	0.3%	1,254	0.3%
	Self Hauled	758	0.4%	17	0.1%
	Totals	1,801	0.3%	1,271	0.3%
Seattle - 2004	Commercially collected	N/A	N/A	462	0.2%
	Self Hauled	458	0.7%	246	0.7%
	Totals	458	0.7%	708	0.3%
Seattle - 2006	Commercially collected	681	0.5%	N/A	N/A
King Co. - 2007	Commercially collected	1,802	0.5%	2,475	0.6%
	Self Hauled	2,344	1.2%	153	0.5%
	Totals	4,146	0.8%	2,628	0.5%
Seattle - 2008	Commercially collected	N/A	N/A	1,244	0.7%
	Self Hauled	392	1.2%	725	1.3%
	Totals	392	1.2%	1,969	0.8%

^a Tons were adjusted to align with hazardous wastes collected by the Program. Biomedical and electronic wastes are not included in the tons reported here.

It should be noted that latex paint was a large component of the hazardous waste found in the 2007 and 2008 solid waste composition studies. For example, in King County's 2007 waste study, latex paint accounted for 1,894 tons, or 27 percent of the 7,028 tons of MRW in the combined residential, commercial and self-haul loads. Similarly, in Seattle's 2008 waste sort, latex paint accounted for 25 percent of the 2,360 tons of MRW in the commercial and self-haul waste sorts. Since latex paint is no longer designated as hazardous waste, the Program will not count it as "hazardous waste" in future waste composition analyses.⁶¹

Available Wastewater Data

Some hazardous consumer and commercial products enter the wastewater treatment system, both during the product's normal use and when it is disposed of as waste. In addition, some commercial processes create liquid hazardous wastes and suspended particles that go into the wastewater

⁶¹ Past studies will be adjusted to allow for consistent monitoring of hazardous waste in the municipal solid waste stream.

treatment system. In some areas, hazardous constituents also enter the wastewater system as a result of stormwater runoff. No data are available on the amount or percent of MRW that goes into the wastewater treatment system. The original 1990 Program Plan assumed for planning purposes that 20 percent of the hazardous wastes were disposed of in the wastewater treatment system and 80 percent in the solid waste system.

King County treats about 90 percent of the region's municipal wastewater. Three sewer districts in southwestern King County, and the cities of Duvall, Enumclaw, North Bend, Snoqualmie and Skykomish treat the other 10 percent. Wastewater treatment plants typically don't monitor for the toxic materials that are addressed by our Program. The exception is King County's tracking of trace elements, known as heavy metals, in its wastewater and biosolids. The County has permit limits that restrict concentration levels and maximum quantities of metals that can legally be discharged to Puget Sound, or applied to land as silvicultural and agricultural fertilizers. King County routinely meets these limits for heavy metals due to its rigorous source control programs, which include its industrial pretreatment efforts and its involvement in our Program.

One of the most successful, measurable results of the Program's part of the wastewater source control effort was the dramatic reduction in mercury at the wastewater treatment plant at West Point and the South plant at Renton. Dental amalgam waste was found to be the single largest identifiable contributor of mercury to local wastewater. After working with dentists for years, including the Program's on-site visits to every dental office in the County, King County Code was changed to require dentists to install amalgam separator units by July 1, 2003. As a result, the levels of mercury in biosolids were reduced by 50 percent.

A wide variety of organic chemicals found in municipal wastewater originate from households and small businesses. These range from cleaning solvents such as perchloroethylene and glycol ethers, to detergent surfactants such as nonylphenol ethoxylates. They include antimicrobial additives such as triclosan; plasticizers such as phthalate esters; the polycarbonate plastic ingredient bisphenol-A; pharmaceuticals such as antibiotics, antidepressants, analgesics and many others; and ethynyl-estradiol, the synthetic estrogen from birth control pills. There are no wastewater discharge limits for these contaminants at this time. King County Industrial Waste and the Program continue to study these chemicals. We both encourage source control efforts aimed at reducing or minimizing the entry of these chemicals into wastewater wherever practicable. For example, the Program piloted a pharmaceuticals take-back program for King County residents, with Bartell Drugs and Group Health Cooperative. The Program is also working to establish a permanent pharmaceutical take-back program funded by drug manufacturers.

Hazardous Materials in the Environment

There is a growing body of evidence that hazardous chemicals are contaminating the environment. For example, Puget Sound sediments contain persistent chemicals such as polychlorinated biphenyls (PCBs), which were used as electrical insulating chemicals and were banned in the mid 1970s;

polybrominated diphenyl ethers (PBDEs), used as flame-retardants restricted by recent state law; and mercury. These chemicals accumulate in the food chain and are now found in fish, aquatic plants and marine mammals. Endocrine-disrupting chemicals such as synthetic estrogen, nonylphenol which is a type of surfactant used in many detergents, and bisphenol-A which is a constituent of polycarbonate plastics, are increasingly being found in Puget Sound and other water bodies.

Studies conducted by the U.S. Geological Survey have documented the presence of twenty-three pesticides in urban streams during rainstorms, with concentrations of five of these pesticides exceeding the limits set to protect aquatic life. These studies also found that pesticides used on lawns and gardens contribute to the occurrence of pesticides in urban streams.⁶²

Hazardous materials and hazardous products can also enter the environment when they are carelessly used, particularly near storm drains or when they are stored or spilled on permeable ground. This is a serious problem above drinking water aquifers. Materials that are improperly stored outside, uncovered, and without secondary containment, can contaminate ground and surface waters. This can also happen with materials spilled during transportation or disposal. Other circumstances that increase the likelihood of contaminating the environment include floods; when materials are improperly disposed of in on-site sewage systems, in municipal sewage systems, or dumped; or when they are carelessly used. For example, aerosols and other volatile chemicals that are carelessly used and stored without proper covering may contaminate the air. Hazardous materials also enter the environment when pharmaceuticals, birth control pills, and other materials are metabolized by humans and excreted into the wastewater treatment system.

Hazardous Materials in the Human Body

A total of 42 billion pounds of chemical substances are produced or imported into the U.S. each day. An additional 1,000 new chemical compounds are introduced each year. Global chemical production outpaces population growth and is doubling every 25 years.⁶³ Industrial chemicals appear to be prevalent in people and other species, as well as in the environment. Exposures occur from improper waste management, misuse of household hazardous products, and normal use of consumer products typically considered non-hazardous. Some of those consumer products include furniture and carpeting with polybrominated diphenyl ethers, paint that contains lead, as well as polycarbonate water bottles and baby sippy cups that contain bisphenol-A.

In an effort to more fully understand the level of chemicals from the environment in people, the Federal Centers for Disease Control and Prevention (CDC) conducts regular biomonitoring studies. The

62 Frank D. Voss, et al., *Pesticides Detected in Urban Streams During Rainstorms and Relations to Retail Sales of Pesticides in King County, Washington* (Tacoma: U.S. Geological Survey, U.S. Department of the Interior, 1999), USGS Fact Sheet 097-99, available on line at wa.water.usgs.gov/pubs/fs/fs.097-99.

63 University of California, The Centers for Occupational and Environmental Health, "Green Chemistry: Cornerstone to a Sustainable California," January 2008. Available online at: coeh.berkeley.edu/docs/news/green_chem_brief.pdf.

CDC has documented the presence of hundreds of chemicals in people throughout the United States.⁶⁴ In 2005, ten Washington State residents were tested for the presence of six groups of toxic substances. Every person tested had at least 26, and as many as 39, of the toxic chemicals for which tests were run. This “pollution in people” came from exposures during everyday activities and using common products.⁶⁵ Recognizing these concerns, the Washington State Department of Health is initiating a local biomonitoring study.⁶⁶

Exposure to chemicals in the environment has been linked to a wide variety of health problems, including cognitive and learning disorders, cancers of several organ systems, and effects on reproduction, and development. From a precautionary perspective, a May 2007 gathering, in the Faroe Islands, of researchers in the fields of environmental health, environmental chemistry, developmental biology, toxicology, epidemiology, nutrition, oncology and pediatrics, resulted in The Faroes Statement. That consensus statement concluded that chemical exposures before birth and in early infancy could cause disease later in life.⁶⁷

Children are vulnerable to environmental exposures from two perspectives. First, pound for pound, they eat, drink and breathe more than adults, and, as such, they are more vulnerable to hazardous chemicals. Second, they ingest, breathe, and touch things that adults normally would not. In 2004, the Washington Poison Center received more than 11,000 calls about children under the age of six who had ingested household cleaners, deodorizers, paints, paint strippers, pesticides, fertilizers, automotive products, cosmetics or personal care products. Several studies have found that pesticides are accumulating in the bodies of children. A 2001 study found common household pesticides like Dursban and diazanon in the urine of 109 out of the 110 Seattle-area children tested.⁶⁸

The current data limitations, rapid developments in toxicology, and known susceptibility of the unborn, infants and young children all point to the need for changes to the current policies that govern chemicals and their usage. These factors are driving the Program to move beyond a focus on waste management alone and towards “upstream,” preventative approaches to protect the public and the environment in King County. The Program is committed to using the best available science to prevent harmful chemical exposures to the citizens of King County and the environment.

64 The Centers for Disease Control is conducting national biomonitoring studies that are documenting the presence of chemicals in our bodies. For additional information see www.cdc.gov/exposurereport.

65 For details see www.pollutioninpeople.org/results.

66 Washington’s Environmental Biomonitoring Survey (WEBS) Project: www.doh.wa.gov/EHSPHL/Biomonitoring.htm.

67 Philippe Gradjean, David Bellinger, et. al., “The Faroes Statement: Human Health Effects of Developmental Exposure to Chemicals in Our Environment” *Basic & Clinical Pharmacology & Toxicology*, Doi: 10.1111/j.1742-7843.2007.00114.x, 2007.

68 C. Lu, D.E. Knutson, J. Fisker-Anderson and R.A. Fenske, “Biological monitoring survey of organophosphorus pesticide exposure among pre-school children in the Seattle metropolitan area,” *Environmental Health Perspectives* 109: 299-303, 2001.

Program Philosophy



3

3. Program Philosophy

This section consists of our Program's guiding principles, vision for the future, and mission and goals, which drive our work. The vision, guiding principles and mission were developed through a strategic planning process in 2001. They were updated in 2006. Our goals and sub-goals have recently been revised to be as specific as possible, and by which we can measure our progress.

3.1. Guiding Principles

These guiding principles were intended to be used in the development of our Program's vision, mission and goals; and to help us carry out our mission and accomplish our goals. They are:

1. Be a regional leader in environmental and public health issues relating to hazardous chemical materials.
2. Foster an ethic of responsibility among those who produce, sell and use hazardous products for minimizing risks to human health and the environment from hazardous materials.
3. Ensure that Program services are available to and easily accessed by all county residents and businesses regardless of where they reside.
4. Develop and implement strategies that optimize Program service delivery to the county's most vulnerable and disadvantaged communities.
5. Use emerging information technologies to the Program's advantage while at the same time communicating in alternative ways to ensure that no group or community is excluded from Program information or services.
6. Promote the Program's use of emerging technologies to further increase its effectiveness.
7. Establish Program priorities, target resources and focus efforts accordingly.
8. Be adaptive to changing conditions – such as:
 - Community values
 - Environmental and health indicators
 - Political priorities
9. Be responsive and accountable to ratepayers.
10. Program resources will only be used for Program activities.
11. Program partners promote, and act in, the Program's best interest.
12. Continually improve Program efficiency and effectiveness by measuring Program performance.
13. Continually improve Program staff's professional, technical and cultural competency.
14. Be strategic in developing partnerships that advance the Program's mission. This includes developing non-traditional partnerships.
15. Work "upstream" to reduce human and environmental exposure to hazardous materials and products and to reduce reliance on publicly funded services. Examples include:
 - Promoting greater producer responsibility.
 - Encouraging businesses to use existing and emerging "green" technologies.

16. In priority order, promote the following hazardous waste management strategies:
 - Waste prevention
 - Waste reduction
 - Reuse
 - Recycling
 - Physical, chemical and biological treatment
 - Incineration
 - Solidification or stabilization
 - Landfill
17. Encourage greater coordination of effort by government and non-governmental organizations, businesses and residents.
18. Facilitate interagency coordination and cooperation to:
 - Improve regulatory oversight and enforcement.
 - Minimize regulatory gaps.
 - Reduce duplication of effort.

3.2. Vision

Our Vision is that the Puget Sound region is the cleanest in the country – one free of hazardous chemical exposure. More specifically, residents, businesses and government demand, use and produce products that are the least harmful to the environment and all segments of the county's population. Exposure to toxic or otherwise hazardous chemicals is virtually eliminated, essentially reduced to natural background levels. King County residents have the lowest body burden for harmful chemicals of any population in the U.S., and the most disadvantaged are as free of such exposures as the most well off. People's potential is not in any way limited due to chemical exposures, and health disparities due to chemical exposures among different segments of the population are eliminated. Products that still present any risk from chemical content are managed in a closed-loop stewardship system, funded by those who make and sell the products, until such time as they can be replaced with safer ingredients. Waste of all types is minimized, and the county's waste management systems (solid waste, wastewater, storm water) are not compromised in any way due to hazardous chemical content. The local environment is virtually free of hazardous chemicals (approaching natural background levels) and is the cleanest of any urban area in the country. We set a global example of stewardship and sustainability related to toxic or otherwise hazardous chemicals as we leave a positive legacy for the future.

3.3. Mission

Our Mission is to protect and enhance public health and environmental quality in King County by reducing the threat posed by the production, use, storage and disposal of hazardous materials.

3.4. Goals

In 2009, our goals were revised and reorganized to align with, and directly flow from, our mission's main focus areas. Those areas include: 1) production; 2) use and storage; and 3) disposal of hazardous materials. In addition to those three mission focus areas, we added a further area of managing and administering the Program. That was done to explicitly articulate what we must do to accomplish the goals in the first three mission focus areas.

Under each mission focus area, the goals are listed that address that area of work. Under those goals are sub-goals that are further delineations of the goals. Those mission focus areas, goals and sub-goals for the Program are as follows:

Mission Focus Area 1: Reduce Production of Hazardous Materials

Goal 1: Reduce the production of hazardous materials and products

Sub-goal 1A: Establish Product Stewardship/producer responsibility systems that result in the reformulation of and/or discontinuation of the production of products that have hazardous components.

Sub-goal 1B: Implement Green Chemicals policies at local, state and federal levels that promote the use of safer alternatives to hazardous chemicals.

Mission Focus Area 2: Reduce Use and Promote Safe Storage of Hazardous Materials

Goal 2: Reduce the use of, and exposure to, hazardous materials and products

Sub-goal 2A: Reduce demand for and use of the most hazardous products.

Sub-goal 2B: Increase demand for and use of less hazardous alternatives.

Sub-goal 2C: Assist cities, small quantity generators, residents and others in reducing use of and exposure to hazardous materials.

Goal 3: Reduce public and environmental exposure to the most hazardous materials.

Sub-goal 3A: Reduce the use of, and exposure to, pesticides.

Sub-goal 3B: Reduce the use of, and exposure to, mercury and mercury-containing products.

Sub-goal 3C: Reduce the use of, and exposure to, lead and lead-containing products.

Sub-goal 3D: Reduce public and environmental exposure to pharmaceutical wastes.

Sub-goal 3E: Reduce the use of, and exposure to, other identified high-risk hazardous materials.

Goal 4: Reduce the exposure of vulnerable and traditionally underserved populations to toxic and other hazardous materials.

Sub-goal 4A: Reduce the exposure of young children and youth to hazardous materials and products.

Sub-goal 4B: Reduce the exposure of traditionally underserved populations to hazardous materials and products.

Mission Focus Area 3: Promote Proper Disposal of Hazardous Materials

Goal 5: Facilitate proper hazardous waste disposal.

Sub-goal 5A: Implement product stewardship/producer responsibility in managing hazardous materials.

Sub-goal 5B: Assist cities, small quantity generators, residents and others in properly disposing of hazardous wastes.

Sub-goal 5C: Promote Waste-Management Practices that are consistent with Washington State's Waste Management Hierarchy (Reduce, Reuse, Recycle, Treat, Incinerate, and Landfill, in that order).

Sub-goal 5D: Provide equitable Household Hazardous Waste (HHW) collection and disposal services.

Sub-goal 5E: Facilitate equitable collection and disposal services for businesses that produce small quantities of hazardous waste (small quantity generators or SQGs).

Sub-goal 5F: Increase coordinated regional compliance and enforcement efforts.

Mission Focus Area 4: Manage and Administer the Program

Goal 6: Manage the program to be efficient, effective, and equitable for the Program's ratepayers.

Sub-goal 6A: Plan the Program's work and financing so that our services are current and relevant to the community's needs.

Sub-goal 6B: Increase equity with respect to the Program's services.

Sub-goal 6C: Effectively manage and coordinate implementation of the Program.

Sub-goal 6D: Steward the Program fund and its HHW and SQG sub-funds.

Sub-goal 6E: Evaluate results and adjust efforts based on that evaluation.

Sub-goal 6F: Be accountable to the public by reporting results to our customers, ratepayers, program partners, elected officials and others.

3.5. Policy Approaches

Government programs address issues within their legislated sphere of responsibility through the development of public policies. These public policies can be articulated in a variety of ways. One of those ways is to group public policies into broad approaches, under which several categories of action can be explored. At that first level of articulation, there are five broad approaches that can be taken.

These include employing:

1. Carrots (Positive Incentives),
2. Sticks (Negative Sanctions),
3. Sermons (Information Provision),
4. Structures (Government Mediation of Markets), and
5. Other/Miscellaneous Methods.¹

¹ This typology was derived from several works, including: Marie-Louise Bemelmans-Videc, Ray C. Rist and Evert Vedung, *Carrots, Sticks & Sermons: Policy Instruments & Their Evaluation* (London: Transaction Publishers, 1998); David L. Weimer and Aidan R. Vining, *Policy Analysis, Concepts and Practice*, 3rd Ed. (Upper Saddle River, N.J.: Prentice Hall, 1998); Neil Gunningham, Peter Grabosky and Darren Sinclair, *Smart Regulation: Designing Environmental Policy* (New York: Oxford University Press, Inc., 1998); and G. Bruce Doern and Richard W. Phidd, *Canadian Public Policy: Ideas, Structure, Process*, 2nd Ed. (Ontario: Nelson Canada, 1992).

At the second level, categories of action can be derived from which one can develop specific policy tools. Those tools can be selected to address problems and issues specifically. These categories of action include:

- Making Expenditures,
- Mediating Applicable Markets,
- Creating Laws,
- Government Exhortation,
- Government Enterprise,
- Voluntary/Self-Regulation, and
- Hybrids or Combinations of these categories of action.

3.5.1. Positive Incentives

Providing positive incentives, sometimes referred to as using “carrots,” can be defined as the act of giving something to a target audience to get them to change their behavior. This means getting a target audience to do something that they would otherwise not do, or stop doing something that they would otherwise do, without the incentive. Policy actions that governments can take here include expending public funds and government facilitation of markets.

Expenditure public funds can be through supply-side or demand-side subsidies, providing cushions to a specified end, and subsidizing insurance. In the expenditure arena, the Program is employing supply-side subsidies in the form of matching grants through our Voucher Incentive Program; and demand-side, in-kind subsidies through the distribution of our Green Home Kits. The Program could explore additional cash or matching grants, or vouchers or in-kind subsidies for specific products or activities, either as rewards, or to stimulate or subsidize their adoption.

3.5.2. Negative Sanctions

Applying negative sanctions, also called using “sticks,” can be defined as the act of taking something away from a target audience to get them to change their behavior. This means getting a target audience to do something that they would otherwise not do, or stop doing something that they would otherwise do, without the sanction. Policy actions under this approach include developing laws to limit the public’s behavior, implying that the government might take action if certain actions continue, or requiring target audiences to expend their resources through imposing taxes or fees.

Our Program is non-regulatory, we do not have the authority to create laws or regulations, make the threat of the creation of new laws or regulations, or take direct enforcement actions. The Program does work to coordinate compliance and enforcement amongst the appropriate agencies that do have enforcement authority. However, we do this in only the most egregious cases. This is done through our Interagency Compliance Team (ICT). That team collectively assesses the problem site and coordinates joint inspections and enforcement. Our Program also maintains a small clean up fund for those sites that must be addressed rapidly, and have no other way to fund immediate clean-up action.

We also advocate for appropriate laws and regulations with those legislative bodies at the federal, state and local levels that can take such actions. Specifically, we have, and will continue to, participate in legislative discussions on pharmaceutical disposal, mercury containing lighting and products, and other products and substances that are hazardous. These legislative discussions could result in restrictions, bans, fines, taxes or fees placed on the use of certain hazardous products or substances.

Our Program could do more work with regard to advocating for additional product labeling or other means of information disclosure. Those compulsory disclosures could be advocated for at the appropriate legislative bodies.

3.5.3. Information Provision

Providing information, also called giving “sermons,” can be defined as the act of informing a target audience to get them to change their behavior. This means getting a target audience to do something that they would otherwise not do, or stop doing something that they would otherwise do, without that information. Policy actions under this approach include exhortation and direct provision of information to target audiences.

Exhortation basically means asking somebody to either do something or stop doing something using persuasion or information. It does not involve rewards or punishments under this approach. Information provided with rewards for using that information, or punishments for not using that information, would fall under the carrot or stick approaches described previously. In this context, the intent is to provide information that is fact based; new, useful and compelling to the target audience; and provides them with less or nonhazardous alternatives. Our Program provides information about hazardous chemicals to a variety of audiences. Some of those audiences include school lab teachers; nail salon, janitorial and landscaping workers and businesses; low income housing maintenance staff; auto repair shops, drycleaners, autobody paint shops, small manufacturers, and a variety of other businesses. We also have developed a rigorous behavior change approach, based on scientific models. That approach is known as Community-Based Social Marketing. However, we also know, from a variety of studies, that information alone does not result in behavior change. More targeted and audience specific marketing approaches are necessary.

We provide information in a variety of ways, incorporating our behavior change models. We use various print media including press releases, fliers in the mail, brochures, publications, wallet pocket cards, reports, etc. We use audio and video media including videos, TV and radio. We maintain an extensive Web site with publically accessible reports and databases. Our Program maintains both household hazardous and business waste phone information lines on a 40 hour a week basis, with recorded information available 24 hours a day. We also respond to voice mails, e-mails and letters requesting information. Staff members present information at conferences and public meetings, make presentations to elected officials and community groups, and to professional and business groups. Our Program is also the originator of the EnviroStars Awards. That program formally recognizes

and certifies businesses that meet certain standards with their use, proper storage and disposal of hazardous products.

Providing accurate and unbiased information is a never-ending effort. We will continue to use the same methods we have used in the past, i.e., audio, video and print media. We have expanded and redesigned our Web site and we are beginning to explore the variety of new social networking technologies including Facebook, Twitter and others. We should also consider more compelling statements on hazards delivered through government bodies that have the recognition and stature to gain public attention, and that have the public's respect. Those might include local, state and federal agencies and legislative bodies, as well as universities, research institutes and other groups with credibility.

Our Program could do more work with regard to encouraging voluntary product labeling or other means of information disclosure. We could also seek more product labeling by working with third parties on product certification.

3.5.4. Structures (Government Mediation Of Markets)

Government mediation of markets, also referred to as “structuring” or regulating markets, can be defined as the act of changing markets that a target audience would be effected by, to get that target audience to change their behavior. This means getting a target audience to do something that they would otherwise not do, or stop doing something that they would otherwise do, without that modification to the market. Policy actions under this approach include government enterprise and market mediation.

The Program is operating through government enterprise by providing service directly to customers and ratepayers, by working through intermediate agencies like sewer districts, and by contracting out to for profit and non-profit firms. We are not in a position, however, to directly modify markets with regard to hazardous household or commercial business products.

We provide direct service through ICT; collection and disposal services at our three fixed facilities, the Wastemobile and the semi-fixed service at the Auburn SuperMall; through our homebound collections service; technical assistance service to business customers; and through our SQG collection services offered at all our facilities. We are providing indirect service through our Program Partners and the special purpose governments like the sewer districts. And we are providing services through contracting out, to for-profit firms in the case of final hazardous waste disposal, and to non-profit groups, such as the Environmental Coalition of South Seattle (ECOSS), for help in communicating about our services to some of our historically underserved populations.

The Program could and should further explore these approaches, and contemplate expanding them to more fully get at some of the more vulnerable and historically underserved populations that we

have not been serving adequately in the past. We might consider expanding the number of external community groups that we interact with and also consider partnering directly with them in the future.

3.5.5. Other/Miscellaneous

The other/miscellaneous approach can be defined as the location for approaches that do not easily fit under the other approaches described previously. These approaches also aim at changing a target audience's behavior. Again, this means getting a target audience to do something that they would otherwise not do, or stop doing something that they would otherwise do, without that approach being applied. Policy actions under this approach include expenditures, voluntary/self-regulation efforts, and hybrid or combined methods.

Our Program currently uses a few hybrid or combined methods. These include providing compliance support through our Environmental Quality Team and its efforts to provide compliance information directly to businesses through field visits and over the phone. We also attempt to provide some technology transfer through our research efforts and support for specific fixes that can address hazards, such as helping to fund a new nail salon table with active integrated venting of solvent gasses, and our help to school lab teachers by providing our school chemicals database.

We could expand our activities in this arena by engaging business more around voluntary/self-regulation. We could encourage government agencies who have enforcement authority to provide flexible compliance in the form of reduced penalties for self-reporting of violations. We could also encourage them to offer variances from regulatory requirements for innovative production, use, storage and disposal methods.

3.6. Summary and Future Direction

In summary, our Program is exercising a variety of policy tools derived from the approaches and actions that have been catalogued previously in this chapter. However, we should redouble our efforts to look at the tools that can be used to see if they are being employed to the fullest extent possible. And, we should look at the numerous tools that we are not using and explore the possibilities for their use. We should be committed, as a Program, to attack our mission with as many approaches that might work, to make the public and environment as safe and as free as possible from hazardous chemicals, products and wastes.

Legal Authority, Organizational Structure and Enforcement



4

4. Legal Authority, Organizational Structure and Enforcement

4.1. Legal Authority Overview

Legal authority for the Program is based on Washington State statute and King County Board of Health Code. Federal law exempts household hazardous waste (HHW) and small quantity generators (SQGs) from federal regulation.

4.1.1. Federal Law

The 1976 Resource Conservation and Recovery Act (RCRA) makes the management of hazardous waste a priority. While it addresses large generators of hazardous waste, RCRA exempts SQGs and HHW from regulation at the federal level. It also delegates the management of hazardous wastes to the states, at their request. In Washington State, the management of hazardous waste was delegated to the Washington State Department of Ecology (Ecology) by the United States Environmental Protection Agency (EPA) through the RCRA State Authorization rulemaking process.

4.1.2. State Laws and Regulations

Hazardous wastes in Washington State are primarily regulated under RCW 70.105, the Hazardous Waste Management Act of 1985, and as amended. In the case of our Program, RCW 70.105.220(1)(a) specifically directed local governments to develop plans to address moderate-risk wastes (MRW). It also required waste characterization studies to help develop a locally appropriate system of managing MRW that would ensure the protection of the environment and public health. Subsection (b) required ongoing public education about MRW and involvement in programs to address it. Subsection (c) required an inventory of all existing generators of hazardous waste and facilities managing hazardous waste within the jurisdiction from data provided by Ecology. Subsections (d), (e) and (f) addressed the public involvement process used in developing the plan; zoning for HHW/SQG facilities; and providing for local government additions to the plan.

Other sections of the Act addressed coordination with other hazardous materials-related plans and policies and with privately-owned hazardous and moderate-risk waste facilities and services. The Act also specified statutory deadlines for local governments to complete their plans, by June 30, 1990; for Ecology approval, by December 31, 1990, or ninety days after submission, whichever was later; and for local government implementation, by December 31, 1991.

While local plans and their implementation were intended to be fluid, allowing for revisions over time, the statute mandated that certain elements be addressed and satisfied by the end of 1991. The Program satisfied these requirements in 1991, as evidenced by Ecology's approval of the 1990

Final Plan.¹ While RCW 70.105.220(6) allowed local governments to amend their plans from time to time, the Act did not require local governments to update their plans and was silent on what the amendments should contain.

In addition to defining the elements required in local plans, the Act defined MRW as “any waste that exhibits any of the properties of hazardous waste but is exempt from regulation under this chapter solely because the waste is generated in quantities below the threshold for regulation and any household wastes which are generated from the disposal of substances identified by the department as hazardous household substances” {RCW 70.105.010(17) (a) and (b)}. The Act also described characteristics that could make substances, chemicals and materials fall under the definition of MRW. In addition to providing definitions, the Act required Ecology to promulgate regulations providing more detailed definitions of household hazardous substances and listings of known hazardous substances at the time.²

Some characteristics of MRW defined by the Act and the Dangerous Waste Regulations include being toxic, mutagenic, teratogenic, carcinogenic, corrosive, reactive, explosive, flammable, and radioactive. Other characteristics have to do with how the substance physically or chemically reacts with the environment. These include: how the waste decomposes, for example, does it generate pressure through decomposition; does it bioaccumulate and concentrate in the food chain; is it persistent, or does it fail to decompose over time; and, does it combine with, or become a part of, other hazardous substances. Finally, the Act was clear in its direction that efforts to address MRW must address impacts to wildlife and the broader environment as well as impacts to humans and public health.

Requirements for the collection and disposal of MRW are set forth in WAC 173-350 Solid Waste Handling Standards. This regulation specified the minimum functional standards for the design and operation of MRW storage and processing facilities, including spill containment, employee training, emergency planning, control of toxic and flammable vapors, and container management. According to the statute, MRW collection staff, hazardous waste transporters, garbage haulers, and solid waste and wastewater employees must be trained in worker right-to-know requirements and receive other safety and health training as specified in RCW 49.17 Washington Industrial Safety and Health Act and under U.S. Department of Transportation regulation 49 CFR 172.704 Hazardous Materials Training.

4.1.3. Local Laws and Agreements

Several local laws, ordinances, and agreements govern how MRW is addressed by the Program and other agencies. Local authority for the Program comes from the King County Board of Health, which is an intergovernmental body composed of health professionals and elected officials from

1 Letter from Washington State Department of Ecology to Diana Gale, Director of the Seattle Solid Waste Utility, dated January 22, 1992.

2 Those further definitions, and a list of substances, are contained in WAC 173-303, the Dangerous Waste Regulations.

the King County Council, Seattle City Council, and Suburban City governments. The Board of Health has authority to enact local ordinances, apply civil penalties for violations, and request criminal prosecution if the violator does not comply with civil enforcement actions. The Board of Health's powers are delineated in RCW 70.05.060, Powers and duties of local board of health. Powers relevant to the Program include maintaining health and sanitary measures; preventing, controlling and abating nuisances; enacting and enforcing local rules and regulations; and setting surcharge fees to fund these activities.

The King County Board of Health provided local authority to the Program through Board of Health Code 2.08, Hazardous Waste Management Coordination Committee (MCC). That code directs the Program to work to ensure that MRW is not commingled with solid waste or disposed of in sewage treatment systems. It concludes that enhanced public education and the enforcement of existing regulations will reduce the quantity of moderate risk waste entering the solid waste stream and sewage treatment systems, and it affirms a regional intergovernmental approach in addressing MRW in King County.

To enable an intergovernmental approach, the code established the MCC, defined its membership, delineated its powers, and assigned it specific duties. Those duties include developing annual budgets and management plans. The code also established the Program's financing mechanism. It directed that surcharge fees be charged on solid waste and sewer utility accounts and on landfill and transfer station usage. The surcharge fees were to be used by King County, the City of Seattle, the suburban cities and the sewer districts, through contracts, to implement the management plan.

King County Code 10.24.040, Hazardous Waste Management Plan, directed King County Solid Waste Division to develop a hazardous waste management plan for the unincorporated portions of King County. The plan was to be a regional plan, developed cooperatively with other agencies in the Program, in accordance with RCW 70.105.220. The Code allowed for the possibility of interlocal agreements between King County and the cities in King County to address MRW. King County has negotiated agreements with all but two of the cities.³ In these agreements, the cities have delegated planning for their MRW to King County.⁴ The duration of those agreements is 30-years, and all extend beyond 2020.

In addition to the Program's authority to address MRW, many local governmental agencies have regulatory authority that affects the handling and disposal of HHW and SQG hazardous waste. These include the authorities, rules and regulations that pertain to solid waste, wastewater, stormwater, public health, city and fire districts, and air pollution control.

3 The exceptions are Seattle and Milton. Seattle addresses MRW as a direct Partner in the Program. Milton has an interlocal agreement with Pierce County to address its solid and hazardous wastes.

4 See King County Solid Waste Interlocal Agreements. Identical standard language is used in all of the agreements that delegate the planning for MRW to King County.

Solid waste ordinances and regulations prohibit disposal of HHW and SQG wastes into the solid waste stream. For example, municipal solid waste programs for both King County and Seattle ban disposal of all SQG MRW, as well as many types of HHW, in municipal solid waste. Many suburban cities have similar prohibitions in their municipal codes and solid waste contracts with commercial haulers.

Wastewater ordinances and regulations limit the discharge of hazardous materials into sanitary sewers or surface water drainage systems under their jurisdiction. The King County Wastewater Treatment Division, which manages the sewerage system for seventeen cities and seventeen sewer utilities in King County, requires notification and preapproval for any discharge of hazardous waste into its system in King County Code 28.84.060. Seattle, suburban cities, and other sewer authorities in King County also have ordinances that prohibit or regulate the discharge of hazardous materials into their sanitary sewers. These prohibitions and limitations, as well as the required monitoring, recordkeeping and management provisions, make it difficult for most SQGs to use a publically owned treatment facility for disposal of hazardous wastes.

Stormwater ordinances and regulations generally prohibit the discharge of petroleum products and hazardous materials into stormwater or storm drains within their jurisdictions. Many cities address stormwater in their comprehensive plans. Some cities, such as Renton and Redmond, have enacted aquifer protection ordinances with strict provisions affecting the use, storage and disposal of hazardous materials within designated aquifer recharge areas.

Local public health statutes, rules and regulations address solid waste and hazardous waste disposal. For example, in King County, the Board of Health Code Title 10 Solid Waste Handling makes Seattle and King County Public Health (Public Health) responsible for issuing operating permits and inspecting solid waste and MRW facilities and collection events. Public Health is also responsible for permitting and inspecting on-site sewage treatment systems. Cities and fire districts have code requirements mandating the safe handling and use of hazardous materials and have inspection and enforcement roles with regard to MRW.

Air pollution control standards, laws and regulations are administered by the Puget Sound Clean Air Agency (PSCAA), the regional air quality authority. The agency sets regulatory limits on the release of volatile organic compounds and other hazardous materials into the air and enforces those regulations.

4.1.4. 1990 Final Plan

The 1990 Final Plan provides support and direction for the Program in diverting MRW from the solid waste stream, sewers and storm drains. Its overall goal is "to protect the environment and public health from the adverse effects of improper handling and disposal of HHW and SQG hazardous wastes," and the 1990 Plan sets forth the following objectives:

- "Reduce the input of hazardous substances to municipal waste streams and the environment by a significant, measurable amount.

- Minimize accidents resulting in worker and public exposure to hazardous waste.
- Emphasize waste management strategies that give priority to waste reduction and recycling.
- Foster an ethic of personal responsibility for waste management decisions among the public, businesses and government.
- Be comprehensive; address all aspects of the issue, including all areas of the county, all waste streams and targeted audiences.
- Emphasize education over enforcement as a means of attaining compliance.
- Be flexible; allow for changes in the legal and planning environment.
- Have the practical resources and support to ensure implementation while recognizing the unique capabilities and limitations of different governments.
- Involve all key parties, public and community organizations, state and local public agencies, small businesses and hazardous waste management companies in Plan development and implementation.”⁵

4.1.5. 1997 Plan Update

The mission set forth in the revised 1997 Plan was “to protect public health and the environment from adverse effects of improper handling and disposal of household hazardous waste and small quantity generator hazardous waste.” It was to be implemented through the following general goals:

- “Continually improve the efficiency and effectiveness of LHWMP [Local Hazardous Waste Management Program] in accomplishing the Plan’s mission.
- Foster an ethic of responsibility among those who produce, sell, and use hazardous products for minimizing risks to public health and the environment from hazardous wastes.
- In priority order, promote the following state hazardous waste management strategies, as appropriate to the waste type: waste reduction; recycling; physical, chemical, and biological treatment; incineration; solidification or stabilization; and landfill.
- Be responsive to the needs and expectations of the public.
- Encourage cooperation and coordination among all levels of government, citizens, and businesses in managing hazardous wastes.
- Minimize gaps and overlaps in responsibilities of governmental agencies addressing hazardous waste management issues.”

It proposed to accomplish that mission and those goals through HHW education and collection; SQG education, technical assistance and waste management; compliance assistance; and evaluation.⁶

5 Solid Waste Interlocal Forum, *Local Hazardous Waste Management Plan for Seattle-King County: Final Plan and Environmental Impact Statement for the Management of Small Quantities of Hazardous Waste in the Seattle-King County Region & Appendices A & B*, (Seattle: LHWMP, November 1990), pp. 1-4 – 1-6. Cited hereafter as *1990 Final Plan*.

6 Local Hazardous Waste Management Program in King County, *Local Hazardous Waste Management Plan for King County: Final Plan*, (Seattle: LHWMP, May 1997), pp. 1-4 – 1-5. Cited hereafter as *1997 Plan Update*.

4.1.6. Annual Work Plans and Budgets

Annual project work plans and budgets are developed by the Program staff and supervisors and approved by the MCC. Project work plans allocate resources for staff and contractors, and for direct and indirect costs required to accomplish the outcomes specified in the work plan.

Project work plans and their associated budgets direct Program work both substantively and procedurally. Substantively, the Program focuses on specific: hazards, for example certain chemicals, pesticides, products; places, such as businesses with onsite sewage systems, nail salons, school chemistry labs, subsidized housing facilities; and people like the elderly, homebound, immigrant and non-English speaking populations, children, pregnant women and women of child-bearing age. Procedurally, policy is developed as projects are implemented. Program procedures develop over time, using staff expertise, and through trial and error, when new projects are developed or new issues arise.

4.1.7. MCC Policies and Decisions

In addition to the federal, state and local statutes and codes directing the Program, the policies and decisions of the MCC provide direction to the Program, especially with regard to issues not addressed elsewhere. For example, the MCC oversees the Program's policies and procedures related to revenues, expenditures, budget development, fund management, and the allocation of capital facilities costs. Other examples include approving new collection facilities or services, changing existing services, determining legislative priorities and approving annual work plans and budgets. The MCC also makes decisions on unique issues or situations that arise within the Program on an as needed basis.

4.2. Organizational Structure

4.2.1. Organizational Structure Overview

The organizational structure of the Program was defined in the 1990 Plan and based on the idea that certain agencies should be involved and represented. The political entities involved in developing the 1990 Plan, including the City of Seattle, King County and the Suburban Cities, made recommendations about the Management Coordination Committee's (MCC) composition and decision-making process.⁷ These recommendations were then considered and approved by the Solid Waste Interlocal Forum (Forum), comprised of elected officials from the City of Seattle, King County and the Suburban Cities in King County. After the Plan had been approved by the Seattle City Council, the King County Council, and the city councils in a majority of the Suburban Cities, the Forum adopted a resolution to approve the Plan.⁸ The Plan was then submitted to Ecology for final approval.

⁷ 1990 Final Plan, p. 3 of the Forward.

⁸ Solid Waste Interlocal Forum Resolution 90-001, passed on January 12, 1990.

4.2.2. Codification of the MCC and the Role of the Board of Health

Implementation of the 1990 Plan included submitting a package of proposed surcharge fees and language establishing the MCC to the Seattle City Council, acting as the Seattle Board of Health, and to the King County Board of Health. The City of Seattle adopted the proposals in the Seattle City Code,⁹ and King County adopted identical language in the Board of Health Code.¹⁰ When the two Boards of Health were merged in 1995, maintenance and review of the Program's enabling code language moved to the new joint Board of Health, known as the King County Board of Health.

The Board of Health plays an ongoing role in the Program by providing direction and by reviewing and approving surcharge fees to finance the Program. The Board of Health has the authority to set our surcharges to sewer and solid waste utility fees, landfill fees and transfer station tipping fees, countywide. Surcharges to all of those fees are used to fund the Program. In addition, as an intergovernmental legislative body, the Board of Health provides legislative branch oversight to complement the executive oversight exercised by the MCC.

4.2.3. Ecology Recognition of MCC

In a 1992 letter to the Program, Ecology specifically accepted the MCC as the entity responsible for implementing and updating the Plan.¹¹

4.2.4. MCC Composition

The original five representatives to the MCC were from the Municipality of Metropolitan Seattle (METRO), the City of Seattle, King County, the Seattle-King County Health Department, and the Suburban Cities Association.¹² Over time, as governments reorganized and agencies merged, the MCC membership changed. Its current composition is delineated in Board of Health Code 2.08.080, which says: "The committee shall be composed of five members:

1. The director of the King County Department of Natural Resources – Solid Waste Division or his/her designee;
2. The director of City of Seattle Public Utilities or his/her designee;
3. A representative appointed by the Suburban Cities Association;
4. The director of the King County Department of Natural Resources – Water and Land Resources Division or his/her designee; and
5. The director of the Seattle-King County Department of Public Health or his/her designee."

9 Seattle Municipal Code 10.76.

10 King County Board of Health Code 2.08.

11 Letter from Washington State Department of Ecology to Diana Gale, Director of the Seattle Solid Waste Utility, dated January 22, 1992.

12 1990 *Final Plan*, pp. 3-50 – 3-51 and figure 3-5.

4.2.5 MCC Powers, Duties and Decision-making

The powers and duties of the MCC were also delineated in Board of Health Code 2.08.085. That title directs the MCC to develop an annual management plan and budget to address MRW. It directs the MCC to make decisions by consensus, and if consensus can not be reached, to submit the issue to the Board of Health for a decision. Code provisions empower the MCC to contract with the City of Seattle, suburban cities and suburban sewer districts to undertake portions of the Program's work.

In addition to approving annual plans and budgets for the Program, the MCC periodically recommends surcharge fee rate changes to the Board of Health to fund the Program. To accomplish these tasks, background work is undertaken by staff from the Program partner agencies.

4.2.6. Office of the Program Administrator

In 1999, the MCC created the position of Program Administrator to provide support in accomplishing the MCC's mandated duties and the Program's mission. The first person was hired to fill that position in 2000. The Program Administrator accepts direction from the MCC, and works with the MCC to fulfill its obligation to provide Program services to the ratepayers and the public at large. The Program Administrator coordinates and works with senior staff from the Program Partner agencies and provides general leadership to Program staff. Specific duties of the Program Administrator include: Planning the Program's work and financing so that our services are current and relevant to the community's needs;

- Increasing equity with respect to the Program's services;
- Effectively managing and coordinating implementation of the Program;
- Stewarding the Program fund and its HHW and SQG sub-funds;
- Evaluating the results, and adjusting efforts based on that evaluation; and
- Being accountable to the public by reporting results to our customers, ratepayers, Program Partner agencies, elected officials and others.

4.2.7. Core Team

In addition to the Office of the Program Administrator, a group of senior staff from each Program Partner agency, known as the Core Team, works together to implement the Program. The Core Team, mirroring the MCC, is composed of senior staff from Seattle Public Utilities, King County Solid Waste Division, King County Water and Land Resources Division, Public Health - Seattle & King County, and some Suburban Cities. The Core Team implements the Program by directing staff at each of the Program Partner agencies.

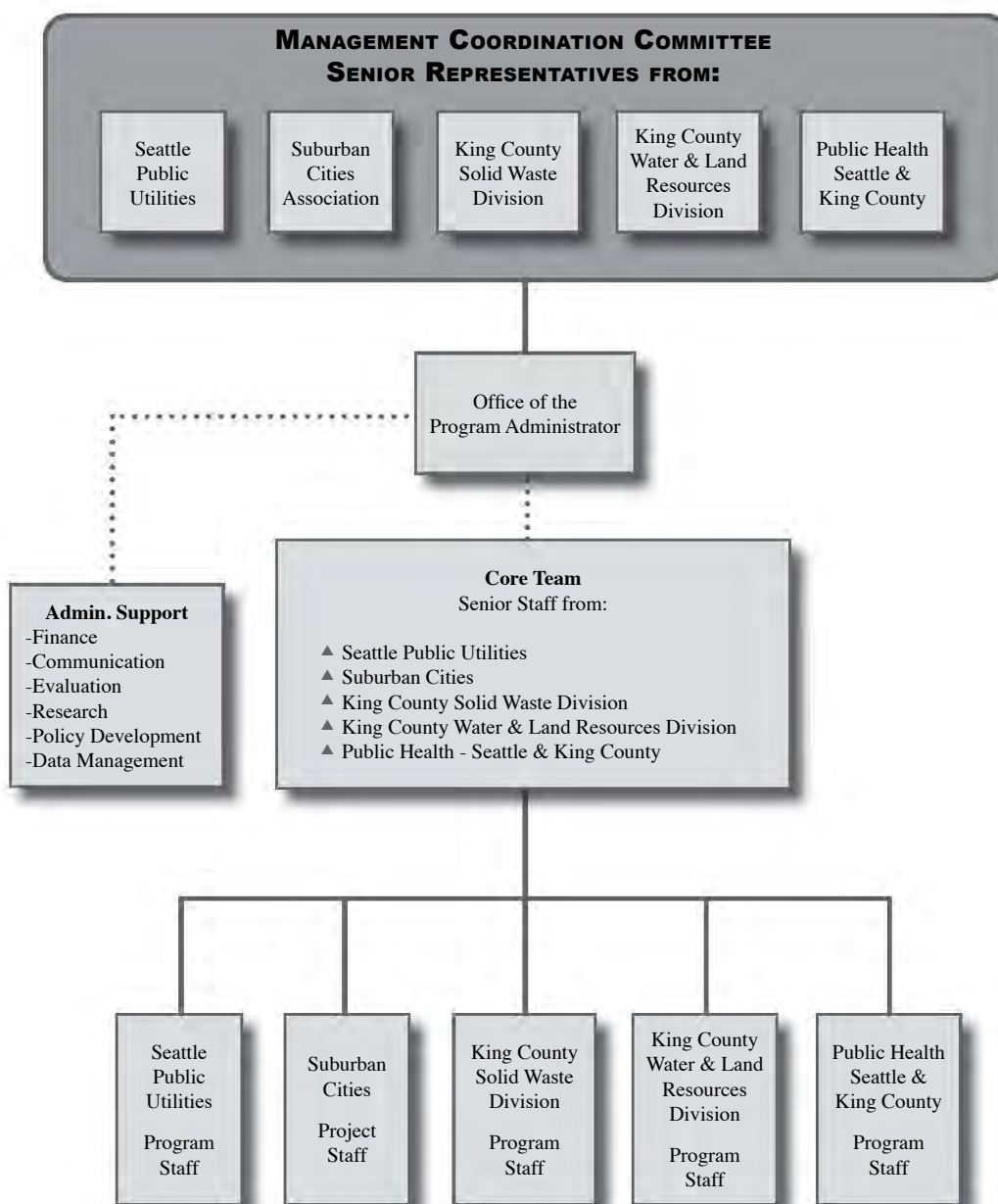
4.2.8. Other Work Teams

Numerous standing and *ad hoc* committees and work teams have been developed that address specific Program areas, such as Program service levels. Two current standing committees address

Program communications (the Communications Advisory Committee) and HHW collection services (the HHW collection committee). Work teams formed through the office of the Program Administrator to serve cross-Program functions include:

- Communications and Web Applications
- Data Management
- Service Equity
- Administration
- Research Services
- Policy Development
- Fund Management
- Evaluation

Figure 4-1. Program Organizational Chart



4.3. Regulatory Review, Compliance and Enforcement

Many federal, state, and local regulations govern or affect management of HHW and SQG hazardous waste. Unless otherwise indicated, the laws and regulations summarized in this section were in effect at the time of the 1997 Plan Update.

4.3.1. Federal Regulations

This section describes key provisions of the federal laws address hazardous materials and wastes.

Resource Conservation and Recovery Act

The 1976 Resource Conservation and Recovery Act (RCRA) provides a comprehensive framework for managing solid and hazardous waste so as to eliminate or minimize public health threats and environmental contamination. RCRA was modified by the Hazardous and Solid Waste Amendments (HSWA) in 1984. HSWA revised the minimum technical standards for the design and operation of solid waste facilities as a result of concerns about the disposal of unregulated quantities of hazardous waste at municipal landfills.

RCRA Subtitle C, the hazardous waste management program, and Subtitle D, the solid waste program, provide the primary sources of federal regulation associated with household and SQG hazardous waste. Subtitle C establishes a framework for managing hazardous waste by regulating generators who produce and accumulate hazardous waste in quantities above limits specified by EPA or state rules; waste transporters; and treatment, storage and disposal facilities (TSDs) handling the waste.

Hazardous waste generated or stored in quantities above the limits specified by EPA or state rules must be tracked by manifest from the point of generation to the ultimate disposal site, better known as “cradle-to-grave” tracking. Business and institutional generators producing and storing hazardous wastes below the specified limits are not fully regulated provided that they comply with rules regarding the designation, management and reporting of wastes. HHW is categorically exempt from RCRA regulation.

The EPA implements and enforces RCRA, although Subtitle C administration and enforcement may be delegated to states that meet or exceed Subtitle C requirements. Washington State has been authorized to implement the RCRA Subtitle C program, and Ecology administers it.

RCRA, Subtitle D, encourages state-governed solid waste management plans and sets out the minimum technical standards for construction and operation of solid waste disposal facilities. Subtitle D requires a permit program to ensure that landfills receiving HHW and SQG hazardous waste meet minimum standards to prevent the release of contaminants.

Universal Waste Rule

In 1995, the EPA adopted the Universal Waste Rule, 40 CFR Part 273, to allow generators of certain hazardous wastes to use alternative regulatory requirements for those wastes in place of the more complex hazardous waste requirements. Wastes covered by the Universal Waste Rule (UWR) are typically generated in small quantities by numerous businesses. They include batteries, mercury-bearing thermostats and fluorescent lamps. UWR are intended to promote recycling as well as proper disposal, and they ease some of the regulatory requirements for storing, collecting, and transporting universal wastes.

Since states are free to adopt any portion of the UWR, there is flexibility in regulating the specific waste streams. States may also petition to allow additional wastes to be managed under the UWR at the state level, without having them added to the list of federal universal wastes. The easing of full RCRA Subtitle C regulations for certain universal wastes is intended to encourage more extensive collection and recycling programs for these wastes.

Mercury-Containing and Rechargeable Battery Management Act

The 1996 Federal Mercury-Containing and Rechargeable Battery Management Act, Public Law 104-142, provides for uniform labeling of batteries, requires products using rechargeable batteries to allow for their easy removal, streamlines regulation of used nickel-cadmium batteries, and prohibits the sale of mercuric-oxide button cell batteries and other mercury-added batteries. The industry-supported nonprofit Rechargeable Battery Recycling Corporation (RBRC) was established to educate the public about rechargeable battery recycling and to implement recycling programs where none exist. RBRC is helping local agencies, institutions, retailers, and other businesses set up collection and recycling programs, and is paying for battery shipment and recycling costs. Batteries are sent to a metals reclamation facility for recovery of their nickel, cadmium, and steel content.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), more commonly known as the “Superfund” act, complements RCRA by providing for the cleanup of sites contaminated by hazardous waste. Many of the sites addressed under CERCLA are inactive or abandoned, having been contaminated before RCRA was enacted, when little was known about the effects of hazardous chemicals on human health and the environment. CERCLA provides EPA with the financial resources and authority to clean up contaminated sites. EPA, along with state regulatory agencies, may arrange for the cleanup of contaminated sites by entering into agreements with responsible parties, issuing orders to require cleanup, or directly performing the cleanup. The Superfund sites in King County are listed in Appendix B.

Emergency Planning and Community Right to Know Act (EPCRA)

The 1986 Superfund Amendments and Reauthorization Act (SARA) created the Emergency Planning and Community Right-to-Know Act (EPCRA), also known as SARA Title III. The statute improves community access to information about chemical hazards, and it helps states, tribes and local

governments develop chemical emergency response plans. EPCRA requires creation of state/tribal emergency response commissions (SERCs/TERCs) to coordinate certain response activities, mandates local emergency planning committees (LEPCs), and requires notifications about emergency planning, emergency releases, and chemical inventories and releases under 40 CFR Parts 350-372. EPCRA establishes a public right to know about toxic chemicals released into the environment by requiring facilities in certain industries to report annually on the chemicals released to the air, water and land. Started in 1988, the Toxics Release Inventory contains information on releases of nearly 650 chemicals and categories. SQGs are not typically required to report on chemicals they store or release because their quantities are too small.¹³

Other Federal Laws

Other federal legislation related to hazardous waste management include the:

- Hazardous Materials Transportation Act and the Hazardous Materials Transportation Uniform Safety Act - regulates the transportation of hazardous materials, including wastes;
- Toxic Substances Control Act - regulates the manufacture and use of chemicals that pose unreasonable risks to human health or the environment;
- Federal Insecticide, Fungicide and Rodenticide Act - regulates the manufacture, labeling, application, storage and disposal of pesticides;
- Safe Drinking Water Act - sets maximum contaminant levels for drinking water supplies, including surface and groundwater sources;
- Clean Air Act - regulates air pollutant emissions. (A 1996 rule set standards for controlling emissions of methane and other organic compounds at municipal solid waste landfills.); and
- Clean Water Act, - regulates discharges to waters through the National Pollutant Discharge Elimination System (NPDES), a permit program that regulates direct discharges of pollutants to navigable waters, and through pretreatment standards that regulate discharges to publicly-owned treatment facilities.

Ecology has been delegated authority to issue NPDES permits in Washington State to facilities that discharge wastewater directly into surface waters. Locally, all sewage treatment plants have NPDES permits. Permit conditions specify allowable effluent concentrations, including limitations for certain priority pollutants such as heavy metals.

4.3.2. State Regulations

This section describes state solid and hazardous waste management laws and regulations, as well as the State's Waste Management Priorities, the Model Toxics Control Act, the Used Oil Recycling Act and the Electronic Product Recycling Act.

¹³ The threshold levels for Emergency and Hazardous Chemical Inventory Reporting (Section 312, SARA Title III) are 500 pounds at any one time of extremely hazardous substances or 10,000 pounds at any one time for hazardous substances. The thresholds for reporting releases are even higher for most compounds, except for certain persistent bioaccumulative and toxic chemicals (PBTs). Some businesses, such as distributors, may not generate hazardous wastes, but may store large quantities of chemicals on-site.

Solid Waste Management Act

Solid waste handling and disposal are regulated under the Solid Waste Management Act (SWMA), Chapter 70.95 Revised Code of Washington (RCW). SWMA provides for the development of both statewide and local solid waste management plans; establishes minimum functional standards for solid waste handling and disposal; and sets criteria for siting solid waste facilities. The statute establishes a waste management hierarchy in which waste reduction and recycling are the most preferred options and land disposal is least preferred. These requirements are codified in the State Solid Waste Handling Standards, WAC 173-350, were adopted in 2003, and became effective in 2005.

WAC 173-350-360 specifies standards for facilities that accept segregated moderate risk waste, certain MRW transporters, mobile collection systems like the Wastemobile, collection events, limited MRW facilities, and product take-back centers. Mobile systems and collection events are exempt from solid waste handling permitting requirements, per RCW 70.95.305.¹⁴ In addition, the standards do not apply to fully regulated dangerous wastes, universal wastes regulated under WAC 173-303, or conditionally exempt SQGs managing their own wastes in compliance with required standards.¹⁵

The SWMA defines proper handling requirements for vehicle batteries, in RCW 70.95.610-670, and prohibits their disposal in the solid waste stream. Retailers selling new auto batteries are required to accept used vehicle batteries for recycling. Purchasers are encouraged to return used batteries to retailers, since a \$5.00 minimum charge is applied to the sale of new batteries. These requirements are codified in WAC 173-331.

Hazardous Waste Management Act

The state Hazardous Waste Management Act (HWMA), 70.105 RCW, regulates the transport, treatment, storage and disposal of hazardous waste. The statute requires a comprehensive statewide hazardous waste plan; local hazardous waste management plans; dangerous waste regulations that address hazardous waste generation, handling and disposal; criteria for siting hazardous waste management facilities; and identification of local areas that meet siting criteria and zoning for hazardous waste management facilities.

Ecology has provided rules to implement the HWMA. The Dangerous Waste regulations, Chapter 173-303 WAC, address the designation of dangerous wastes and the requirements for generators, transporters, and facilities handling these wastes. Waste generators must identify hazardous wastes at the business site, properly store and label wastes, and ensure that wastes are handled by qualified transporters and are disposed at a permitted facility. Generators are responsible for their wastes until

¹⁴ See RCW 70.95.305 and WAC 173-350-360(2).

¹⁵ See WAC 173-350.040 and 173-303-070(8) (b).

such point as the wastes are no longer hazardous.¹⁶ Failure to comply with requirements can result in civil and criminal penalties.¹⁷

Businesses and institutions that generate small quantities of waste (SQGs) are conditionally exempt from most of the requirements of WAC 173-303, provided that they do not generate more than 220 pounds of dangerous waste or 2.2 pounds of extremely hazardous waste per month and never accumulate more than 2,200 pounds at any one time. They must also properly store, transport and recycle/dispose of their wastes at a permitted hazardous waste facility. SQGs that fail to comply with these requirements become fully regulated generators and must satisfy all requirements of WAC 173-303.¹⁸ These regulations do not apply to hazardous wastes generated in households.¹⁹

The Dangerous Waste Regulations are amended from time to time to streamline requirements, incorporate federal rules and otherwise improve the hazardous waste management system. For instance, a November 1995 amendment to the Dangerous Waste Regulations allowed SQGs to accumulate up to 2,200 pounds of dangerous waste, up from the previous 220-pound limit. This change allowed businesses that had been regulated because they stored between 220 - 2,200 pounds of hazardous waste to assume SQG status.

Similarly, changes to the definition of what is “counted” as a hazardous waste affect a generator’s regulatory status. For instance, waste antifreeze is no longer counted as a hazardous waste when best management practices, such as recycling, are used. Although changes to regulatory definitions help some businesses and institutions become SQGs instead of fully regulated generators, many businesses/institutions also accomplish this by reducing the amount of hazardous waste they generate through pollution prevention planning and technical assistance.

Waste Management Priorities

The HWMA establishes a hierarchy for managing wastes, with waste reduction and recycling being the highest priorities. These are followed, in order of priority, by physical, chemical and biological treatment, incineration, solidification/stabilization treatment, and landfilling. These priorities are reflected in the state’s updated solid and hazardous waste plan, called the Beyond Waste Plan. The

¹⁶ These requirements are contained in WAC 173-303.

¹⁷ According to WAC 173-303-950, violations include transporting dangerous waste to a facility which does not have a permit; transferring, treating, storing or disposing of dangerous waste without a permit; or falsely representing information in labels, manifests, or other documents used for the purpose of compliance with the chapter. The penalties are described in Chapter 70.105 RCW.

¹⁸ See Ecology’s fact sheet comparing the regulatory requirements for SQGs with those for medium and large quantity generators at www.ecy.wa.gov/pubs/981252hwtr.pdf.

¹⁹ WAC 173-303-071(3) (c). Following federal RCRA language, Washington State defines household waste to include waste from single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day use recreation areas.

Beyond Waste Plan emphasizes preventing environmental and health problems by reducing the use of hazardous materials and generation of hazardous wastes.²⁰

The HWMA required local jurisdictions to develop and implement local hazardous waste management plans by December 31, 1991.²¹ Local hazardous waste plans are intended to identify regional hazardous waste management needs and provide long-term programs for meeting those needs. They are intended to address those hazardous wastes generated by residents (HHW) and in small volumes by businesses and other conditionally exempt small quantity generators (SQGs). Control of HHW and SQG wastes falls primarily to local governments. Local governments, as well as hazardous waste management firms, provide waste collection, transfer, recycling, and disposal services for their communities. Local governments maintain the bulk of regulation and enforcement responsibilities for moderate risk waste management, including activities related to facility siting, permitting, and inspections.

The adoption of the 1990 Local Hazardous Waste Management Plan in King County established the Local Hazardous Waste Management Program in King County. Implementation of that Plan began in 1991.

Model Toxics Control Act

The Model Toxics Control Act, RCW 70.105D, provides for the identification and cleanup of contaminated sites in Washington State. The act assigns liability for damages to the environment and human health, provides enforcement authority to Ecology, and establishes penalties for failure to comply with Ecology orders. The state toxics control account, created by the statute, funds state hazardous and solid waste planning, enforcement and technical assistance, remedial actions, public education, and emergency response training. Local accounts created by the statute provide grants to local governments for remedial actions and local solid waste and hazardous waste programs. See Appendix B for a list of known and suspected sites in King County.

Used Oil Recycling Act

The 1991 Used Oil Recycling Act, Chapter 70.95I RCW, required each local hazardous waste management plan to establish used oil collection sites based on local goals, enforce sign and container requirements, educate the public on used oil recycling, and create funding estimates for used oil collection. Local governments must also submit annual reports to Ecology describing the number of collection sites and amounts of used oil collected from households. Requirements for transport, treatment, recycling and disposal of used oil are also specified in the Used Oil Recycling Act. In 1993, the Program developed a used oil recycling element to supplement the 1990 Plan, and it submits annual reports describing used oil collection sites and quantities.

20 The 2004 *Beyond Waste Plan* is available on Ecology's Web site (Washington State Department of Ecology, *Beyond Waste: The Summary of the Washington State Hazardous Waste Management Plan and Solid Waste Management Plan* (Pub. No. 04-07-22), (Olympia, WA, November 2004). Guidance on reducing small volume wastes generated by households and businesses can be found at www.ecy.wa.gov/beyondwaste/reduceToxics.html.

21 See RCW 70.105.220 (8).

Electronic Product Recycling Act

In 2006, the Washington legislature passed the Electronic Product Recycling Act, RCW 70.95N, requiring a convenient, safe and environmentally sound system for collecting and transporting covered electronic products. Covered electronics include televisions, computers, computer monitors and portable or laptop computers. The statute mandated a system that encouraged the design of less toxic and more recyclable electronic products and that shared responsibility for the system among all stakeholders. Manufacturers must finance the collection, transportation and recycling system. Regulations set by Ecology in WAC 173-900 govern program implementation.

The E-Cycle Washington program, launched January 1, 2009, provides recycling for unwanted TVs, monitors, computers and laptops from residents, small businesses, charities, school districts, and small governments. The system is available at no charge at registered collection sites throughout Washington.

4.3.3. Local Regulations

Numerous local agencies have regulatory authority that affects the handling and disposal of moderate risk waste.

Public Health Regulations

Public Health – Seattle & King County (Public Health) is responsible for enforcing State Board of Health statutes, rules and regulations, and local health department rules and regulations. Public Health has broad authority to adopt regulations pertaining to hazardous waste in order to protect public health. This includes authority to regulate disposal of HHW and SQG hazardous waste. Public Health issues operating permits to solid and moderate risk waste facilities, inspects the facilities, and reviews waste screening and disposal of special wastes. Public Health also reviews suburban city HHW collection events. Additionally, Public Health permits and inspects on-site sewage systems, or septic systems. In 2008, Public Health worked with the Program to strengthen on-site septic system codes related to hazardous wastes.

Title 10 of the King County Board of Health Code requires solid waste facilities to conform, as applicable, to the Local Hazardous Waste Management Plan, and it regulates moderate risk waste facilities, ten-day storage facilities, mobile collection services, and collection events. Title 13 of the King County Board of Health Code prohibits putting hazardous materials into an on-site sewage system and also prohibits the following: strong bases and acids, organic solvents used for cleaning, sewage system additives not specifically approved by the Washington State Department of Health, industrial wastewater, and any other waste components atypical of residential sewage.

Solid Waste Regulations

King County Solid Waste Division coordinates regional solid waste planning on behalf of unincorporated areas and all suburban cities in King County. King County Code 10.08.050 prohibits

the disposal of hazardous wastes from SQGs or fully regulated generators at solid waste transfer and disposal facilities. The Cedar Hills Regional Landfill does accept “special wastes” as defined by King County rules. Special wastes, like asbestos and contaminated soil, usually require specific handling and disposal, and must be approved for landfill disposal by either King County Solid Waste Division or by Public Health.

While King County transfer facilities and landfills currently do accept some types of HHW for disposal, other types of wastes are not accepted. For example King County does not accept petroleum-containing wastes, such as motor oil, oil-based paints, wood preservatives, extremely hazardous wastes, such as banned or restricted-use pesticides, vehicle batteries, or mercury-containing products like thermostats, thermometers, fluorescent bulbs and tubes, button batteries and switches. Although King County solid waste facilities can receive certain types of HHW, the public is encouraged to use up hazardous products or dispose of these materials through HHW collection facilities or special collection events.

Waste screeners at the transfer facilities and landfill remove hazardous and other unacceptable wastes from the solid waste stream before it is landfilled. The Solid Waste Division has the authority to impose fines and penalties for violations under King County Code 10.08.100.

Seattle Public Utilities oversees the City of Seattle’s solid waste system. Seattle Municipal Code 21.36.025 prohibits SQG hazardous wastes from commercial and residential garbage containers, and Municipal Code 21.36.026 recommends that no household hazardous wastes be put in garbage containers. The code specifically prohibits disposal of the following items into the garbage: non-edible oils; flammable liquids and solids including fuels, solvents, paint thinners, and degreasers; pesticides, including herbicides, insecticides and wood preservatives; corrosive materials; PCB capacitors and ballasts; mercury, such as thermometers and mercury switches; vehicle batteries; hobby chemicals and artists’ paints; and liquid paints. Empty containers that formerly held hazardous products can be discarded as refuse. The code mandates disposal of HHW at special collection facilities and/or events. SQG hazardous wastes must be managed according to the provisions of Chapter 173-303 WAC, the State Dangerous Waste Regulations.

Waste screeners at Seattle transfer facilities help prevent the disposal of hazardous and other unacceptable wastes into the solid waste system. Similarly, loads of garbage arriving at the Columbia Ridge Landfill in Arlington, Oregon are screened by Washington Waste Systems.²²

The contracts between cities and their solid waste haulers typically specify that haulers are not required to empty dumpsters containing hazardous waste. The contracts generally contain language prohibiting disposal of hazardous waste in the trash.

²² Special wastes from the City of Seattle must be approved for disposal by Public Health. (Steve Burke, Public Health Waste Characterization Program, personal communication with Liz Tennant, Local Hazardous Waste Management Program, December 7, 2009.)

Wastewater and Stormwater Regulations

Wastewater is regulated by King County and by independent and municipal sewer districts. Discharges into the stormwater drainage system are regulated by King County, the City of Seattle, and other municipalities under a National Pollutant Discharge Elimination System (NPDES) General Permit issued by Ecology.

King County Wastewater Treatment Division (WTD) treats wastewater for most of the urban areas in the county. The main sewerage conveyance trunk is managed by WTD, and the side sewer lines are managed by the direct sewer service providers, including the sewer districts and cities. Each treatment plant operates under a state-issued NPDES permit that governs the quality of effluent discharged from the treatment plant to surface waters. WTD's Industrial Waste Division (IW) is a delegated Pretreatment Authority under the federal Clean Water Act, 33 U.S.C. 1251 et seq., and the General Pretreatment Regulations, 40 CFR 403. IW's role is to monitor the wastes that pass through or interfere with publically operated treatment works (POTWs) in order to protect the wastewater treatment plants, ensure worker safety, and ensure that the County is in compliance with its NPDES permits. Businesses and other non-domestic wastewater sources are prohibited from discharging wastewater that creates a fire or explosion hazard, is corrosive (pH < 5), or contains solid or viscous pollutants that could obstruct flow or exceed temperature limits.²³ There are also discharge limits for heavy metals and cyanides, corrosives (pH), hydrogen sulfide, and organic compounds.²⁴ In addition, many industries must pretreat wastewater before discharging it into the sewer system.²⁵ IW issues varying types of permits, including permits for industrial users of its system, discharge authorizations, and letters of approval.

The municipal and regional sewer districts that contribute wastewater to the King County system may impose their own, more stringent discharge limits, and independent sewer districts set their own discharge limits. The independent districts are Lakehaven Utility District, Midway Sewer District, Southwest Suburban Sewer District, and sewer operations in the cities of Duvall, Enumclaw, North Bend and Snoqualmie.

King County's Water and Land Resources Division (WLRD) works in collaboration with other entities to protect watersheds and wastewater systems, minimize flood hazards and protect water quality in King

23 Prohibited discharge standards can be found at www.kingcounty.gov/environment/wastewater/IndustrialWaste/Limits/Prohibited_discharges.aspx

24 For the full list of discharge limits see www.kingcounty.gov/environment/wastewater/IndustrialWaste/Limits/KCLimits.aspx.

25 The federal government has established discharge limits for 20 specific industries. These businesses must obtain a full King County permit regardless of the volume of their wastewater discharge. Information about these requirements can be found at: www.kingcounty.gov/environment/wastewater/IndustrialWaste/Limits/CategoricalLimits.aspx.

County. King County Code, 9.12.025, prohibits the discharge of many contaminants²⁶ into surface and stormwater, ground water, and Puget Sound. WLRD responds to complaints concerning discharges of problem materials into drainage systems within its jurisdiction and provides technical assistance to businesses on drainage quality issues.

The City of Seattle's Stormwater Code, SMC 22.800²⁷, prohibits the discharge of non-stormwater to the municipal storm sewer system in the City of Seattle. The list of prohibited discharges is similar in scope and nature to King County's, and Seattle has programs to regulate these. Seattle Public Utilities provides technical outreach, conducts inspections of pollution-generating activities, responds to water quality complaints, and enforces compliance.

Many suburban cities have ordinances that prohibit or regulate the discharge of hazardous substances to their sanitary sewers and/or drainage systems, often using language similar to that in the King County code. Renton and Redmond have also enacted aquifer protection ordinances with strict provisions governing the use, storage, and disposal of hazardous materials within sensitive aquifer recharge areas. Some of the larger cities, such as Bellevue, offer business technical assistance on drainage issues. Bellevue also has an active stormwater source control program.

Fire Department Regulations

City fire departments and fire districts require the safe handling, use and storage of hazardous materials in their jurisdictions. These agencies provide inspection, compliance, and enforcement services under national, state and local regulations. Cities and fire districts may also have municipal codes that vary from city to city or district.

Washington State has adopted the International Fire Code (IFC) through RCW 19.27.031. Chapters 27-44 of the IFC mandate specific requirements for the storage and use of hazardous materials. While local codes are based upon the IFC, they reflect the special needs of a city or district. In some instances, local codes are more stringent than the IFC provisions.

Air Pollution Control Regulations

The Puget Sound Clean Air Agency (PSCAA) is a special-purpose, regional agency chartered by the state, which works in partnership with the EPA and Ecology. PSCAA's jurisdiction covers King, Kitsap, Pierce and Snohomish Counties. That area covers 6,300 square miles and more than 3.5 million people, which is over half the State's population.

26 Contaminants prohibited from discharge into King County's surface and stormwater include: petroleum products including oil and gasoline; antifreeze and other automotive products; flammable or explosive materials; batteries, acids, alkalis or bases; paints, stains, resins, lacquers, or varnishes; degreasers and solvents, drain cleaners; pesticides, herbicides or fertilizers; ammonia, chlorine, bromine and other disinfectants; chemicals not normally found in uncontaminated water; or "any hazardous material or waste not listed above."

27 For more information on the City of Seattle Stormwater Code, see www.seattle.gov/dpd/Planning/Stormwater_Grading_and_Drainage_Code_Revisions/Overview/default.asp.

Several air quality issues overlap the Program's focus. The release of solvents and other volatile organic compounds (VOCs) to the air from painting, refinishing and other activities, and the incidental releases of vapors from materials that otherwise would be hazardous waste are two of these. To minimize the release of pollutants to the air, PSCAA requires high volume, low-pressure equipment in spray coating operations in autobody, fiberglass and aerospace industries. It also requires the use of low VOC solvents or the capture/containment of high VOC solvents.

PSCAA also regulates asbestos-related activities by requiring the following: asbestos surveys in renovation and demolition projects; project notification; specific asbestos removal procedures; and special disposal of asbestos-containing waste materials. The Program is not directly involved in asbestos management.

Health and Safety Regulations

State and federal regulations govern employee exposure to hazardous chemicals. The federal Occupational Safety and Health Act (OSHA), and the Washington Industrial Safety and Health Act (WISHA), require that employees receive hazardous substance training and information under worker "right-to-know" laws. These acts mandate proper labeling of hazardous materials and information on the dangers associated with exposure to hazardous materials.

Workers handling hazardous wastes, including those at MRW collection facilities, must have health and safety, and hazard communication training. The U.S. Department of Transportation requires hazardous waste transporters to provide safety and regulatory training for their employees.

Employees of solid waste and wastewater facilities must be trained in worker right-to-know requirements, blood borne pathogens, hazardous materials awareness, and asbestos awareness. Additional training may include hearing conservation, use of protective equipment, CPR and first aid.

Garbage haulers are required to have worker right-to-know and blood borne pathogen training. They must also receive appropriate training and equipment to protect their health and safety.

4.3.4. Compliance and Enforcement Efforts

Since its inception, the Program has used a combination of technical assistance, incentives, and collection services to encourage residents and conditionally exempt SQGs to reduce their use of hazardous materials and to properly use, store and dispose of hazardous wastes. The 1990 Plan did not include explicit enforcement authority. The Program's compliance strategy has been to work with businesses and other SQGs until they comply, and if they do not, to refer them to agencies that have enforcement authority. These strategies have proven effective for approximately 85 percent of the businesses contacted by the Program. These efforts complement wastewater source control programs by helping to reduce the use of hazardous materials, as well as the quantities of hazardous waste going into municipal wastewater and solid waste streams, and the environment.

Waste Reduction and Compliance with Dangerous Waste Regulations

The Program promotes waste reduction and regulatory compliance by providing SQG businesses and other organizations with specific information, as well as general guidance, about waste management and disposal. For example, the Hazardous Waste Directory describes how specific waste streams must be handled and provides a list of vendors that will manage each type of waste. The Program also provides information about reducing the use of hazardous materials. The Hazardous Waste Directory, fact sheets, and other reports are available on the Web site, in print, and by calling the Business Waste Line.

The Program also provides technical assistance to businesses, schools and other SQGs to help them reduce their use of hazardous materials and properly manage and dispose of hazardous wastes. In 2009, for example, Program staff worked with SQGs that have on-site sewage systems, and with nail salons and schools. The Program also collaborates with other agencies to reduce hazardous materials contamination in flood zones and in groundwater/well head recharge zones. SQGs can schedule technical assistance visits through the Program's Web site and by calling the Business Waste Line.

The Program provides up to \$500 in matching funds as an incentive for purchasing approved items or services. These include hazardous waste disposal costs or the purchase of equipment to ensure proper storage of hazardous materials, such as a flammable storage cabinet. The Program also provides an opportunity for the recognition and certification of businesses that take steps to reduce their use of toxic and hazardous materials. That recognition/certification program is called EnviroStars.

Finally, the Program promotes compliance by investigating hazardous waste complaints and working with enforcement authorities to resolve these. Citizens can call or e-mail the Program with hazardous waste complaints; the Program will either investigate the complaint or refer it to the appropriate agency for investigation.

Partnering to Promote Compliance and Enforce Regulations

The Program promotes regional enforcement coordination by bringing regulatory and enforcement staff together to address items of mutual concern. The Interagency Resource for Achieving Cooperation (IRAC)²⁸ was established in 1991 to review and update local regulations related to HHW and SQG wastes, and to ensure a consistent regulatory framework across the region.²⁹ The 1997 Plan Update affirmed IRAC's role in promoting interagency coordination and providing technical assistance. IRAC also focused on education and compliance inspections of businesses, organizations or residential properties handling hazardous waste. It coordinated with state and federal regulatory agencies, and code development organizations, to develop rules, policies and procedures that balanced conflicting interests, minimized unnecessary burdens on agencies and waste generators, and were consistent with the Program's goals.³⁰

²⁸ IRAC was originally called the "Interagency Regulatory Analysis Committee." Its name was changed in 2005.

²⁹ 1990 *Final Plan*, page 3-28.

³⁰ 1997 *Plan Update*, page 5-30, Recommendations 34 and 35.

IRAC continues to provide a structure for regulators from federal, state and local agencies to share diverse perspectives and work together to resolve regulatory conflicts, gaps or overlaps. Through the work groups organized within IRAC, representatives from these agencies have introduced new legislation and have brought changes to local, state and national regulations and codes. Examples include work on Titles 10 and 23 of the King County Code and on King County's Industrial Waste Pretreatment Septage Acceptance Policy; work on state regulation of pharmaceuticals {WAC 173-303-071(3)(nn) Conditional Exclusion for Pharmaceuticals}; and work on national regulations such as the definition of spray area for Uniform Fire Code Article 80, codes and standards like ANSI Standard 2208 on solvent distillation units.

IRAC work groups have fashioned working agreements on interpretations of regulations that overlapped or conflicted and provided new regulations where gaps previously existed, such as with the spray coating regulatory matrix, public pool barriers and chlorine storage. IRAC's interagency work groups have also developed best management practices for specific materials and waste streams. For example, interagency IRAC work groups developed guidance on chlorine use and storage in 2008, and developed guidelines to protect children and residents from exposure to lead-based paint in 2005-2007. IRAC work groups develop guidance for inspectors of regulatory agencies to address all aspects of regulation that can impact hazardous chemicals. Additionally, IRAC provides trainings and workshops for state and local regulators and inspectors, publishes quarterly newsletters for IRAC members, and posts publications and guidance on the IRAC Web site.

The Program coordinates the regional Interagency Compliance Team (ICT), which grew out of an IRAC workgroup convened to address problem sites. Started in 2001, in partnership with Ecology, the ICT sets priorities and develops a coordinated response to troublesome sites. Any particular site may present a number of environmental, health, and safety violations, and these typically fall within the jurisdictions of different agencies. Coordinating the responses of various agencies prevents a situation in which different agencies with overlapping jurisdictions unknowingly work at cross-purposes at the same location.

The ICT is comprised of inspectors, investigators and law enforcement officers from agencies in the Puget Sound region who work together to bring owners of troublesome sites into compliance. The ICT uses a variety of methods to achieve compliance, including coordination, information-sharing, negotiated compliance, and leveraging of resources. The partnership allows ICT members to pursue investigations which no single agency would have the resources to complete on its own. The ICT has worked with property owners and operators on over forty sites in King County to improve management and compliance with environmental regulations. Many of the sites have been cleaned up, brought into compliance, or closed down.³¹

31 For additional information and case studies, see Local Hazardous Waste Management Program in King County, *ICT Interagency Compliance Team*, (Seattle: LHWMP, Publication Number: IRAC-ICT-1 (7/082008), 2008).

4.3.5. Assessment of Existing Regulations and Regulatory Program

It appears that for the most part, regulations and contracts are in place to prevent hazardous materials and waste from entering into the environment, solid waste stream, sanitary sewer, and stormwater system. It also appears that many businesses demonstrate a willingness to correct their hazardous waste management practices when given information and adequate options for disposal. However, a small percentage of businesses refuse to comply.

Technically, once an SQG business fails to follow hazardous waste management regulations, that business's SQG status is revoked, and it becomes a 'regulated generator' under the jurisdiction of Ecology. However, budget and staffing limitations at Ecology encumber their ability to enforce against this category of generator. Similar problems occur when noncompliant businesses are referred to other agencies; in many cases, the referral is a low priority for the enforcement agency. These problems have worsened with cuts in enforcement funding and staffing.

A review of compliance programs in the United States shows that multi-agency enforcement teams such as the ICT are successful at bringing chronic, multi-violation sites into compliance.³² For example, the State of California has encouraged and supported the development of regional task forces dedicated to the deterrence, detection, investigation and prosecution of environmental violations. Since 1999, every county in the state has been covered by such a county or regional task force.³³ Studies have also shown that an enforcement component in compliance programs is essential.³⁴ Programs are most effective if the consequences are significant.³⁵ A stronger enforcement component and a more successful collections process for agencies with enforcement authority would recover more fines and send a clear message that enforcement actions cannot be ignored.

4.3.6. Future Directions

The Program plans to continue to provide technical assistance and incentives to promote waste reduction, and proper hazardous waste management and disposal. It will explore strategies for

32 King County Solid Waste Division, *Report and Recommendations of the King County Streamlining Enforcement Work Group*, (Seattle, WA: King County SWD, 2007), page 13. Cited hereafter as *2007 Streamlining Enforcement Workgroup Report*.

33 Environmental Task Force. *Environmental Task Force-California Environmental Protection Agency*. 2005. Accessed November 9, 2009. www.calepa.ca.gov/Enforcement/TaskForce.

34 According to the International Network for Environmental Compliance and Enforcement (INECE), "Enforcement is the backbone to any compliance program. Strategies involving education and assistance, monitoring and inspections, and incentives are only effective if backed by a credible threat of enforcement sanctions. Effective enforcement programs deter illegal conduct by creating negative consequences for those who violate the law." International Network for Environmental Compliance and Enforcement, *Principles of Environmental Compliance and Enforcement Handbook* (Washington D.C: INECE, 2009), p. 65. Cited hereafter as *INECE Compliance and Enforcement Handbook*.

35 The INECE states that "For deterrence to be effective there must be: 1) a high likelihood that the violation will be detected; 2) swift and predictable responses to violations; 3) responses that include appropriate sanctions; and 4) a perception among violators that all of these elements are present." *INECE Compliance and Enforcement Handbook*, p. 65.

providing clear, accessible guidance to businesses and other SQGs to assist them in reducing the use of toxic and hazardous materials, and in complying with regulatory requirements. The Program also will continue to partner with other agencies through IRAC and the ICT. At the same time, the Program will explore ways to strengthen enforcement efforts and establish an even more coordinated regional approach. Options include strengthening the ICT program, establishing memoranda of understanding, utilizing existing enforcement code provisions, promoting centralized approaches to enforcement and prosecution of environmental violations, and consideration of other legal and regulatory approaches.

Strengthening the ICT program requires support from participating agencies. The management of each participating agency must support the enforcement actions that ICT determines necessary to achieve compliance at a particular site. The ICT also needs the involvement and cooperation of all agencies involved at a troublesome site; failure to achieve this could result in an ICT action plan being developed without the knowledge/participation of an affected agency, possibly resulting in procedural errors or incomplete compliance. Finally, combining and leveraging the resources of all involved agencies conserves resources and streamlines the enforcement process.

It is also important to strengthen partnerships and referral services among enforcement agencies, including Ecology, PSCAA, and others. The Program will consider establishing Memoranda of Understanding (MOUs), where appropriate. This could include forming MOUs with public utility agencies to prevent noncompliant sites from receiving utilities until compliance with all rules and regulations have been met. The City of Tacoma has found this strategy to be very effective.³⁶

The Program will consider options for strengthening enforcement actions such as providing financial support to the King County Prosecuting Attorneys Office (PA). The PA's workload means that, in practice, most environmental code violations end up at the lower end of their long list of priorities. This financial support could be shared by the agencies and programs that would benefit from that additional support.³⁷ Establishing a client-funded, full-time, dedicated position in the PA's office to handle criminal and civil cases involving environmental, health and safety issues, including illegal dumping, could increase the number of enforcement cases successfully completed. Funds could potentially be generated through the collection of civil penalties.

Finally, the Program will look at how to improve enforcement by using the existing provisions and appeals processes established under King County Code Title 23 that addresses "Code Compliance." An IRAC workgroup on Streamlining Enforcement recommended using this regulation to enforce against illegal dumpers. The work group also recommended using Board of Health Code Chapter 1.08, which allows Public Health to issue Notice and Orders requiring corrective actions and to

³⁶ Michael Kennedy, City of Tacoma Environmental Compliance, Science & Engineering Section, personal communication with Sue Hamilton, Local Hazardous Waste Management Program, November 13, 2009.

³⁷ See the 2007 *Streamlining Enforcement Workgroup Report*, page 16.

assess civil penalties. The work group recommended making changes in both codes to increase their effectiveness,³⁸ and identified additional regulatory authority in King County. The Program may consider empowering staff to issue citations to businesses that fail to voluntarily comply with regulatory requirements; this is contemplated as a limited—last resort—effort, conducted by staff who have received special enforcement training. Citations could be issued using the generic field citation recently developed by the Streamlining Enforcement Workgroup.³⁹

38 Specific Recommendations can be found in the *2007 Streamlining Enforcement Report*, pages 13-17.

39 According to Dinah Day, Streamlining Enforcement Work Group Lead, King County Code Title 23 was recently amended to include generic field citations. This mechanism has not yet been implemented. Dinah Day, King County Solid Waste Division, personal communication with Sue Hamilton, Local Hazardous Waste Management Program, November 13, 2009.

Financing and Budgeting for the Program



5

5. Financing and Budgeting for the Program¹

5.1. Financing for the Program

'Finance' is commonly defined as the funding for an enterprise. With regard to finance, the Program's goals are to obtain the fee resources needed to fund the Program's services to, or mitigation of impacts from, utility ratepayers. Other financial goals include raising those revenues in the most equitable manner possible, and relating the sources of those funds from residential or business ratepayers to the services and mitigations provided to those ratepayers.

5.1.1. History of the Revenue Structure

During the Program's initial development in the late 1980's, constructing an adequate funding mechanism was a significant issue. Principles considered important in selecting a funding mechanism were articulated in the 1989 Draft Plan and include the following: establishing a secure funding base; ensuring that the funding was derived from a source directly related to issues addressed with the funds; and avoiding dependence on the governments' general funds, which were considered too discretionary to be dependable for long-term funding. Additionally, it was assumed that state funding would play a significant role since the mandate to address household hazardous waste (HHW) and conditionally exempt small quantity wastes (CESQG or SQG) was given to local governments by the state.²

Potential funding mechanisms were delineated in the 1988 Issue Paper³ and the 1989 Draft Plan.⁴ These were derived from funding mechanisms used by local agencies that were then addressing HHW and SQG⁵ and by a number of states that had local HHW and SQG programs.⁶ Potential Program funding options are described and discussed more fully in the 1990 Final Plan.⁷

Aside from the fees already in place at the time, potential funding mechanisms discussed in the 1990 Plan included state funding through the Local Toxics Control Account, a local (King County) add-on to the State Hazardous Substances Tax, a direct assessment of municipalities, and surcharges to fees

1 This chapter is based, in part, on the MCC's adopted fiscal policies.

2 Solid Waste Interlocal Forum, *Local Hazardous Waste Management Plan for Seattle-King County: Final Plan and Environmental Impact Statement for the Management of Small Quantities of Hazardous Waste in the Seattle-King County Region & Appendices A & B*, (Seattle: LHWMP, November 1990), p. 3-40. Cited hereafter as *1990 Final Plan*.

3 Solid Waste Interlocal Forum, *Local Hazardous Waste Management Plan for Seattle-King County Issue Paper* (Seattle: LHWMP, June 1988), p. 5-33. Cited hereafter as *1988 Issue Paper*.

4 Solid Waste Interlocal Forum, *Draft Plan and Environmental Impact Statement for the Management of Small Quantities of Hazardous Waste the Seattle King County Region* (Seattle: LHWMP, February 1989), Section 5.3 Financing. Cited hereafter as *1989 Draft Plan*.

5 *1989 Draft Plan*, p. 5.3-2.

6 *1989 Draft Plan*, pp. 5.3-3 to 5.3 to 5.6.

7 *1990 Final Plan*, Plan Financing and Implementation, pp. 3-38 to 3-48.

charged by sewer utilities, solid waste utilities, stormwater utilities, onsite sewage treatment systems, landfill and transfer stations, hazardous waste collection sites, and other permit fees and fines.

The 1990 Final Plan assessed potential funding options using the principles described above and recommended the following funding mechanisms: state grant funding, surcharges on solid waste and sewer utility fees, and surcharges on tipping fees from landfill and transfer stations.⁸ The fee sources were formally adopted by the Solid Waste Interlocal Forum in 1990,⁹ when the Program was launched. They were later affirmed through the adoption of the 1990 Final Plan and by ordinances adopted by the King County Board of Health and the Seattle City Council acting as the Seattle Board of Health (prior to the state mandated merger of both boards in 1995).

The 1997 Plan Update reaffirmed the Program's funding structure and cited the administrative efficiency of billing to the small number of solid waste haulers, solid waste utilities and sewer treatment operations.¹⁰ It also discussed the issue of charging user fees for services as a potential future option, but made no recommendation.¹¹

5.1.2. Current Revenue Sources

The revenue structure adopted by the 1990 Final Plan has remained unchanged and continues to focus on the following five sources:

- solid waste utility fees;
- sewer utility fees;
- tipping fees from landfills and transfer stations;
- state grants; and
- interest, or investment returns on the Program's fund balance.

Solid waste utility fees are user fees that residents and businesses/institutions throughout King County pay to have their trash removed. A major source of the Program's funding comes from surcharges on these solid waste accounts. User fees are collected from residents and businesses/institutions by solid waste haulers and/or municipalities. The haulers/municipalities pay a surcharge into the Program Fund for each residential and non-residential (business/institution) account that they serve.

Sewer utility fees, like solid waste utility fees, are user fees. They are paid by residents and businesses/institutions throughout King County to have their sewage removed and treated. User fees are collected from residents and businesses/institutions that are tied to a sewer service, by the provider

8 1990 Final Plan, pp. 5.3-11.

9 Solid Waste Interlocal Forum Resolution 90-001, adopted 1-12-90.

10 Local Hazardous Waste Management Program in King County, *Local Hazardous Waste Management Plan for King County: Final Plan*, (Seattle, WA, May 1997), p. 5-41. Cited hereafter as *1997 Plan Update*.

11 1997 Plan Update, p. 5-41.

of that service. Those service providers include sewer utility districts, municipalities and private organizations. Some of those service providers operate sewer treatment facilities, and others send their sewage to King County Wastewater Treatment Division for treatment. The operators of sewer treatment facilities serving more than fifty customer accounts pay a surcharge into the Program Fund based on each million gallons of sewage they treat.

Tipping fees are user fees charged to residents and businesses/institutions that haul their own trash to landfills and transfer stations. The operators of those landfills and transfer stations pay surcharges into the Program Fund at two different rates. One surcharge rate is based on a set amount for each passenger-licensed vehicle visit. A second surcharge rate for non-passenger licensed vehicles is based on the weight of each solid waste load brought by that vehicle.

Solid waste, sewage and landfill/transfer station tipping fees, as well as our Program's surcharges to those fees, are user fees. They are charges for services. They are not taxes. The difference is that user fees, like those described above, are derived from specific sources – solid waste, sewage and landfill/transfer station services. And they are used for specific activities related to those funding sources – treatment and disposal of solid waste and sewage, and, in the case of our Program, addressing hazardous chemicals, materials and wastes and making sure that they are properly used, stored and disposed of. Tax revenue, as opposed to user fee revenue, can be derived from a variety of sources, and can be expended on general activities not necessarily related to the source of those revenues. Taxing authority must also have a specific statutory authorization. User fees are charged to provide services to, or alleviate burdens produced by, fee payers.¹²

The Program also receives some grant funds. The most significant grant source is the Washington State Department of Ecology's Coordinated Prevention Grant (CPG) Program. The CPG Program protects human health and the environment by reducing human exposure to toxins, reducing waste, and ensuring proper management of solid and household hazardous waste.¹³ CPG provides funding assistance to local governments for planning and implementing their local solid and hazardous waste management plans.

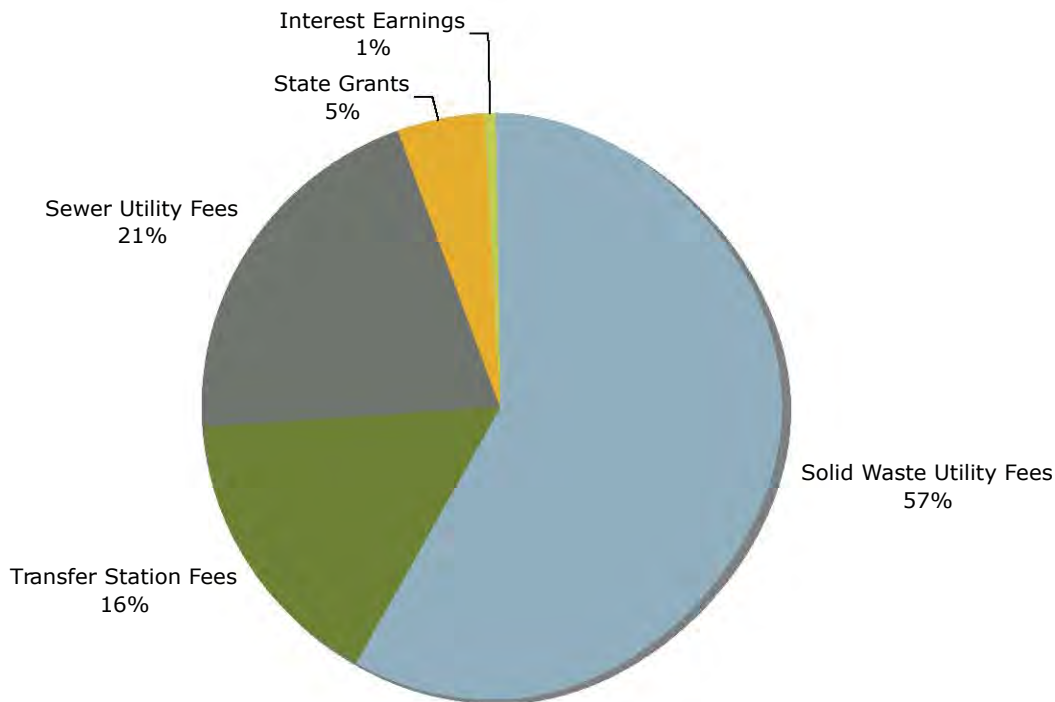
A final source of income for the Program's fund consists of interest and returns from investment of the fund's balance. The Program's fund is a separate, restricted fund; unlike other government funds, all monies received into the Program's fund stay in it from year to year, except for annual expenditures to implement the Program's work. The fund is not part of a government general fund, and its monies cannot be used for any purpose other than to address the mission of the Program, as directed by state statute, the King County Board of Health code and the Management Coordination Committee. The

¹² *Covell v. City of Seattle* (127 Wn.2d 874)

¹³ Coordinated Prevention Grant Program/About the Coordinated Prevention Grant Program, *Washington Department of Ecology Waste 2 Resources Grants and Financial Assistance*, Website accessed November 5, 2009, [www.ecy.wa.gov/programs/swfa/grants/cpg.html#About_The_Coordinated_Prevention_Grant_\(CPG\)_Program](http://www.ecy.wa.gov/programs/swfa/grants/cpg.html#About_The_Coordinated_Prevention_Grant_(CPG)_Program).

fund must always maintain a positive fund balance. Those monies in the fund are invested in King County's investment pool. Rates of return vary, depending on the investment vehicles used. Figure 5-1 shows the relative proportion of the 2008 Program revenues represented by each funding source.

Figure 5.1 2008 Program Funding Sources and Proportions



Ninety-four percent of Program revenues are derived from surcharges on user fees from solid waste and sewer utilities and landfill/transfer station customers. The King County Board of Health sets these user fee surcharges that fund the Program. The last surcharge rate increase went into effect on January 1, 2006, with a portion of the sewer surcharge phased in on January 1, 2007.¹⁴ The Program's current surcharge fee rates are listed in Table 5-1.

¹⁴ King County Board of Health Code 2.08.090, Parts 1 and 2.

Table 5.1 2007 Program Surcharge Fee Rates

Solid Waste Accounts	
\$0.80/month/residential customer	\$9.07/month/non-residential customer
Sewage Accounts	
Approximately \$0.19/month for a <i>residential customer equivalent</i> (750 cubic feet). (Wastewater treatment facilities pay \$33.92 for each million gallons of sewage they treat)	
Transfer Stations & Landfills	
\$1.34/passenger licensed vehicle load of solid waste	\$3.50/ton for each load of solid waste from a non-passenger licensed vehicle

5.1.3. Recent Revenue Trends

Figure 5-2, below, shows the Program's funding trends since the last Plan Update in 1997.

Figure 5-2 Program Revenues



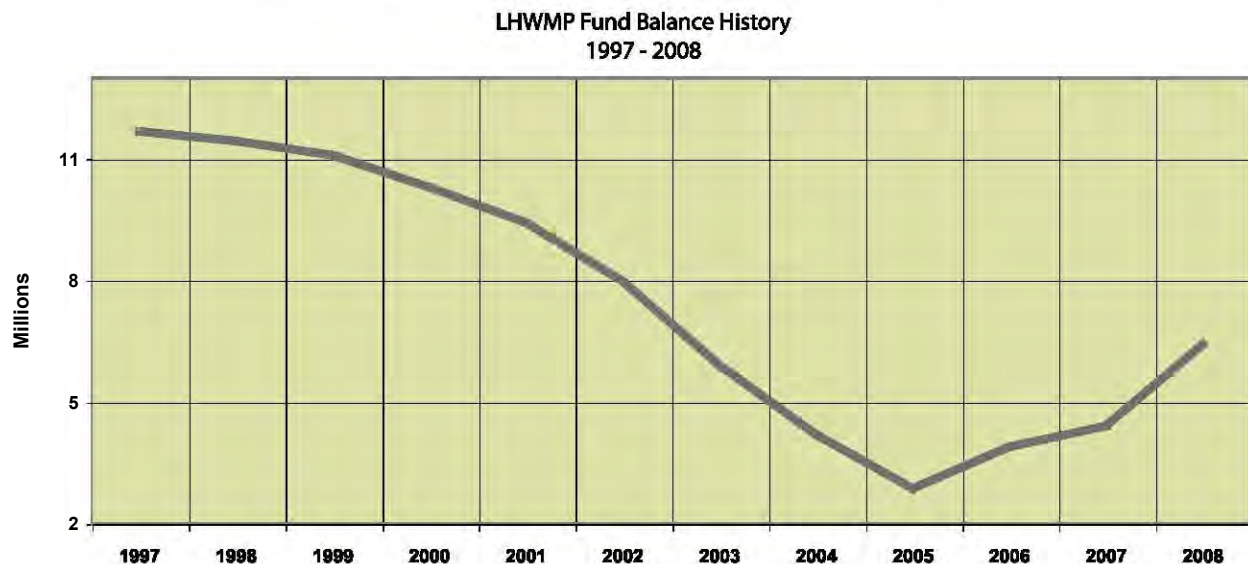
5.1.4. Residential and Non-Residential Revenue

The Program derives revenue from two types of ratepayers, residential and non-residential. Residential ratepayers include people living in single and multi-family housing. The term “non-residential ratepayer” refers to any entity, other than residential units, that generates wastes, including commercial businesses, non-profit entities, government agencies, schools, and other institutions. The 1990 Final Plan said that residential ratepayers should pay for the Program’s household hazardous waste efforts and that non-residential ratepayers should pay for work related to small quantity generators of hazardous waste. This commitment was reaffirmed in the 1997 Plan Update. To implement this policy, staff monitor Program revenues from residential and non-residential sources. And, budgeting decisions for HHW and SQG services are made within those revenue contexts.

5.1.5. Fund Balance Trends

Figure 5-3 shows the Program’s Fund balance by year since the 1997 Plan Update. This Figure shows how our Program Fund performs over time. Our fees are set, and revenues remain relatively static, while costs generally increase because of inflation. The overall Program Fund balance declines over time until a new fee increase is implemented. The fee increase depicted here was implemented in 2006, with a small portion of the sewer increase phased in, in 2007.

Figure 5-3 Program Fund Balance and Trends.



5.1.6. Future Funding Issues

While the current funding structure has been in place since 1990, it is periodically reviewed in terms of its fairness and its administrative cost and burden. The Program is currently reviewing the solid waste billing systems used by waste haulers and cities to see if the Program's fee surcharges can be allocated more equitably. Currently our flat fee-per-account system does not result in the same charges being applied to multi-family housing units. Some multi-family units are charged the residential rate individually, some are grouped under one account and are charged the same as one residential account, and some are grouped under a business account or accounts and are being charged the non-residential rate. Some business customers also assert that a flat fee-per-account is unfair because of the huge differences between businesses in the types and amounts of waste that they generate.

Some options that are being explored to try to address these issues include targeted revisions to our flat fee-per-account system and volume based billing. However, any changes to our rate structure must balance multiple goals. While it is important to allocate costs as equitably as possible, this must be weighed against the additional administrative costs and complexity that might be encountered by such proposed changes. Ultimately, for any changes to be made, the King County Board of Health would have to approve them through an amendment to its code.

Another potential area for investigation is the allocation of revenue from sources according to the proportion of hazardous waste released to the environment via that source. The 1990 Final Plan stated, "Approximately 80 percent of hazardous wastes in municipal waste streams can be found in solid waste." And, that the remaining 20 percent of hazardous wastes was being found in the liquid waste stream.¹⁵ The current 80/20 assessment of contributions to the Program Fund from solid waste and sewer funding sources is based on these estimates.¹⁶ Current work to address stormwater quality, onsite sewage systems and their impacts to ground water, and other water quality issues raises the question of whether other revenue sources should be explored, so that the responsibility for funding the Program is shared equitably across all classes of ratepayers according to their estimated contributions of hazardous wastes. We are also working on a new rate proposal from our current funding sources that, if approved by the Board of Health, would go into effect on January 1, 2012.

5.2. Budgeting for the Program

While finance is concerned with obtaining the revenue needed for the Program, budgeting allocates that revenue to accomplish the mission of the Program.

¹⁵ 1990 Final Plan, pp. 16, 3-43.

¹⁶ 1990 Final Plan, pp. 16, 3-43 and 1997 Plan Update p. 5-41.

5.2.1. Budget Overview

The Program's budgeting process is a cooperative, consensus-based exercise conducted by representatives from the Program Partner agencies. These include Seattle Public Utilities (SPU); King County Department of Natural Resources and Parks' Solid Waste (KCSWD) and Water and Land Resources (KCWLDRD) Divisions ; and Public Health - Seattle & King County (PHSKC). Suburban Cities have representation at the staff and MCC levels during the budget development and approval phases. Timing for the budgeting process is determined by the King County Executive and King County Council's budget approval process because the Program fund resides at Public Health, a King County department.

5.2.2. Budget Development and Approval Process

Budget proposals are discussed with, and then submitted by, each of the Program Partners (SPU, KCSWD, KCWLDRD and PHSKC) and proposed budgets are developed for the suburban cities and for non-agency line items. These individual budget proposals are developed by the program administrator and designated managers from each partner agency, in consultation with the MCC member from that agency. The agency and non-agency budget proposals are based on previous years' budgets and work plans, proposals for new work, and changes to on-going work.

The previous year's budget is the starting point for budget development. Some activities continue at the same level, while others may be increased, decreased, or eliminated. Resources may be increased for effective, high priority projects and reduced in areas where lesser effort is needed. Resources will be reassigned when a project accomplishes its objectives and is closed out or if it is not successful. Proposals for new work and expansions of current work are a necessary part of the Program's responsiveness to changing trends or newly identified threats and opportunities.

The individual budget proposals from Program Partners, suburban cities and non-agency components are considered in the context of a multi-year financial projection. Based on the Program fund's balance, estimates of future revenue, and projected expense estimates and budget assumptions, the multi-year document projects these components forward to a point where the Program fund balance reaches its minimum (two month) operating reserve: that is the year in which a future surcharge fee increase/rate proposal would be needed. The Program's financial projection is maintained by the fund manager and the program administrator, in cooperation with managers from Program Partner agencies. It provides a financial context for setting both individual agency budgets and the annual Program budget package.

Staff from Program Partner agencies, along with the program administrator, create the Program budget package based on partner agency budget proposals, the non-agency line items, and the revised financial projection. The budget proposal is presented to the MCC for approval. After MCC approval, the budget package is submitted to the King County Council, through Public Health and the King County Executive, as a part of the King County government budget.

While the Program budget is administratively part of the King County budgeting process, it is operationally a multi-government budget. The non-King County components are developed as contracts and approved by the legislative branches of the respective partner agencies.

5.2.3. Alignment of Budget with Mission

The Program's budget allocates monies for expenditures that will further the Program's mission. These expenditures are related to projects in three focal areas. Those areas are hazardous materials production, use and storage, and disposal, in addition to Program administration.

- Projects concerned with hazardous materials production focus 'upstream,' that is, they strive to influence the design, development and manufacture of products to reduce their hazardous components.
- Projects focused on hazardous materials use and storage encourage residents and businesses to reduce their use of hazardous chemicals, products and materials, and to replace them with less toxic alternatives. The Program promotes the safe use and storage of products containing hazardous chemicals, if they must be used at all.
- The disposal focus of the Program addresses the collection and final disposition of hazardous chemicals, products and materials.
- Program administration underpins all other efforts by providing management, support and accountability to each project and the Program as a whole.

The Program Partners' allocation of funding to projects in each focus area serves as the basis for the agency budget development. In some cases, projects are housed in one agency, but in many cases two or more Program Partners provide staff for a project. Figure 5-4 shows the 2009 allocation of budget among the focus areas.

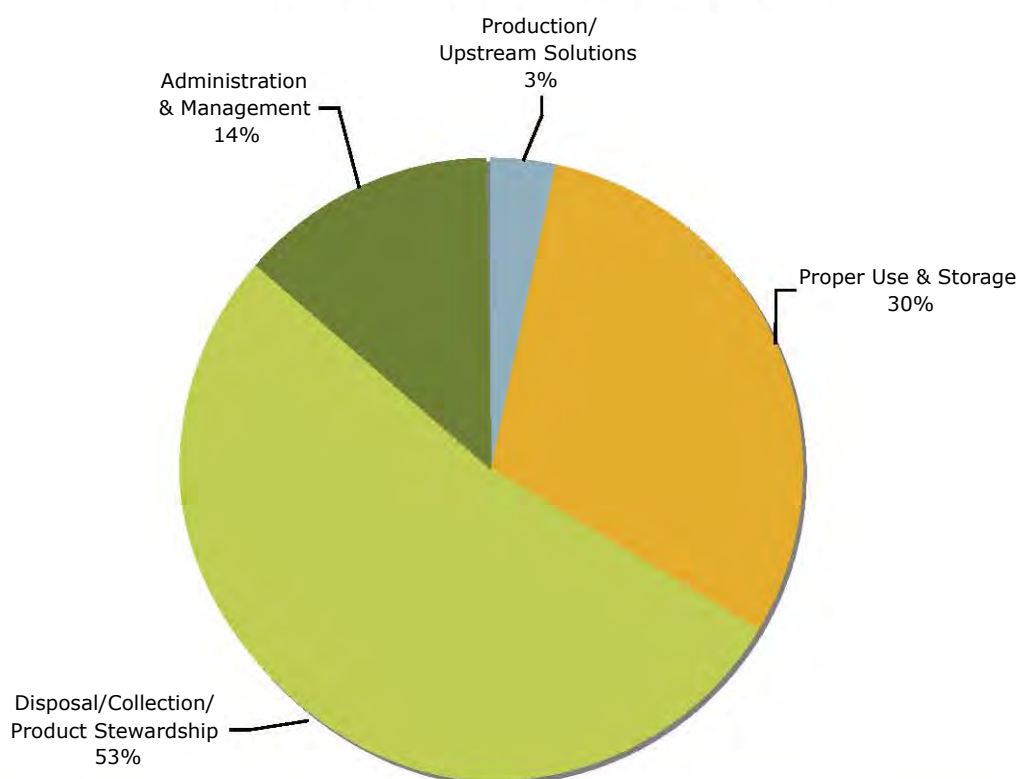
5.2.4. Budget Goals and Constraints

Specific legal and policy requirements govern the allocation of funds through the budget. There is a legal requirement to focus the Program's work on MRW.¹⁷ Contracts constrain funds received from Coordinated Prevention Grants. There are specific legal constraints on the use of utility funds.¹⁸ And we have a policy that requires funds collected from residential customers be used to address HHW and funds collected from non-residential customers be used to address SQG waste.

¹⁷ RCW 70.105.220(1)(a) and King County Board of Health (BOH) Code 2.08.085.

¹⁸ *Covell v. City of Seattle*, 127 Wn.2d 874, 1995.

Figure 5-4 2009 Budget Allocation



Our Program's MRW work is explicitly enabled by state statute and County Board of Health code. While the bulk of the Program's funding and workload addresses MRW, the Program goes beyond waste issues to address how household hazardous materials impact public health and the environment in King County. This broader focus has grown over time. It was implicit in the 1990 Plan, which discussed the fact that hazardous substances were constituents in many consumer products and posed a risk to human health and the environment.¹⁹ The 1990 Plan envisioned a reduction in the use of hazardous chemicals and products as well as better management and proper use of those that remained.²⁰ The 1997 Plan Update acknowledged that revisions to the Program's focus would be made as circumstances changed or in response to new information.²¹

Over time, the Program has shifted its focus "upstream," to a preventative mode that addresses hazardous materials and products before they become hazardous wastes, or even if they never become hazardous wastes. This shift was reflected in the 2006 updated mission statement that the Program will work "to protect and enhance public health and environmental quality in King County by

¹⁹ 1990 *Final Plan*, pp. 1-2.

²⁰ 1990 *Final Plan*, pp. 23-25.

²¹ 1997 *Plan Update*, p. 5-1.

reducing the threat posed by the production, use, storage and disposal of hazardous materials.” This broader approach is consistent with Washington State Department of Ecology’s Beyond Waste Plan.

In addition to receiving surcharges on utility fees, our Program receives a small portion of its overall funding from the Washington State Department of Ecology’s Coordinated Prevention Grants (CPG), as described previously. The use of CPG funds is restricted by Ecology. Those funds are advertised for a variety of uses, including: promoting regional solutions and intergovernmental cooperation; projects that prevent or minimize environmental contamination in compliance with state hazardous waste laws and rules; conducting hazardous waste planning and for implementing some of the projects in those plans; providing local responsibility for hazardous waste management; and for increasing our efficiency, consistency, reliability, and accountability. Even as there are numerous activities for which the funds can be used, the use of those funds must be negotiated with Ecology in contracts, with specific deliverables and timelines.²²

5.2.5. Future Budgeting Issues

Our Program will continue to be responsive to our ratepayers, true to our mission, and adaptable to the changing nature of hazardous chemicals, materials, products and wastes. This will continue through the judicious budgeting and expending of ratepayers’ funds to address our mission areas in as equitable, efficient and effective a manner as possible.

²² Washington State Department of Ecology, *Coordinated Prevention Grant Program Guidelines: 2010-2011 Grant Cycle* (Olympia: Washington Department of Ecology, July 2009), p. 1.