

Program Services: Collection, Disposal and Product Stewardship



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6. Program Services: Collection, Disposal and Product Stewardship

Our Program spends more than half of its annual budget on collecting and ensuring the proper disposal of hazardous waste generated by residents (HHW) and in small volumes by businesses and institutions (SQGs). In 2009, \$7.45 million, or 53 percent of the annual budget, was allocated for this purpose. These efforts include maintaining fixed HHW collection facilities, mobile HHW collection services, and semi-fixed HHW collection services; HHW collection services for the homebound; collection of SQG wastes through a pilot project; supporting Suburban Cities' collection events; and collecting used motor oil. They also include disposal or alternative disposition of the hazardous materials collected, and the Program's work to establish product stewardship and private sector take-back programs for high priority materials.

6.1. Collection Services

In an effort to affirm the relevance and usefulness of our collection services to the ratepayers in King County, the Program conducts periodic reviews of those services. The latest HHW service level study, completed in 2008, compared our Program with eight similar programs in California, Minnesota, Maryland, Florida, and Oregon.¹ It concluded that our Program provided a lower level of service than many comparable programs. The Program's collection services ranked fifth out of nine in the number of minutes open per household per year and in the number of households served per year.

The 2007-2008 HHW service level study found that while the current hazardous waste collection programs provide some level of convenient and proximal service to 99 percent of King County residents, the amount of convenient service available varies depending on where a person lives. People who live in our fixed facility service areas have much greater access to convenient service than do residents in areas served only by mobile collection services, in the south and northeast parts of the County. In addition, Program collection services are not as widely advertised as they could be. Survey data indicates that many residents are not aware of the hazardous waste collection services.

Analysis of demographic data indicates that Program collection services are not used to the same extent by homebound residents, people living in multi-family households or historically underserved groups in relation to their proportion of the King County population. Our Program is taking steps to

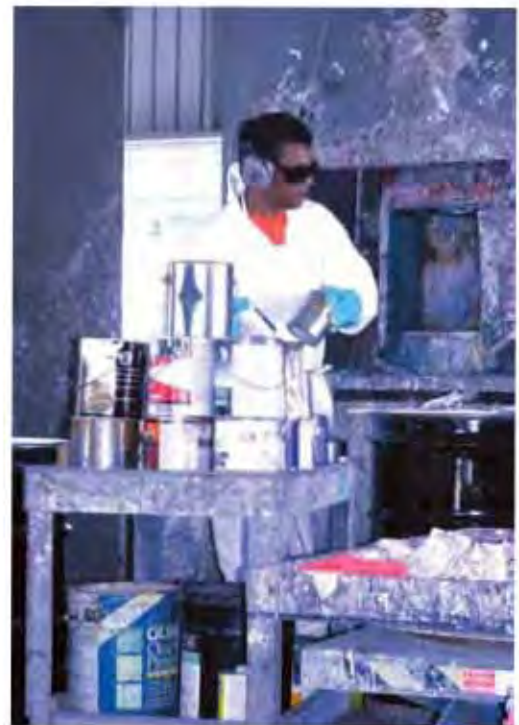
¹ The results of these comparisons and the HHW Service Level Study work group's findings and recommendations are documented in Liz Tennant, et al., *2007-2008 Household Hazardous Waste Service Level Study* (Seattle, WA: Local Hazardous Waste Management Program in King County, February 2010). The report is in Appendix D of this Plan Update. Cited hereafter as *Appendix D, 2007-2008 HHW Service Level Study*. The report also describes how the service areas were calculated (based on the distance that 80 percent of HHW customers surveyed in 2007 drove to use a collection site or the Wastemobile).

address these concerns and to increase our service level, provide more equitable service access, and better publicize our collection services.²

6.1.1. Fixed HHW Collection Facilities

Three fixed HHW collection facilities are under the purview of our Program. They are located in North Seattle, South Seattle, and in the Factoria area of Bellevue. The two Seattle facilities are operated by Seattle Public Utilities (SPU). The Factoria facility is operated by the King County Solid Waste Division (KCSWD).³ These fixed (as opposed to mobile) facilities are open year round; at least one fixed facility is open every day of the week, except major holidays. The three facilities are open to all King County residents on a drop-in basis. An appointment is needed only if a resident has an unusually large amount or unusual type of HHW.

Analysis of 2007 customer zip code data indicated that 80 percent of the customers coming to a particular HHW facility lived within 10 to 12 miles of the facility.⁴ Analysis of demographic data indicates that approximately two-thirds of King County residents live within the service area of one of the three facilities.⁵ Figure 6.1 shows the locations of the fixed facilities.



Processing HHW at the South Seattle Collection Facility.

6.1.2. Mobile HHW Collection Services

Mobile collection service is also provided through our Wastemobile, which is a contracted service administered by the King County Solid Waste Division. The Wastemobile locates in cities and unincorporated areas outside of the fixed facility service areas, between March and October each year. For example, in 2008, the Wastemobile provided a total of ninety-four days of HHW collection service throughout King County, in the following areas:

² Appendix D, 2007-2008 HHW Service Level Study.

³ The Factoria HHW Drop-off Service was established in response to recommendations from the Program's 2000 Service Level Study. It opened in October 2002.

⁴ Appendix D, 2007-2008 HHW Service Level Study.

⁵ Appendix D, 2007-2008 HHW Service Level Study.

Table 6-1: Distribution of 2008 Wastemobile Visits by City

- | | |
|------------------------------|------------------------|
| • Auburn (9 days) | • Kent (12 days) |
| • Bothell/Kenmore (3 days) | • Redmond (7 days) |
| • Burien/SeaTac (6 days) | • Renton (3 days) |
| • Covington area (6 days) | • Sammamish (3 days) |
| • Des Moines (3 days) | • Shoreline (3 days) |
| • Duvall/ Carnation (3 days) | • Snoqualmie (3 days) |
| • Enumclaw (3 days) | • Tukwila (3 days) |
| • Federal Way (12 days) | • Vashon (3 days) |
| • Issaquah (3 days) | • Woodinville (6 days) |
| • Juanita/Kingsgate (3 days) | |

Total: 94 days

Wastemobile locations and durations are determined to serve the greatest proportion of the population outside of fixed facility service areas. For example, in 2008, the Wastemobile served larger cities, like Auburn, Kent, and Federal Way, more extensively than smaller cities like Duvall and Enumclaw. Figure 6.1 also shows the Wastemobile service areas.⁶

Analysis of 2007 customer zip code data found that 80 percent of HHW Wastemobile customers live within eight miles of the Wastemobile service events.⁷ Analysis of demographic data indicates that about one-third of King County's residents live in areas that are served by the Wastemobile.⁸ Although these residents can use any of the Program's fixed facilities, they live outside of the primary service areas of those facilities. The 2007 - 2008 HHW Service Level Study Work Group concluded that these residents have significantly less access to convenient HHW collection service than do residents living in a fixed facility's primary service area. This is especially true during the four months of the year that the Wastemobile does not operate. It is most apparent in the northeast and south King County.⁹

To address some of these service inequities, our Program is increasing Wastemobile service in northeast King County, outside of the fixed collection facility service areas. We will also explore a more formal partnership with Snohomish County to provide reciprocal collection services for the other's residents when it is geographically most convenient.

⁶ Figure 6.1 shows the Wastemobile service area as it stood in 2007. The map captures the general distribution of Wastemobile service as it stood in 2008 and the first half of 2009, prior to the launch of the Auburn SuperMall collection pilot project.

⁷ Appendix D, 2007-2008 HHW Service Level Study.

⁸ Appendix D, 2007-2008 HHW Service Level Study.

⁹ Appendix D, 2007-2008 HHW Service Level Study.

Figure 6.1 Fixed HHW Collection Facilities, Wastemobile Locations, and Service Areas.



6.1.3. Semi-Fixed HHW Collection Service

As noted above, the 2007-2008 HHW Service Level Study Work Group concluded that residents in south King County also have significantly less access to convenient HHW collection service than do residents living in the fixed facilities' primary service area.¹⁰ Additionally, during the 1990s, south King County had more than half of the County's population growth. The area has continued to grow and now has nearly 600,000 residents. It has also experienced the most dramatic increase in diversity, with minority populations doubling and tripling in several communities. These trends are projected to continue.¹¹

Several options for improving HHW collection services in south King County were explored to address these service inequities. They included constructing another fixed collection facility and various combinations of extended Wastemobile services. After extensive analysis of equity, efficiency and cost issues, regular Wastemobile service at the Auburn SuperMall was proposed.¹² To make that proposal a reality, we removed redundant Wastemobile service from our fixed collection facilities' service areas and transferred that capacity to the Auburn SuperMall operation. The new service was partially funded with projected savings derived from no-longer-collected latex paint. The SuperMall site is intended to provide regular, predictable, year-round collection service to south King County residents.

The Auburn SuperMall Wastemobile was launched in July 2009 on a three-day, twice a month basis. Volumes and usage will be monitored to determine if its schedule needs to be modified and if the service is adequately addressing the needs of residents in South King County. The service will be evaluated after two years of data are obtained. At that point this approach will be reconsidered in terms of its adequacy of service as opposed to the construction of an additional fixed collection facility. Figure 6-2 shows the service areas covered by regular MRW collection services as of July 2009.

6.1.4. Collection from the Homebound

The Program collects HHW from residents who are homebound and unable to dispose of their waste at the Wastemobile or fixed collection facilities. Residents typically learn about the service when they phone the Household Hazards Line. For example in 2008, the Household Hazards Line received calls from ten residents who appeared to qualify for homebound collection service; six were Seattle residents and four lived elsewhere in King County.

The 2007-2008 HHW Service Level Study Work Group concluded that the homebound program currently serves a small fraction of those who qualify for it. The Work Group recommended increasing

¹⁰ Appendix D, 2007-2008 HHW Service Level Study.

¹¹ King County, *The 2008 Annual Growth Report*, (Seattle: King County Office of Management and Budget, 2008), pages 2 and 3. King County's annual growth reports will be cited hereafter as *Year X Annual Growth Report*.

¹² Appendix D, 2007-2008 HHW Service Level Study.

public outreach activities to senior citizens and the groups that serve them, using outreach methods and materials like those developed in Clark County, Washington.¹³ Like Clark County, this promotion would encourage the use of the fixed collection facilities while also providing information about who qualifies for the homebound collection assistance. This information will also be provided on our Program's Web site.

6.1.5. Collection Services for other Underserved Populations

The 2007-2008 HHW Service Level Study Work Group also concluded that people living in multi-family residences, immigrants and others using English as a second language are not using the HHW collection services to the same extent as their proportion of the population would indicate. To better understand why this is so, the Program has budgeted for additional study of the issue and how to address it. What is known, however, is that better---multilingual---outreach is needed to provide information to non-English-speakers. It may also be necessary to revise the acceptance policies at our HHW collection facilities and services to encourage their use by those who historically have not used the Program's services.

6.1.6. Small Quantity Generator Collection Services

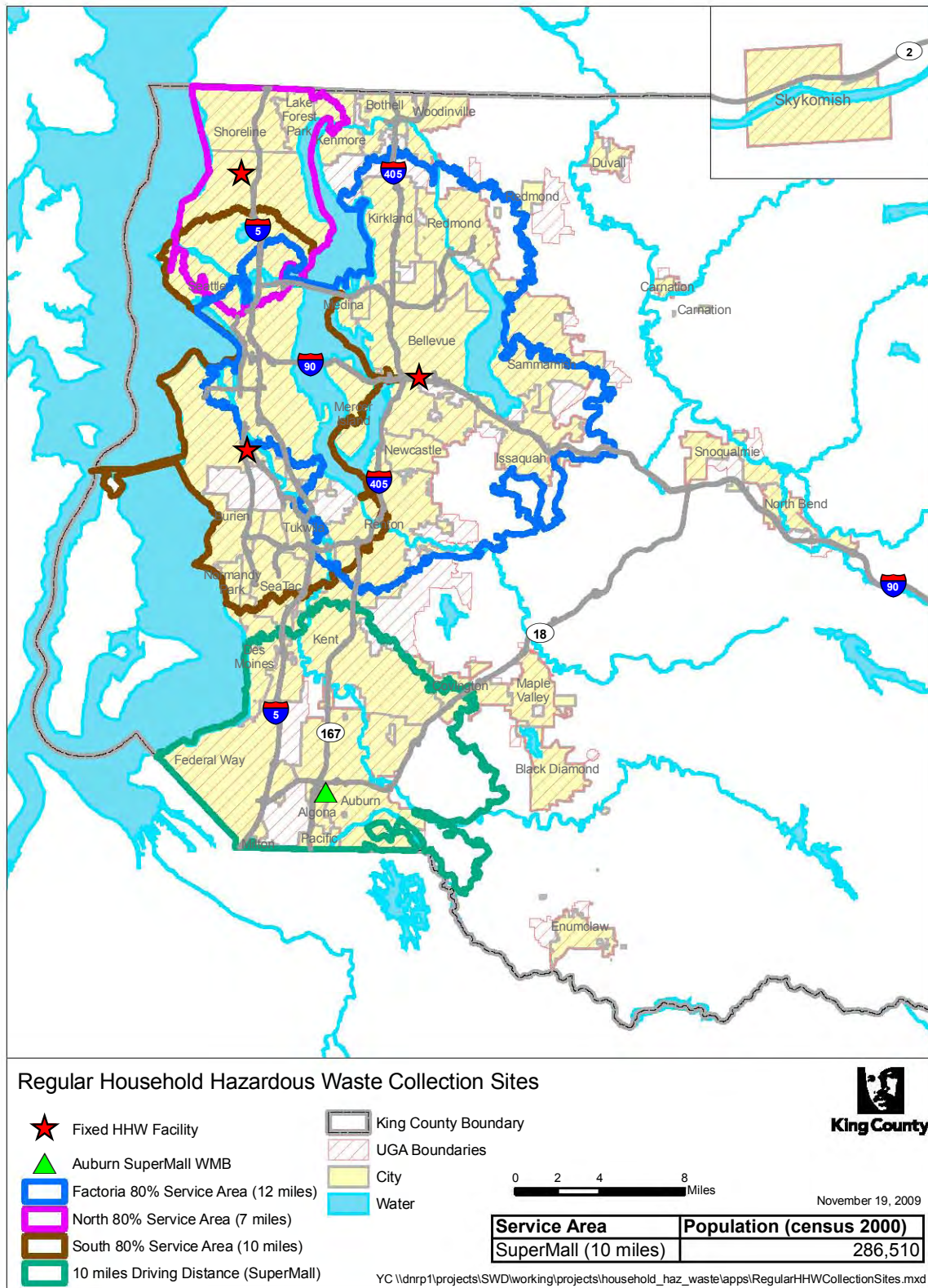
Our Program provides financial assistance to help small quantity generators (SQGs) to properly recycle or dispose of their hazardous wastes using commercial vendors; qualified businesses are reimbursed for half of the amount they spend on proper disposal, up to \$500 per business site. Additionally, our Program helps businesses to properly dispose of their wastes by providing information about waste management options and vendors, through the Business Waste Information Line, the Program Web site, and technical assistance visits, and by promoting hazardous materials exchanges through our Industrial Materials Exchange (IMEX) program.

In addition to these services, and in response to a 2006 service level study,¹⁴ the Program is piloting the collection of small volumes of hazardous waste from businesses and other small quantity generators. The new SQG collection program was launched in February 2008, and expanded in 2009. SQG wastes are now accepted at all of the Program's fixed collection facilities, the Wastemobile, and the newly-opened, collection service at the Auburn SuperMall. No disposal fee is charged at the sites. This pilot project was designed to serve businesses that generate hazardous waste in quantities that are too small to make it economically feasible for those businesses to use commercial vendors. An example of that waste is fixer solution, which is generated intermittently and in small quantities by dental offices. The pilot project will assess whether a longer-term SQG collection program is needed by examining how extensively businesses use the MRW facilities and by surveying participating businesses to better understand their needs.

¹³ Appendix D, 2007-2008 HHW Service Level Study.

¹⁴ Liz Tennant and Alexandra Thompson, *Small Quantity Generator Disposal Work Group Report*, (Seattle, WA: Local Hazardous Waste Management Program in King County, April 2007). Cited hereafter as the *2007 SQG Service Level Report*. The report is in Appendix E of this Plan Update.

Figure 6.2 Areas with regular HHW Collection with Auburn Wastemobile



In order to participate in the SQG pilot program a business must operate in King County, qualify as an SQG under Washington's Dangerous Waste Regulations, provide an inventory of the wastes being disposed, and provide information about its business activity. Hazardous waste accepted under this program is mostly limited to the quantities and types of waste collected from residents. Acceptable and unacceptable wastes are listed on the Program's Web site and in the Program's SQG brochures.

6.1.7. Suburban Cities' Collection Events

As part of our regional partnership, Program funds are allocated to the Suburban Cities in King County for hazardous waste education, outreach and collection events. Several cities pool these resources and coordinate collection and outreach activities. For example, the City of Burien partners with the City of Normandy Park to sponsor joint HHW collection events. Similarly, the five small cities surrounding the City of Bellevue pool their funds with the City of Bellevue, which provides HHW outreach and technical assistance to the residents of all six cities.

The cities collect a variety of HHW, including used motor oil, mixed fuel, oil filters, antifreeze, lead acid batteries from cars, refrigerators containing chlorofluorocarbons, household batteries, fluorescent tubes, propane tanks, and oil-based paints. Most cities offer one or more collection events every year. For example, in 2008, twenty-seven of our Suburban City partners sponsored a total of forty six HHW collection events typically held jointly with solid waste recycling events. Several cities also conducted HHW outreach on integrated pest management, natural yard care and toxics reduction. Figure 6-3 shows the location of city-sponsored HHW collection events in 2008. See Appendix C for additional details.

6.1.8. Used Motor Oil Collection

Used motor oil is collected at approximately eighty-four private collection sites located throughout King County. It is also collected at Seattle's two recycling and disposal (transfer) stations, at the Program's fixed collection facilities and Wastemobile services, and at most of the Suburban City HHW collection events. In addition, several cities provide curbside oil collection as part of their regular collection service. The City of Seattle has recently started a curbside collection program for used motor oil. Figure 6-4 shows the locations of privately-run used oil collection sites.

Information about how to properly manage used oil and the locations of used motor oil collection sites are available through a printed brochure, the Program's Web site and the Web sites of Program Partners.

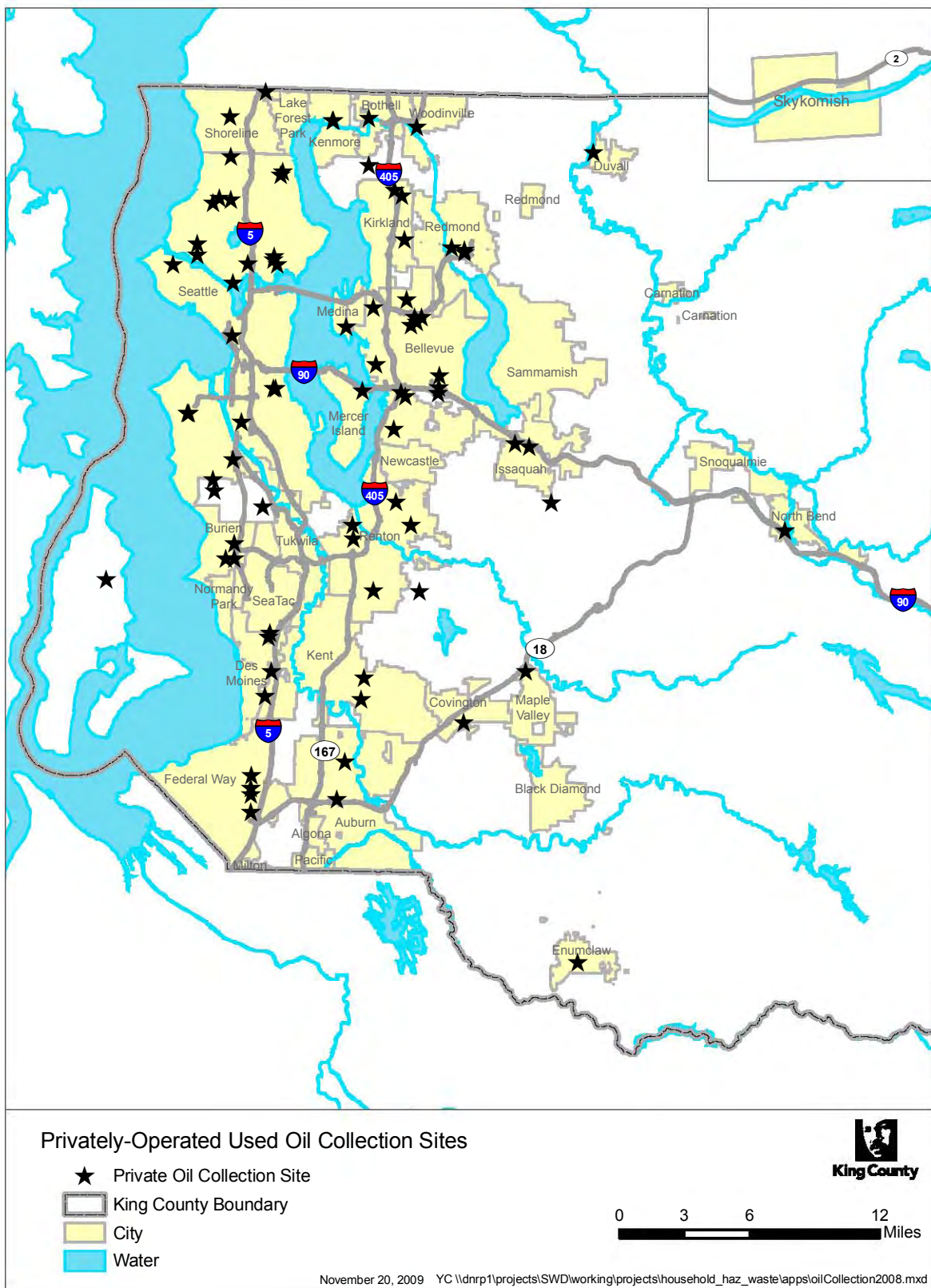
6.2. Disposition of Hazardous Waste from Collection Facilities and Services

Our Program collects a wide range of hazardous waste from residents and small quantity generators. This "moderate risk" waste (MRW) includes materials that are toxic, flammable, corrosive and/or

Figure 6.3 City Sponsored HHW Collection Events



Figure 6.4 Private Used Oil Collection Sites



reactive.¹⁵ Once these wastes are brought to a Program collection site, they are subject to state regulation WAC 173-350, Solid Waste Handling Standards. These regulations specify 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.

Our Program strives to manage the MRW that we collect in accordance with the Washington State Department of Ecology's waste management hierarchy.¹⁶ After first working to prevent and reduce waste generation, the Program uses the following strategies, in priority order, to manage the wastes that we collect: reuse; recycling; physical, chemical and biological treatment; incineration; solidification or stabilization; and landfilling. The best management technique varies from one waste type to another. In general, the Program first attempts to have the waste reused, recycled or put to beneficial use. If that is not possible, the waste is treated, incinerated or, finally, landfilled. A generalized waste processing schematic is shown in Figure 6.5.

Waste materials that are suitable for reuse are given away free of charge at some of our MRW collection sites.¹⁷ Wastes that can not be reused are transported to other sites to be managed at a lower level of the management hierarchy. They must be sorted and packed according to U.S. Department of Transportation hazardous materials rules¹⁸ to ensure their safe shipment along public highways.

Hazardous wastes are transported by private companies that contract with SPU or KCSWD to manage most of the transportation of waste materials. Waste may be initially transported to an intermediate facility where it is stored and consolidated by hazard class or material type until there is sufficient quantity to warrant shipment to a final processing facility.

6.2.1. Reuse

Reuse is the most preferable materials management technique because it eliminates the cost of remanufacturing or treating the waste. Reused materials are diverted during initial sorting and are made available to the public at some sites where they are collected. Currently, reused materials are available at the South Seattle facility and at Wastemobile locations. Products selected for reuse have a low potential for environmental harm and toxicity; those that are highly corrosive, reactive or

¹⁵ See Appendix C for more information on waste acceptance and classification.

¹⁶ Since the Program's collection sites accept HHW and SQG waste, the wastes are being referred to here as Moderate Risk Waste, or MRW, and the collection sites are referred to as MRW collection sites and services.

¹⁷ In 2009 the Program has reuse areas at the South Seattle MRW facility, the Wastemobile and the Auburn SuperMall Wastemobile. Space limitations currently preclude offering this at the North Seattle and Factoria facilities. The Program hopes to expand this service over time.

¹⁸ 40 *CFR* Parts 171-180.

poisonous are not offered for reuse. In addition, the product container must be in good condition with a label that is intact and legible. The customer must sign a release form before taking items for reuse.

6.2.2. Recycling

Different types of hazardous waste are recycled in a number of different ways. Used motor oil from King County collection facilities is shipped to a re-refinery and processed using fractionating techniques similar to those used in refining of crude oil. Used oil is first cleansed of its contaminants, such as dirt, water, fuel, and used additives, through vacuum distillation. The oil is also hydro treated to remove any remaining chemicals. Finally, the re-refined oil is combined with a fresh additive to meet industry criteria. Because oil does not wear out, laboratory tests on re-refined lubricant find no difference between the highly re-refined oil and refined oil from crude oil.

Waste antifreeze recycling removes contaminants by filtration, distillation, reverse osmosis, or ion exchange, and restores critical antifreeze properties with additives. Additives typically contain chemicals that raise and stabilize pH, inhibit rust and corrosion, reduce water scaling, and slow the breakdown of ethylene glycol.

Fluorescent lamps are recycled via an enclosed and ventilated crusher that separates the aluminum end caps, glass sleeves, and mercury-containing phosphor powder. Mercury is then separated from the phosphor by heating and all of the segregated components are recycled. The unit is exhausted to a carbon filter to capture any mercury vapor. Mercury is sent to a licensed mercury reclamation facility where it is processed through a retort furnace and prepared for re-use in commercial applications.

Lead acid, nickel-cadmium, lithium, and mercury batteries are also recycled. The technology used involves crushing the battery in a ball mill, neutralizing the electrolyte, and applying pyrometallurgical processes to separate the metals. For lithium batteries, the lithium salt is recovered and purified to lithium carbonate. The steel jackets of the batteries are sold as scrap metal and the refined heavy metals are used as raw materials in new batteries or other products.¹⁹

Older fluorescent light ballasts may contain PCBs, or a PCB replacement named DEHP, a probable human carcinogen, in their capacitor oil.²⁰ The majority of light ballasts containing PCBs and DEHP are recyclable. All PCB containing ballasts are either sent to an EPA-approved PCB recycling or incineration facility. After removal of the PCBs or DEHP, the metal jacket and internal copper wiring are recycled and sold as scrap metal.

¹⁹ Currently alkaline batteries brought in by SQGs are also recycled. The Program is examining waste characterization data for alkaline batteries and considering whether alkaline batteries from residents should also be handled as HHW and be accepted at the Program's facilities (and recycled). (Julie Mitchell, Project/Program Manager, King County Solid Waste Division, personal communication, December 3, 2009).

²⁰ Fluorescent light ballasts manufactured before 1978 commonly contain polychlorinated biphenyls (PCBs) in the capacitor oil. Ballasts manufactured between 1978 and 1991, may contain a PCB replacement named di (2-ethylhexyl) phthalate (DEHP). DEHP, a probable human carcinogen, was widely used between 1980 and 1991.

6.2.3. Beneficial Use

Hazardous wastes that cannot be recycled into new products but have high energy value are used as fuels in cement kilns and incinerators. High energy fuels, such as gasoline and solvents, are blended with lower energy fuels, such as oil-based paints, glues and caulks, to create a kiln-ready slurry mixture. Some water-based cleaning products can be added as long as the overall mixture maintains a heating value greater than 5,000 BTUs per pound. Those aqueous products do not increase the energy value of the fuel; they are added as a means of disposing of those materials. Used motor oil collected at Seattle facilities is shipped to a company that uses it in fuel blending. Some used motor oil is employed in the production of asphalt.

6.2.4. Treatment

Corrosive liquids, such as drain cleaners and pool chemicals, are neutralized at a treatment facility. Acids and bases are neutralized in reaction tanks, usually by mixing them together under controlled conditions. For example, drain openers containing lye are slowly mixed with concrete cleaner containing hydrochloric acid; the acid neutralizes the lye's corrosivity and creates a non-toxic salt solution. Oxidizers are treated by reaction with reducing agents in a similar manner.

6.2.5. Incineration

Pesticides and poisons, except those containing heavy metals, are incinerated in a permitted hazardous waste incinerator with an efficiency rating of 99.9999 percent.²¹ Facilities used by the Program use rotary kiln incinerators that operate at a temperature of 2,000 degrees Fahrenheit. Air pollution treatment and control devices at these facilities include an afterburner chamber, spray dryer, bag house, saturator, wet scrubber, wet electrostatic precipitator and an exhaust stack.

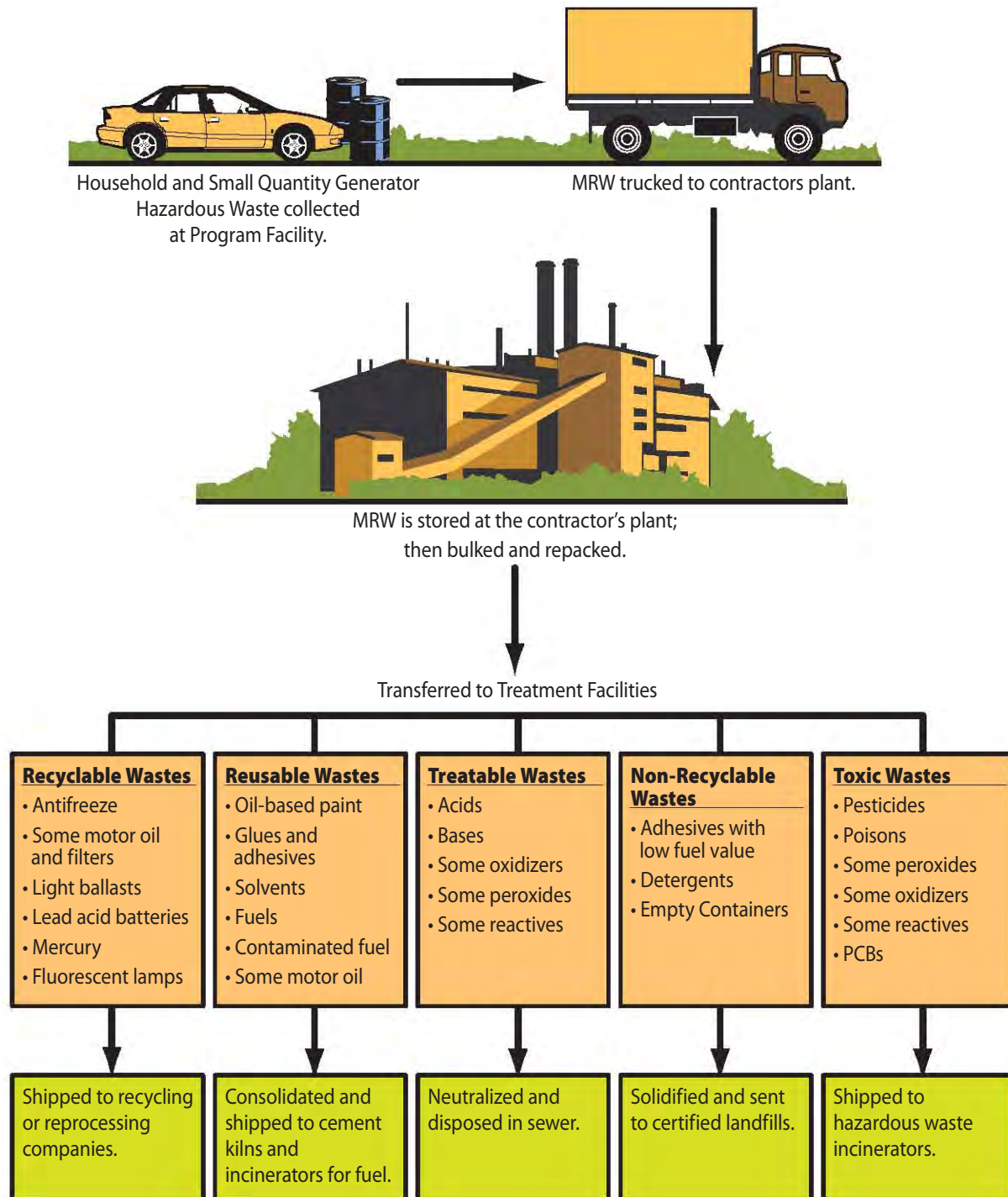
6.2.6. Landfilling

None of the hazardous wastes collected by our Program is sent to a landfill. However, up to 15 percent by weight of non-hazardous solid waste is generated at Program facilities. These consist mainly of product containers that typically cannot be recycled, due to product residues, and non-hazardous materials such as detergents and water-based caulks. These wastes are disposed in a permitted landfill. In the case of pesticides and poisons, containers are typically incinerated along with their contents.

²¹ The US Environmental Protection Agency requires hazardous waste incinerators to meet a destruction and removal efficiency standard of 99.9999% of principle organic hazardous constituents (POCHs) if burning specific dioxin-listed hazardous wastes. Hazardous waste incinerator requirements are summarized in a presentation by Janet Wessell and Dorothy Lewis, Texas Commission on Environmental Quality "Hazardous Waste MACT for Incinerators and BIFs" *Region 6 Compliance Assurance and Enforcement*/US EPA. 2009; Accessed December 2, 2009 at www.epa.gov/earth1r6/6en/x/workshops/2009-april.

Figure 6.5 Where MRW Goes

Moderate Risk Waste Processing



6.2.7. Final Disposition of Wastes

Hazardous wastes must be properly administered from the point of collection through final processing. Improper management may adversely impact human health and the environment, and can result in significant financial liability. The Federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) assigns joint and severable liability for mismanagement of hazardous wastes to all parties that were involved in the handling of that waste. CERCLA does not contain exclusions from liability for household waste or based on the amount of waste generated; to the contrary, if MRW contains a substance that is covered under CERCLA, potential liability exists.²²

Most of the final destination facilities used to treat or recycle MRW are located outside Washington. The degree to which MRW treatment and disposal is regulated in other states varies significantly. For that reason it is especially important to take steps to ensure that King County's MRW is properly managed through its ultimate destruction. The Program helps to do this through contract qualification and selection procedures, and facility compliance and waste disposition audits. MRW management contracts are issued after careful evaluation of the primary and subcontractors' compliance histories and current permit statuses. Once qualified, the contractor assumes primary liability for the proper management of MRW. In addition, the contracts include penalty provisions for non-compliance and require contractors to use hazardous waste manifests and bills of lading to track the transfer, transportation and final management of MRW.

Each time a new disposal contract is issued, KCSWD conducts on-site audits of the primary MRW destination facilities. The audits follow EPA-recommended protocols, including a pre-audit questionnaire, regulatory compliance research, and completion of a checklist covering waste acceptance, storage, employee training, emergency preparedness, environmental monitoring, and equipment pollution controls.

KCSWD requires contractors to submit certificates of destruction or documentation of recycling or reuse for each shipment of MRW. This paperwork ensures that the MRW was delivered to the proper facility and was treated or otherwise managed so that it no longer presents a potential hazard. Certificates of destruction must reference specific manifests listing the MRW shipped from the Program facilities. SPU also requires its contractors to provide certificates of destruction or documentation of recycling or reuse for each shipment of MRW from its facilities.

²² Any waste that qualifies as a hazardous substance under CERCLA is subject to the liability provisions of Section 107. Hazardous substances are defined under Section 101(14) and designated under Section 102(a) of CERCLA. MRW may qualify as a "hazardous substance" if it contains any substance listed in Table 302.4 of 40 *CFR* Part 302.

6.3 Product Stewardship

Our Program strives to provide an appropriate amount and variety of collection services and to deliver those services as equitably and efficiently as possible. While the Program provides significant hazardous waste collection services, it seeks to avoid investing too many resources in end-of-the-pipe collection services and in models where local government and its ratepayers assume the cost of and responsibility for hazardous waste disposal. This approach is not sustainable, nor will it result in effectively reducing the threats posed by the most problematic hazardous materials. Product Stewardship programs are one way to shift from a system focused on government-funded and ratepayer-financed waste disposal and diversion, to one that relies on producer responsibility in order to reduce public costs, increase accessibility to services, attain higher environmental benefits, and drive improvements in product design that promotes environmental sustainability.

Product stewardship is an environmental management strategy that shifts the cost of disposing of a product to those entities that design, produce, sell, or use a product. It forces these parties to assume responsibility for minimizing the product's environmental impact throughout its life cycle, including end-of-life management. The greatest responsibility lies with whoever has the greatest ability to affect the product's life cycle environmental impacts. This is most often the manufacturer, although all within the product chain of commerce have roles. "Product Stewardship" and "Extended Producer Responsibility" (EPR) are terms used interchangeably to describe this shift in responsibility for collection, transportation, and management of products from local governments and their ratepayers, to the manufacturers. Product stewardship is gaining support at the local, state, national and international levels. Our Program is working in several ways to implement product stewardship/extended producer responsibility in managing hazardous materials. We currently do this with pharmaceuticals, fluorescent lamps and tubes, and a variety of other products.

6.3.1. Pharmaceuticals and Unwanted Medicines

Our Pharmaceutical Project is working with pharmacies and many other partners to develop a take-back system for unused and unneeded drugs, so they do not end up in our landfills or flushed into our sewer systems, which can eventually get into the environment. The pharmaceutical take-back demonstration project continues to provide regional and national leadership on this complex issue.

Between 2006 and 2008, our Program partnered with Group Health and Bartell Drugs to establish a pharmacy-based take-back pilot project that allowed people to return unwanted pharmaceuticals to secure locations at 25 Group Health clinics, 12 Bartell Drugs retail pharmacies, and two boarding homes/assisted living facilities. The pilot project successfully demonstrated that a safe, secure system for take-back of unused medicines could be run through pharmacies. And it showed that customers would participate, and that systems could provide safe and secure destruction of all medications received. Although the pilot project officially ended in October of 2008, Group Health, Bartell Drugs and the boarding homes are continuing to collect unwanted medicines at least through 2009. Our

collection partners will evaluate annually if they will have the fiscal resources to continue collecting unwanted medicines from residents.

Our Program continues to assist collection, sorting, counting and disposal of the returned medicines. However, our current efforts are focusing on enacting statewide legislation to require secure medicine return following a manufacturer responsibility/product stewardship model. Staff also participate in national product stewardship dialogues with pharmaceutical manufacturers, and efforts to address federal regulatory barriers to an effective take-back program. We are working hard to pass producer responsibility legislation in Washington State so that all residents in King County and Washington State have a place to safely dispose of their unwanted medicines.

6.3.2. Mercury-containing Fluorescent Lamps and Tubes

Use of fluorescent lights is widespread and continues to grow as compact fluorescent light bulbs and tubes are promoted for their energy saving properties. However, fluorescent bulbs and tubes contain mercury and must be recycled in an environmentally sound manner. Our Program is working with fluorescent bulb and tube recyclers to establish a network of locations where customers can return fluorescent lamps. Part of the challenge in establishing a product stewardship system is ensuring that hazardous products, such as mercury, will be properly handled by whoever is collecting and managing the waste.

KCSWD has partnered with SPU and others to establish the “Take-It-Back” Network, which lists companies that have agreed to meet specified environmental and regulatory criteria. The Take-It-Back Network partners in King County sign agreements stating that they will comply with the regulatory requirements and environmental criteria. They also provide customers with a certification that the fluorescent bulbs and tubes have been handled in an environmentally appropriate manner. In September 2008, Bartell Drugs began collecting compact fluorescent light bulbs through the Take-It-Back Network at all 56 of their stores in King, Snohomish and Pierce Counties.

Our Program currently coordinates 68 fluorescent bulb and tube take-back recycling sites. While Program staff continue working to expand the Take-It-Back Network as an interim solution, we are working with the Northwest Product Stewardship Council on legislative approaches



Figure 6.6



Returning a fluorescent tube to a Take-It-Back Network Member.

for mercury-containing lighting products. Similar to the safe medicine return legislation, as noted above, we are supporting legislation for fluorescent lamps that would also establish a manufacturer responsibility/product stewardship system for this product category.

6.3.3. Other Hazardous Products

Other product stewardship programs address mercury-containing thermostats, rechargeable batteries, and electronic products. Mercury thermostats are collected and recycled through the Thermostat Recycling Corporation (TRC), a non-profit manufacturers' organization. This program collects and recycles out-of-service mercury thermostats through participating heating and cooling equipment suppliers, contractors and our Program's MRW collection services. Contractors and residents may drop off used mercury thermostats at any of these locations at no charge. TRC pays shipping and recycling costs. Our Program is working with TRC to improve the capture/recycling rate among current participants. We have assisted these efforts by providing additional collection bins, mailing labels, and publicity.

Rechargeable batteries are collected at our MRW collection facilities and services, and at retail stores that participate in the Rechargeable Battery Recycling Corporation's (RBRC's) recycling program. Members of the rechargeable battery and portable electronic product industry fund the rechargeable battery recycling program through the licensing of Call2Recycle's Battery Recycling Seals. The RBRC provides collection boxes, shipping and recycling services. Residents may drop off batteries for no charge. Our Program is working with RBRC on ways to improve the capture/recycling rate.

Old computers and other electronic wastes constitute a large and growing problem waste stream. This "E-waste" contains heavy metals, brominated flame retardants, and other hazardous materials; if not properly recycled and disposed it can pose significant health and environmental problems. The Program supports a product stewardship approach to managing these wastes and has worked with our Program partners and others to establish a product stewardship system for managing them. This resulted in the "Take-It-Back" Network for electronic products where vendors sign an agreement to handle the electronic wastes they accept in an environmentally sound manner. In return, King County maintains a list of Take-It-Back participants and promotes them in multiple ways.²³ In 2006, the Washington State Legislature passed the first full producer responsibility law for some electronic products.²⁴ That law, called "E-cycle Washington," requires electronic manufacturers to finance the recycling and disposal of unwanted computers, CPUs, monitors, laptops and televisions through a statewide network of electronic collection sites. The collection sites must be authorized by Ecology and must comply with environmental standards set by Ecology.²⁵ The E-cycle Washington program,

²³ Take-it-back members are listed at the Take-It-Back website: your.kingcounty.gov/solidwaste/takeitback/electronics/index.asp.

²⁴ Electronics Product Recycling Act, Chapter 70.95N RCW.

²⁵ Washington State Department of Ecology, *Electronic Products Recycling Program, Chapter 173-900, WAC, Adopted November 2007* (Publication Number 07-07-042), Olympia, WA, 2007.

which began on January 1, 2009, provides responsible recycling of select e-waste from residents, small businesses, charities, school districts, and small governments. The system is available at no charge and approximately 35 collection sites are currently located in King County. Our Program assists KCSWD and SPU in promoting the E-cycle Washington program, and the Take-It-Back Network which handles some other types of e-waste. We do this through our Household Hazards Line, our Web site and our Program materials. Since the e-waste programs began, over seven million pounds of material have been collected in King County through E-cycle Washington and the Take-It-Back Network.²⁶

6.3.4. Future Product Stewardship Efforts

Programs that collect hazardous products at retail locations, like the pharmaceutical take-back centers, and the Take-It-Back Network for unwanted fluorescent lamps and tubes, and some other e-waste, are popular with the public because they make recycling easy and do not require additional trips to recycle. This is true even though many of the businesses collecting fluorescent bulbs and tubes charge a fee for recycling them. The public's response to the pilot projects proves their popularity. More than 28,000 pounds of unwanted medicines were collected between October 2006 and September 2009²⁷, and in 2008, over 74,000 fluorescent bulb and tubes were collected.²⁸

While these initiatives begin to shift responsibility for safe disposal of certain products from local governments-- and their ratepayers---to consumers, retailers and other government agencies, these are interim, voluntary efforts, as opposed to legislated mandates. They do not involve product manufacturers. Legislated programs would directly involve manufacturers and eventually shift the burden of disposal to the entities that produce and profit from the products. To attain this goal, the Program participates in the Northwest Product Stewardship Council (NWPSC) and has helped draft legislation similar to the E-cycle Washington program for fluorescent bulbs and tubes, and for pharmaceuticals, as noted above. The Program also participates in efforts that address paint, packaging, automotive products, other mercury-containing products, other electronics and other chemicals. Program staff serve on the Product Stewardship Institute's (PSI) board of directors and actively participate in PSI work groups, planning, research, pilot projects and coordination efforts.

6.4. Collecting Hazardous Wastes in the Future

Our Program's vision statement describes a future free of hazardous materials. As we work toward this vision, product stewardship and extended producer responsibility will play an increasingly significant role in the management of unwanted products. Legislation for a range of products, including

26 Lauren Cole, LHWMP Priority Chemicals Project Coordinator, personal communication, September 25, 2009.

27 Cheri Grasso, LHWMP Pharmaceutical Project Coordinator, personal communication, October 29, 2009.

28 Lauren Cole, LHWMP Priority Chemicals Project Coordinator, personal communication, August 7, 2009.

pharmaceuticals, mercury thermostats, rechargeable batteries, fluorescent lights, and paint is being developed. Framework legislation, which is a comprehensive approach to implementing product stewardship that eliminates the need for product-by-product legislation, could be introduced in Washington.

The Program envisions a future in which most products have few or no hazardous components and most manufacturers are involved in taking back the products that they sell. While the Program will continue to provide MRW collection services, these will complement the evolving product stewardship system.

In the immediate future, the Program will work to provide more equitable services by analyzing underserved populations and assessing how to improve service delivery to them. The Program is increasing promotion and public outreach about our collection services, to homebound residents, apartment dwellers, immigrants, and other historically underserved groups. Waste acceptance policies are being adjusted, when appropriate, to improve service delivery. The Program will continue to explore ways to improve service delivery in Northeast King County. The Program will continue to monitor population growth, and use of the MRW facilities and services, and will make adjustments when needed.

Finally, our Program will continue to look for opportunities to manage the wastes that we collect at the optimal point in the waste management hierarchy and will continue to audit and monitor the ultimate disposition of wastes to ensure that they are being handled in a way that protects public health and the environment.

Program Services: Use and Storage



7

7. Program Services: Use and Storage of Hazardous Materials

The Program offers an array of services to promote the proper use and storage of hazardous materials and to encourage the use of less hazardous alternatives. The Program also promotes the proper storage of hazardous wastes. Some of these programs focus on residential use of hazardous materials. Other programs focus on hazardous materials used by businesses and other conditionally exempt small quantity generators (SQGs). Many of these programs provide outreach and technical assistance to both audiences. In 2009, these efforts comprise approximately 30 percent of the Program's budget.

Information, education and outreach to King County residents and businesses are provided through the Program's Web site, brochures, fact sheets, reports, telephone hotlines for households and businesses, a Garden Hotline, at workshops and training events, and through technical assistance visits to businesses.

In addition to providing information, the Program supports efforts to reduce and properly manage hazardous wastes by promoting the exchange of hazardous materials through the Industrial Materials Exchange program (IMEX), providing financial incentives, and by recognizing businesses that reduce pollution through the EnviroStars business recognition program. Finally, the Program works to promote environmentally preferable purchasing and other institutional and policy changes that reduce the use of hazardous materials.

7.1. Providing Information

7.1.1. Web site

The Program's Web site provides information about ways in which residents and businesses can reduce the use of hazardous materials, and how they can properly store and dispose of these materials. The site was redesigned in 2009. The new site, which was launched in February 2010, provides information on ways to reduce the use of hazardous materials including information about safer alternatives. It complies with disability standards for the visually impaired and meets the Worldwide Web Committee Standards for people with disabilities. Brochures and other documents that have been translated into alternative languages are available on the site. In addition, the Program is evaluating the potential of social networking and social media tools to deliver its messages and communicate more effectively with certain audiences.

7.1.2. Print Materials

A wide array of brochures, fact sheets and reports are available to help residents and businesses reduce their use of hazardous materials and manage dangerous materials safely. For example,

residents can obtain information on how to reduce chemicals in their homes and yards. They can find information about reducing chemicals, such as pesticides, in their diets. They also can find out about alternatives to harsh cleaners. Businesses can get information about properly storing hazardous materials, best management practices, and strategies for reducing their use of toxic and hazardous materials. There is also information about state and federal hazardous waste regulations and the Program's services for businesses. Many documents are available in print, and most can be downloaded from the Web site. Materials can also be requested by calling the Program's customer service phone lines.

7.1.3. Customer Service Phone Lines

Customer service phone lines provide information to residents, businesses, staff of agencies and others about ways to reduce the use of hazardous materials, as well as guidance about how to safely use, store and transport these materials. The phone lines operate during regular business hours. The Household Hazards Line answers questions from residents and the Business Waste Line responds to hazardous waste questions from businesses. In addition, the Program funds a Garden Hotline that provides information to callers about non-pesticide approaches to managing gardens and landscapes, also known as integrated pest management (or IPM). Staff at all three customer service phone lines can also be contacted by e-mail.



7.1.4. Workshops and Trainings

The Program promotes toxics reduction and safe handling of hazardous materials through workshops and training events. These include workshops for the general public and training for professionals



on integrated pest management and green gardening. Landscape professionals from landscape companies, nurseries, garden suppliers, public and private groundskeepers, and horticultural students have attended these events. The Program also provides training to the staff of government-subsidized housing facilities about integrated pest management and the use of pesticides for indoor pests. Program staff have made presentations to new parent groups, preschool cooperatives, and preschool teachers about ways to reduce children's exposures to hazardous materials. In collaboration

with community partners, the Program has sponsored regional conferences and training events on a variety of topics and has conducted outreach about hazardous products at community festivals and fairs.

7.1.5. Technical Assistance

The Program provides technical assistance to businesses, government agencies, residents and others, to help them reduce the use of, and exposure to, hazardous materials. Technical assistance visits by Program staff to small quantity generator businesses help explain regulatory requirements and provide guidance on best management practices for a particular industry and its waste. In some cases, Program staff collaborate with suburban city partners to conduct technical assistance visits; other visits may be made as part of an incentive program or in response to complaints. The Environmental Quality Team (EQT) conducts technical assistance visits for the Program.



7.2. Business Services

7.2.1. Industrial Materials Exchange (IMEX)

One strategy for reducing hazardous waste is to encourage businesses with a waste material to make it available to businesses that can use the material. The on-line listing service known as the Industrial Materials Exchange (IMEX) is designed to help King County businesses find markets for industrial by-products, surplus materials and wastes. Through IMEX, businesses generating waste material can be matched with businesses that can use the material as an input to their manufacturing process: this transfer reduces waste, on the one hand, and eliminates the need to obtain materials from new sources, on the other. Businesses, offices, schools, and individuals in the Pacific Northwest advertise their surplus or unwanted materials or request materials that they need. There are no fees for using IMEX.



7.2.2. Voucher Incentives and EnviroStars

The Voucher Incentive and EnviroStars programs provide incentives to businesses and other small quantity generators to encourage the proper use and management of hazardous materials and wastes. The programs also support business investments in equipment or processes that will reduce the use of hazardous materials. The Voucher Incentive program provides up to \$500 in matching



funds to qualified businesses to help them reduce hazardous chemical or material use, participate in green purchasing, try out less toxic chemical alternatives, and/or improve storage of hazardous materials and wastes.

The EnviroStars business recognition program promotes hazardous material reduction and safe storage by certifying and marketing qualified businesses. Through the EnviroStars certification process, small quantity generator businesses are certified on a two- to five-star scale. Stars are awarded for the steps a business has taken to manage and reduce its use of toxic and hazardous materials, and for the leadership the business has shown in influencing other businesses. EnviroStars-certified businesses receive window decals and signs, are promoted on the Program's Web site, and are published in the Program's annual Green Business Directory. Businesses with higher star ratings receive marketing assistance. The Program also conducts media campaigns to encourage residents to support EnviroStar businesses. Another aspect of the EnviroStars program is the recognition of larger firms as "Co-stars" for taking on a leadership role.

7.3 Product Alternatives

The Program is developing information about alternatives to hazardous products. One area of focus is "green purchasing," that is, promoting the purchase of materials or items that have fewer adverse effects on human health and the environment than currently-used products. Comparisons of products consider their entire life cycle, from production to final disposal. One example of green purchasing is replacing toys that contain lead in their paint or components, with lead-free toys. Another example is replacing mercury-containing thermometers and thermostats with mercury-free models.

7.4. Priority Materials

In 2006, Program staff reviewed health and environmental studies, technical reports and other data, and selected priority materials, to focus the Program's efforts. Priority materials addressed by the Program include art supplies, pesticides and certain high risk solvents. As well as promoting less toxic alternatives, the Program addresses the safe use and storage of hazardous materials, if they must be used.

7.4.1. Art Products

Healthy Schools project staff have found that art products contained some of the most hazardous materials present in the school. Many of these products are also used by the broader art community. As a result, the Program has begun working to reduce the use of art materials with hazardous components through our new Art Chemicals Hazards Project. It is identifying and working with

partners in this industry. Program staff have been exploring the possibility of providing training about hazardous materials in art curricula. They have found some secondary schools willing to undergo kiln dust sampling for indications of leachable toxic metals. They also have created information to support this work, such as using the chemical evaluation tools in the School Chemicals and Solvents databases, and consolidating the on-going research data on chemicals, their hazards and stakeholder feedback on the use of alternatives.

7.4.2. Pesticides

The Program promotes pesticide use reduction using an array of strategies. The Garden Hotline provides specialized information about integrated pest management (IPM) techniques to residents, businesses and local governments. IPM is also promoted to school districts and other public entities, private landscape businesses, and commercial nurseries.

Program-supported training has been conducted for horticultural students, large landowners, and homeowner associations. Staff from local governments, including King County, the City of Seattle, suburban cities in King County, and government-subsidized housing facilities, rely on the Program's instructional materials and attend training sessions.

Efforts to promote IPM increasingly focus on non-English speaking gardeners and landscapers. In 2008, two trainings in Spanish and one in Vietnamese were held for landscape builders, designers and landscapers.

In addition to promoting safer alternative products, and the proper use and storage of hazardous chemicals, the Program is exploring "upstream" opportunities with product manufacturers, and promoting landscape designs that require fewer chemicals. Finally, Program staff serve as regional experts on natural yard care and pesticide reduction.



Public outreach on natural yard care in Shoreline

7.4.3. High-risk Solvents

Program efforts to reduce the use of, and exposure to, high-risk solvents involve providing technical support and information to the field staff who work directly with businesses using these high-risk solvents, such as dry cleaners.

7.5. Protecting Children and Youth

Two projects, the Young Children's Project and the Healthy Schools Project, focus specifically on reducing the exposure of children and youth to hazardous materials and products.

7.5.1. Young Children's Project

The Young Children's Project works to protect very young children, prenatal to age six, from direct and indirect exposure to hazardous chemicals and products. Children are especially vulnerable to hazardous materials exposures because their bodies are developing. Per pound of body weight, children eat, drink, breathe and metabolize more than adults do. Because they spend more time on the ground and put things in their mouths, children have more contact—and more *direct* contact— with potential sources of toxins.



The Program works to reduce hazardous materials exposures in the places children live, learn and play. It provides outreach to pregnant women, and to the parents and caregivers of infants and young children. Presentations are made to parents groups, and technical assistance visits are made to child care facilities. The Program is involved with the regional Children's Environmental Health Coalition and actively partners with other groups to coordinate messages, share scientific and technical information, and promote better environmental conditions for children. This collaboration involves Program staff, educators, community health practitioners, child care providers, parents, scientists and policy makers.

7.5.2. Healthy Schools Project

The Healthy Schools Project focuses on reducing the exposure of school age children to hazardous materials in public and private school environments. The Project addresses high priority chemicals, such as lead and mercury; art supplies containing heavy metals, acids, and solvents; and laboratory chemicals that are poisonous, corrosive, flammable, explosive, oxidizers, carcinogenic, mutagenic, teratogenic or are neurotoxins. Pesticides are also a focus of the Project and can be present in school buildings and on landscaping and playfields.

The Healthy Schools project works with school district administrators, principles and teachers to develop policies and procedures related to hazardous materials, and it provides lesson plans and resources to help school staff use less hazardous material in the classroom. For example, the Project helps teachers conduct microchemistry science experiments that require fewer laboratory chemicals.

The Project also maintains a Schools Chemical Database that rates the educational utility and hazardous properties of 980 chemicals. The on-line tool proposes restrictions on chemical purchases, storage and use for various grade levels. These restrictions have been incorporated into the Washington State Department of Health's K-12 Health and Safety Guide. The Healthy Schools Project also provides teacher training on the environmental and health risks associated with household hazardous products, and provides student lessons on request.



Toxic glazes from a local school

7.6. Protecting Historically Underserved Populations

Recognizing the need to address historically underserved populations, the Program incorporates the principle of equity of service into all aspects of planning, communication and service delivery. Several projects address this goal.

7.6.1. Environmental Justice Network in Action

The Environmental Justice Network in Action (EJNA) works directly with eight community-based organizations representing minority cultural groups or peoples using English as a second language. EJNA provides outreach and training, distributes Green Home Kits, and participates in community cultural events. EJNA staff assist the Program in developing the tools and capability to work effectively with the many cultural groups in King County, including help with coordinating translations of program documents.

7.6.2. Local Government Housing Authorities Project

The Local Government Housing Authorities Project works with the managers of government-subsidized housing facilities in King County to reduce the exposure of low-income residents to hazardous materials such as pesticides, mercury and lead. A current priority is improving IPM practices at housing authority-operated properties by promoting the proper use of pesticides and accurate record keeping.

7.6.3. Nail Salon Project

Many of the nail salons in King County are owned or operated by women whose first language is Vietnamese. Through technical assistance visits to salons, the Nail Salon Project aims to reduce employees' exposure to hazardous materials and to make sure that these materials are safely used and stored. A Vietnamese-speaking member of the project team plays a vital communications role. The

Project provides bi-lingual training and materials that promote non-toluene, non-formaldehyde, and non-phthalate based polishes. The main areas of focus are the proper storage of acetone-saturated cotton balls; and the purchase and use of safety gloves, glasses, masks, fans, metal storage cans and other safety equipment. A number of other groups and agencies collaborate on this issue, including the Washington State Department of Licensing Cosmetology Board, the Department of Labor and Industries, Vietnamese community groups, and government staff in California and New York, who are developing similar projects.

7.6.4. Select Business Outreach Project

The Select Business Outreach Project also targets workers who are immigrants, who use English as a second language, and others that have been historically underserved. It currently provides outreach to Spanish-speaking janitorial workers, and to landscape workers from many cultures. Spanish speakers make up the majority of janitorial workers. The Project provides culturally relevant information about chemical hazards in the work place and best management practices when using hazardous materials. The Project researches the most common cleaning products and less toxic alternatives to those products, and works with company owners and employees to promote the purchase of these less toxic products. New Futures, a Hispanic group in Burien, has worked with the Project on two “Cleaning with Caution” workshops, and additional workshops are planned. Casa Latina, another Latino group, has also offered workshops for Spanish-speaking janitorial workers.



The landscape services portion of the Project addresses the needs of the Latino, Vietnamese, Cambodian, Khmer, and other Southeast Asian men who constitute the majority of landscape workers. While the transitory nature of landscape businesses—and their workers—has made it difficult to develop lasting contacts, the Project continues to explore opportunities to build trust with landscape businesses and workers.

7.7. Protecting Environmentally Sensitive Areas

The Environmental Quality Team (EQT) helps cities, residents and businesses reduce their use of hazardous materials, and helps ensure the proper management and disposal of these materials when they are used. EQT provides technical assistance upon request. The team also works proactively to protect three environmentally sensitive areas, including flood hazard zones, areas served by on-site

sewage systems, and designated wellhead and groundwater protection areas. They do this by working with the staff of cities on source control, working directly with businesses and schools, and assisting businesses with emergency planning and preparedness.

7.8. Future Direction

The Program will continue to focus on reducing the use of hazardous products and materials.

When these materials are used, they must be managed and disposed properly. While addressing all aspects of this problem, the Program will give special attention to those who are most vulnerable and have been underserved historically. In the future, the Program will continue to identify those who lack services and will strive to provide them with general services, focusing particularly on issues that are within the Program's purview and of most interest to those being served.



Program Services: Prevention and Upstream



8

8. Program Services: Prevention and Upstream

When first developed in the late 1980's, and launched in the early 1990s, the Program had, as one of its primary drivers, the need to provide collection services for household hazardous waste (HHW) and small quantities of hazardous waste generated by businesses and institutions (SQGs), which could not otherwise be reduced.¹ It intended to increase collection services and construct additional facilities over time.² As time passed, products containing hazardous components proliferated. Staff also realized that providing more collection services and facilities was not sustainable, and that providing those services might actually increase the demand for and use of hazardous products. What was needed was a structural incentive for reducing the purchase and use of hazardous chemicals.

To address this issue, the Program adopted a prevention and 'upstream' focus that attempts to address HHW and SQG wastes before they become wastes. This strategy addresses a product at the design and manufacturing phases of its development, rather than looking only at the product's disposal at the end of its useful life. This change in the Program's direction reflects major changes in the history of waste and consumer products.

8.1. Changes in the Waste Stream Composition

Society's wastes have dramatically changed over time. In 1900, the United States' waste stream was mostly mineral, composed of wood and coal ash, and organic, from food scraps. Over time, product waste has grown relative to other waste types, so that today product and packaging wastes make up 75 percent of the municipal solid waste stream.

Products today also contain different materials and chemicals compared to earlier products. In addition to the long-standing problems of lead and mercury in products and manufacturing processes, there are now many new chemicals. Brominated flame-retardants, potential endocrine-disrupting chemicals like bisphenol-A, antimicrobial additives such as triclosan, and a myriad of other hazardous ingredients are either products themselves or components of products in everyday use. The United States produces and imports approximately 42 billion pounds of chemicals every day, equivalent in liquid volume to 623,000 tanker trucks.³ In addition, approximately 82,000 different synthetic chemicals are currently in use in the United States,⁴ and 85 percent of producer notices to EPA for new chemicals lack health effects data.⁵

1 1990 Final Plan, page 1 of the Forward.

2 1990 Final Plan, pp. 9 and 11.

3 Michael Wilson, Daniel Chia and Bryan Ehlers, *Green Chemistry in California: A Framework for Leadership in Chemicals Policy and Innovation*, (Berkeley, California: California Policy Research Center, University of California, CPRC Brief, Vol. 18, No. 2, May 2006); cited hereafter as *Green Chemistry Framework 2006*.

4 *Green Chemistry Framework 2006*.

5 Michael Wilson, Megan Schwarzman, Timothy Malloy, Elinor Fanning, and Peter Sinsheimer, *Green Chemistry: Cornerstone to a Sustainable California*, (Berkeley California: Centers for Occupational and Environmental Health, University of California, 2008); cited hereafter as *Green Chemistry Cornerstone 2008*.

Figure 8 – 1 Source: U. S. Environmental Protection Agency



Figure 8 – 2 Source: U. S. Environmental Protection Agency



The federal law that regulates these chemicals is the Toxic Substances Control Act (TSCA), enacted in 1976 to address chemicals like DDT and PCBs. A large number of chemicals were grandfathered in under TSCA and considered safe as used even though they had not received thorough safety testing. When TSCA was enacted, 62,000 chemicals were grandfathered in and considered safe as used, despite a lack of complete safety data,⁶ and even new chemicals are not fully examined for toxicity.⁷ This lack of health safety testing is not widely known by the public, who assume that consumer products are generally safe. Additionally, producers are not required to disclose all the chemicals in their products and often do not make disclosures due to the proprietary nature of that information.

8.2. Working ‘Upstream’ and Producer Responsibility

The term “upstream” refers to working higher up a waste stream to address the sources of the waste, rather than focusing only on the waste product itself. Ideally, this approach leads to fewer hazardous constituents in products, or to changes in products that make them non-hazardous and diverts them from the hazardous waste stream altogether. One example of working ‘upstream’ is known as “product stewardship” or “extended producer responsibility.” This approach shifts the cost of disposing of a product at the end of its life from local government and ratepayers to the producers and consumers of the product. Currently, most products externalize disposal costs onto governments and their funders. Product stewardship and extended producer responsibility systems internalize management and disposal costs so that these are passed on to consumers, through the cost of the products.

A product stewardship approach moves attention upstream—from waste to product—by shifting the cost burden for management and disposal of the product to its producers, thus incentivizing producers to reduce the now internalized costs through product redesign. The redesign strives to keep the product cost as low as possible for the consumer, to maintain a competitive edge against other products, and to maintain profit. That financial incentive should drive manufacturers to design products with low end-of-life disposal costs—that is, products that have fewer hazardous constituents.

8.2.1. Cradle-to-cradle Approaches

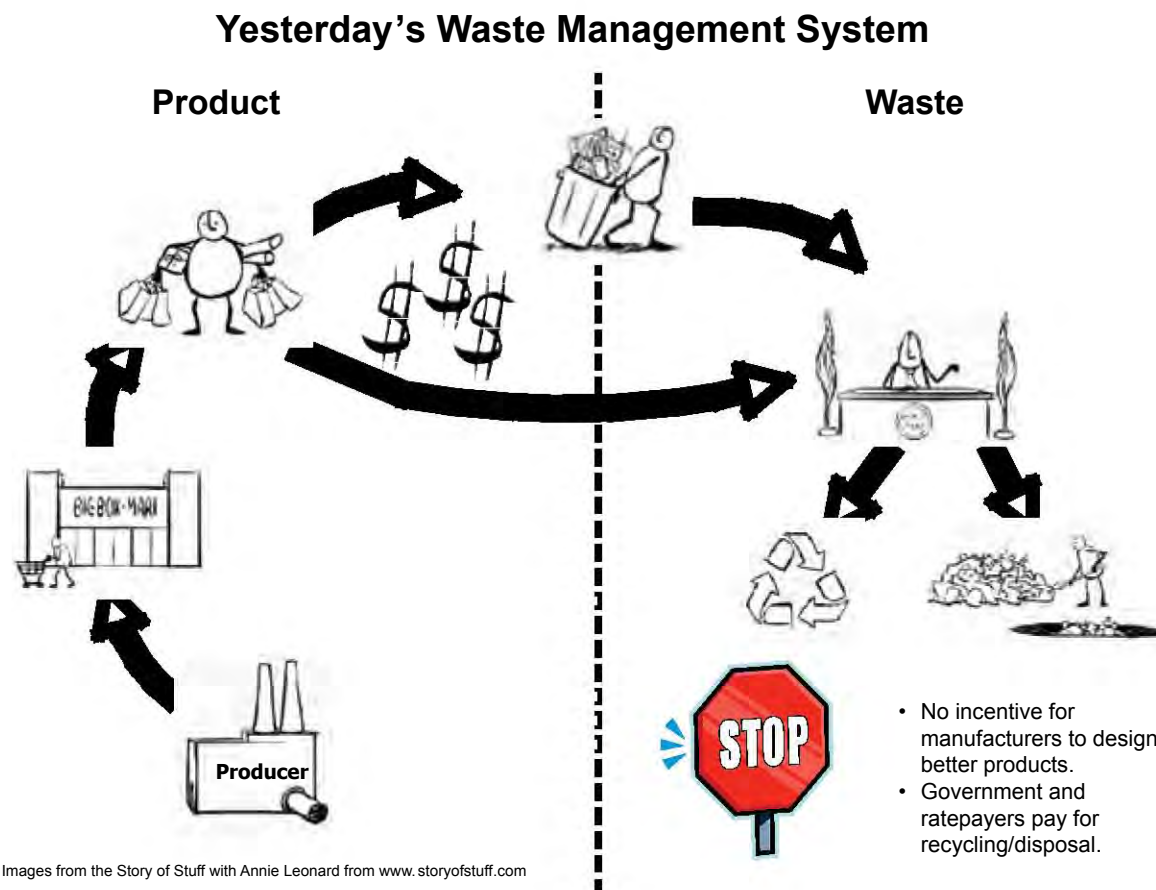
Taken to its logical conclusion, extended producer responsibility would reduce not only hazardous wastes, but waste in general. This is known as moving from “cradle-to-grave” thinking to a “cradle-to-cradle” approach, as articulated by William McDonough and Michael Braungart in their book, *Cradle to Cradle*.⁸ In essence, McDonough and Braungart propose that society move away from products that are disposable-by-design and towards products designed to be either fully biodegradable or easily recyclable while retaining their material quality or original characteristics. That quality maintenance ensures the product’s re-use in multiple new products through their full life cycles.

⁶ *Green Chemistry Cornerstone* 2008.

⁷ *Green Chemistry Cornerstone* 2008.

⁸ William McDonough and Michael Braungart, *Cradle-to-Cradle: Remaking the Way We Make Things*, (New York: North Point Press, 2002). Cited hereafter as *Cradle to Cradle*.

Figure 8-3

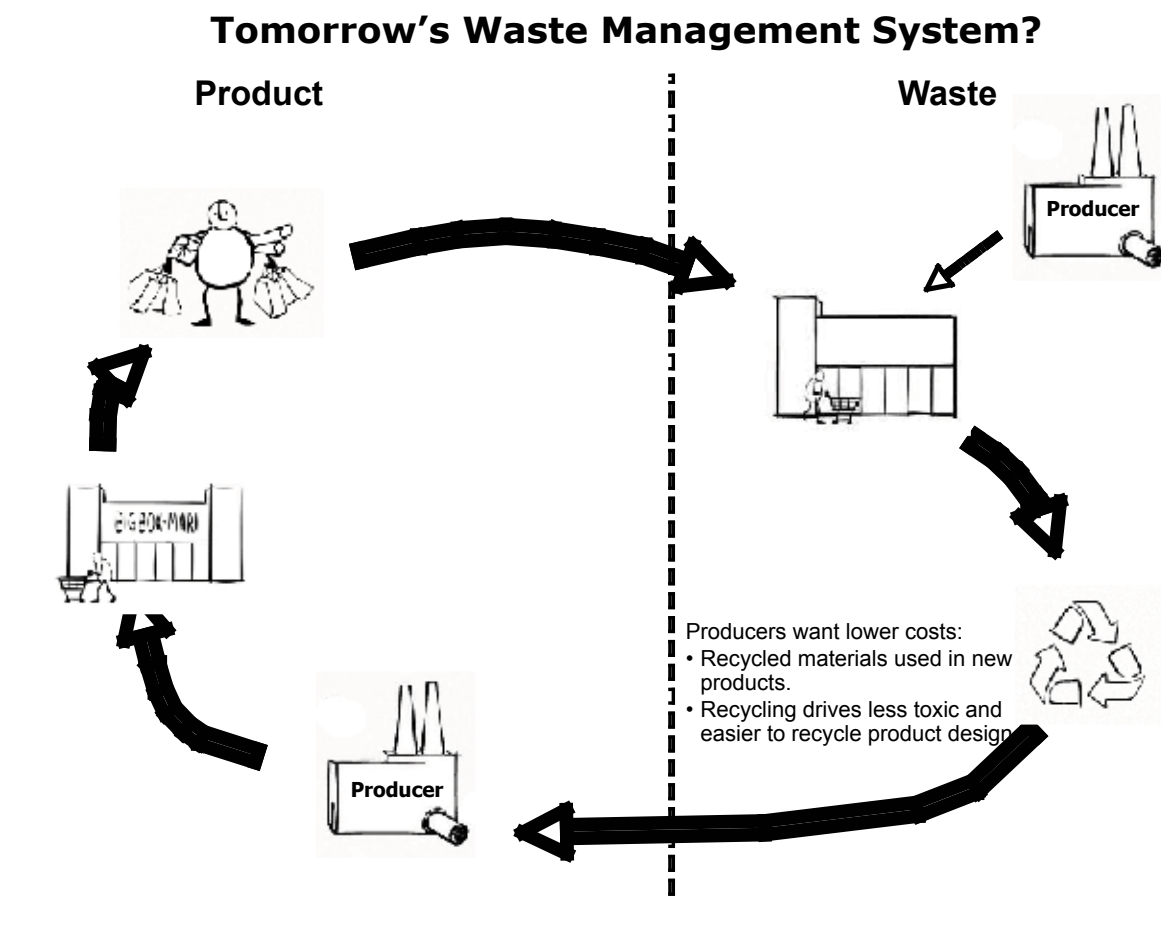


A cradle-to-cradle approach differs from conventional recycling, which often equates to 'downcycling,' a situation in which materials are processed or mixed with inferior or other materials that downgrade their purity or quality. This downcycling creates degraded materials that cannot be reused in the same types of products in which they were first used.⁹ In a cradle-to-cradle approach, products equal 'nutrients'—either biological or technological. A biological nutrient is a material or product that is designed to return to the biological cycle, to be consumed by microorganisms in the soil or by other animals¹⁰ (i.e., compostable). A technological nutrient is a material that is designed to go back into the technical (product manufacturing) cycle. The technical nutrients should be upcycled, to retain their high quality in a closed loop industrial/production cycle.

⁹ *Cradle-to-Cradle*, pp. 109-110.

¹⁰ *Cradle-to-Cradle*, p. 105.

Figure 8-4



8.2.2. Classifying Products

To operationalize the cradle-to-cradle approach, products would be classified into one of three categories. X-list products contain the most problematic substances, including constituents that are teratogenic, mutagenic, carcinogenic, or otherwise harmful to human and environmental health. Gray-list products contain problematic substances that are not in as urgent need of phase-out; these are substances essential for manufacturing and having no viable alternatives at the moment. P-list, or the "positive/preferred" list, products include substances that are actively identified as healthy and safe for use after considering their: oral or inhalation toxicity; chronic toxicity; sensitization effects; whether they have known or suspected carcinogenic, mutagenic, teratogenic, endocrine-disrupting, bioaccumulating, aquatic toxicity, biodegradability, ozone-depleting, or carbon emitting characteristics; or whether the substance's byproducts have any of these characteristics.¹¹

¹¹ *Cradle-to-Cradle*, pp. 173-175.

Implementation efforts would focus on moving away from products containing X-list constituents and beginning to consider and implement designs using materials from the P list.

8.2.3. Consumer Awareness and “Ecological Intelligence”

Daniel Goleman addresses the lack of information parity between a product’s manufacturers and its consumers in his book, *Ecological Intelligence*.¹² Goleman believes that full disclosure about a product’s ingredients, their safety, and the environmental impacts of the product’s manufacturing process, presented in an easy-to-understand form, will shift consumer behavior. He argues that this shift in consumer behavior will drive the manufacture of safer, less environmentally harmful products on a mass scale.¹³

8.2.4. Green Chemistry

Another effort to move away from hazardous materials in favor of safer substances is known as “green chemistry.” Also known as sustainable chemistry, green chemistry involves the design of chemical products and processes that reduce or eliminate the generation of hazardous substances and negative environmental impacts. It applies across the chemical’s life cycle, through the design, manufacture, and use of a product. Producing and using ‘green’ chemicals may result in fewer waste products, non-toxic components, and improved efficiency. Green chemistry applies innovative scientific solutions to real-world environmental situations.¹⁴

Exposure to harmful chemicals and pollution is a significant health and financial burden to modern societies. For example, diseases linked to environmental factors cost Washington State about \$2.7 billion a year in expenditures on health care and lost productivity.¹⁵

Finally, an approach with immediate application is the substitution of safer alternatives for hazardous products currently in use. This can be promoted by undertaking focused research on alternatives, providing information to consumers, and encouraging the use of more environmentally preferable procurement policies in institutions, government agencies and private firms.

¹² Daniel Goleman, *Ecological Intelligence*, (New York: Broadway Books, 2009). Cited hereafter as *Ecological Intelligence*.

¹³ *Ecological Intelligence*, p. 79.

¹⁴ *Twelve Principles of Green Chemistry*, *Twelve Principles of Green Chemistry | Green Chemistry | US EPA*. 2009. Accessed Nov. 5 2009, www.epa.gov/greenchemistry/pubs/principles.html and see Paul Anastas and John Warner, *Green Chemistry: Theory and Practice* (New York: Oxford University Press, 1998).

¹⁵ Kate Davies, “Economic Costs of Childhood Diseases and Disabilities Attributable to Environmental Contaminants in Washington State, USA.” *EcoHealth*, 3:86-94, 2006.

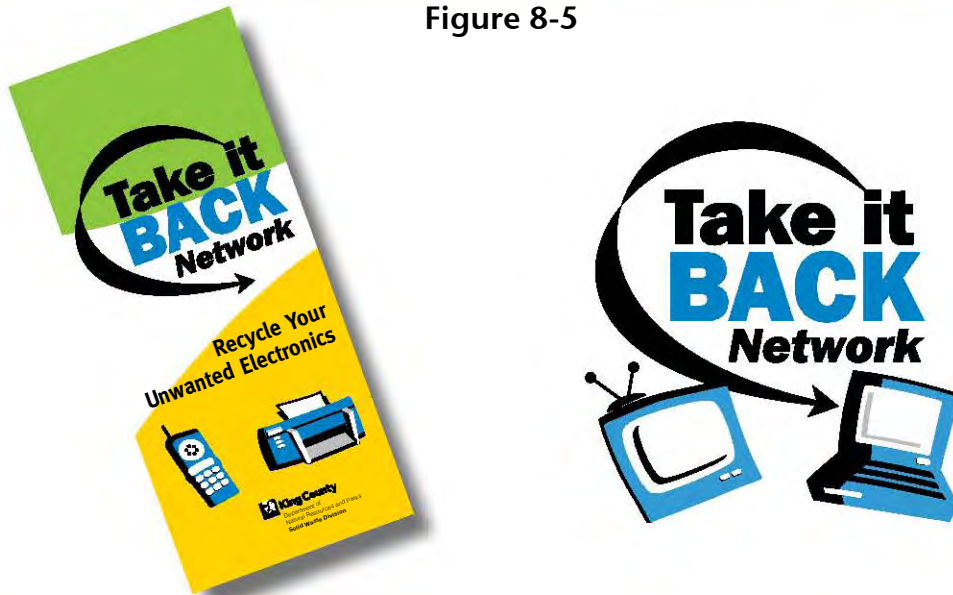
8.3. Producer Responsibility Initiatives in King County

As examples of local producer responsibility initiatives, the Program partners with businesses in several different areas. One area is pharmaceuticals, or unwanted medicines. The Program has lead a successful, two-year demonstration project for in-pharmacy take-back of unused medicines through the Medicine Return Program. This effort involved Bartell Drugs, a local pharmacy store chain, and Group Health, a regional HMO/health maintenance organization.



Secure medicine return at Bartell Drugs

Figure 8-5



The Program also supports Program Partners Seattle Public Utilities and King County Solid Waste Division in their sponsorship of the Take-It-Back Network. The Take-It-Back Network consists of groups of local retailers that accept various products that contain hazardous materials. Some of those products include hazardous obsolete electronics, and mercury-containing fluorescent lamps and tubes. While support of these pilot efforts will continue, the ultimate goal is enactment of legislation requiring manufacturers of these products to pay for their collection and disposal at end of their useful life.

Another example of efforts to influence the hazardous constituents of products is the Program's work with the chemical bisphenol-A (BPA). BPA is an estrogenic chemical and possible endocrine disruptor that is found in polycarbonate sports water bottles, baby bottles, liners for most food cans and a variety of other consumer products. The Program focuses on reducing the exposure of pregnant women, women of childbearing age and infants to BPA by providing information about BPA and its alternatives to audiences who should be concerned about using products that contain BPA. Consumer awareness and concern about this chemical have caused many manufacturers to stop using BPA in their manufacturing processes and products.

The Program's strong Integrated Pest Management program discourages use of the most hazardous pesticides and provides information about safer alternative products and practices. To address this lack of information about the constituents of common household products, the Program has published information about the contents of name brand products and rated them by their health and environmental impacts in a past publication, *Buy Smart, Buy Safe*. We currently produce a similar publication that addresses lawn-and-garden products, which is titled *Grow Smart, Grow Safe*. These publications help local consumers choose less hazardous, or non-hazardous, products. Another current publication that provides information about alternative products is Philip Dickey's *Safer Alternatives for the Home and Garden*.¹⁶

The Program also promotes green chemistry, advocates for sound chemicals policy, works to promote best management practices, and works to enact local ordinances and state statutes related to product formulation, green purchasing and information availability. On the national level, the Program is working to improve federal laws and regulations related to the Toxic Substances Control Act, child safety, product formulation and information availability. It encourages the development of an academically based, sustainable design center to provide research services on reducing toxics to businesses and policy makers. Lastly, the Program is participating in a regional Children's Environmental Health Coalition that aims to reduce the exposure of young children and youth to hazardous chemicals through information dissemination.

The Program actively advocates for changes in local, state and federal laws and regulations, especially legislation that relates to the following: product stewardship; green chemicals policies; the development of safer alternatives; and the phase-out of specific chemicals such as lead, mercury, bisphenol-A, brominated flame retardants, and persistent bioaccumulative toxins (PBTs).

The Program takes a leadership role in regional and national coalitions and partnerships, including the Northwest Product Stewardship Council, the Product Stewardship Institute, and the National Pollution Prevention Roundtable.

¹⁶ Philip Dickey, *Safer Alternatives for the Home and Garden* (Seattle: Washington Toxics Coalition, 2006).

Figure 8-6



Northwest Product Stewardship Council



8.4. Future Directions

In the future, the Program will continue its involvement in a variety of producer responsibility efforts and will encourage product reformulations, when these are necessary and possible. The Program will continue to support the development of safer alternatives, to provide information to consumers about those alternatives, and to promote efforts towards green chemistry.

These initiatives will be supported by continued efforts to obtain regulatory restrictions or bans on certain products and to pass legislation that restructures the system at the 'upstream' end of a product's life—that is, during its early development. Partnerships with regional and national organizations will continue, as these provide knowledge and expertise from other parts of the country and the world, and allow the Program to share its successes with others.

The Program may explore product differentiation strategies more fully. This approach might involve discouraging the use of specific products by making them harder or more expensive to obtain, use and/or dispose of. For example, special licensing could be required to obtain and use certain pesticides or herbicides, and surcharges could be levied on the sale of certain chemicals. Other possibilities include raising disposal fees and increasing liability for products that are highly toxic.

Ultimately, it is in society's long-term interest to ensure that products in the marketplace are safe, handled responsibly at the end of life, and reused or recycled to the extent possible. Less waste—particularly less hazardous waste—is the goal of local efforts. Because the Program ultimately seeks to reduce or eliminate human and environmental exposure to toxic chemicals and hazardous materials, it promotes full disclosure about the chemicals present in products and industrial processes. Today's marketplace can be transformed only if consumers have ready access to information, product ratings and recommendations from trusted sources.

Program Services: Education and Outreach



9

9. Program Services: Education and Outreach

While this chapter addresses our Program's education and outreach efforts collectively, education and outreach are embedded in, and form an integral part of, most of the individual projects that we undertake.

9.1. Past Education and Outreach Efforts

From the Program's inception, education and public outreach have been a part of its foundation. In the early days of the Program, education and public outreach were separated into staff work aimed at three distinct audiences. Those audiences included the adult general public, children and teachers in schools, and businesses.

Education focused on the adult general public included media campaigns targeted to HHW waste streams and informed by HHW surveys. As the Program advanced, these campaigns focused on used motor oil, household paint waste, and outdoor household pesticides. The methods employed included advertising on the sides of buses, on the radio and television public service announcements. The Program also developed outreach messages for particular audiences, such as gardeners and people who mow their own yards. Training of point-of-purchase sales staff in retail stores was also conducted by Program staff.

Some specific and targeted materials that were produced included a *Consumer Reports* type guide that rated name-brand products, called *Buy Smart, Buy Safe*. A companion to that guide, known as *Grow Smart, Grow Safe*, was developed. It was focused on yard and garden products. General fact sheets and other materials were developed for distribution at our HHW collection facilities and services, as well as fairs and other events. These materials were also used in mass mailings. Over time these materials became more specific and sophisticated, including fliers and other materials on oil recycling, paint use and disposal, and indoor and outdoor pesticides. We developed and distributed a Green Cleaning Kit containing safer/alternative home cleaning products and sent hazardous waste disposal information to people moving into and out of homes. We also began providing information on our Web site, through a public household hazards information telephone hotline, and developed and used an interactive exhibit at public fairs and events.

The Program initially provided classroom training to school children and their teachers. The in-school education effort targeted children in grades 4 through 12 and focused on label reading, safer alternatives, and proper disposal. Over the years the emphasis has shifted from proper waste



disposal and environmental impacts, to more of a focus on health impacts. Materials for this target population included hands-on teaching activities for use in classrooms and school events. They also included teacher trainings using a teacher guide created by our staff called *Hazards on the Homefront*. Program staff also provided information at school sciences fairs and to Girl Scout troops and other youth groups.



Business education and outreach activities included door-to-door, direct contacts with businesses in commercial parks and other concentrated areas. That effort was undertaken to introduce our services and discuss best management practices for handling small quantities of hazardous wastes. Business site visits targeted Program-selected priority industries. These included autobody shops, general auto repair shops, dry cleaners, dentists, machine shops and many others. We developed hazardous waste fact sheets and other guidance documents for used by businesses in those targeted industries, as well as SQG businesses in general. Business site visits were also made in response to individual requests for help on technical problems, and to provide best management practices in specific cases. In addition to delivering information to these businesses individually, staff also tried to address these businesses by participating in business trade fairs and industry association meetings. For several years, a Waste Information Network fair was held to showcase best management practices. Additional efforts to assist businesses were undertaken through the development of business-specific content for our Web site.



Over the years, our Program's education work has garnered numerous local and national awards. However, in the mid to late 1990's, staff began to search for stronger evidence that the way we were pursuing this work was actually changing behaviors. This questioning lead to the development of a detailed behavior change strategy based on social science research known as Community-Based Social Marketing. This methodology, as well as changing trends and emerging issues like environmental justice, multicultural education, outreach to underserved populations, outreach to non-English speakers, and outreach related to chemical exposures and health issues, rather than waste disposal, all caused shifts in our outreach efforts. One manifestation of

these shifts was the development of behavior change guidelines for both our business and

general public audiences¹. Others included recommendations on Program services to underserved groups, establishment of the Environmental Justice Network in Action project (EJNA) to serve the needs of immigrant communities and other underserved groups, and, for the first time, consistent, key educational messages were developed and we simplified some of our more complex outreach materials.

Part of this shift in Program focus includes periodic re-evaluation of which hazardous waste streams or materials pose the greatest threat to the public and environment. Changes in priorities may result in shifts in the targets of the Program's outreach efforts. Shifts in those targets included identifying which audiences were most vulnerable, the biggest users of hazardous products, and what might help the Program attain its goals. The conclusions drawn from these evaluation processes changed the direction of the Program's work. Some of these changes in projects included targeting pesticides, solvents, strong cleaners, and products containing mercury and lead, as well as pharmaceuticals. Children, parents and families, underserved groups, and at-risk populations were identified for targeted focus. Worker and public exposures potentially affecting health were raised in priority to complement our work focusing on the reduction of hazardous waste. Sensitive environments, such as groundwater/aquifer recharge zones and well-head protection areas, flood plains, and areas with on-site sewage treatment systems, were identified as priorities for our business outreach services.



The Program also began to look at different ways to effect change, such as the promotion of product stewardship; seeking legislative and regulatory actions; the enhanced use of strategic partnerships with government, NGOs, business associations, etc.; increasing our liaison work with elected officials, businesses and business associations; and more focused public education.

9.2. Current Activities

In 2006, the Program's education and outreach work was further restructured to reflect the need for a more integrated and systemic approach, and to react to new research. That new research revealed information about health effects from exposure to hazardous products, which was not available

¹ Frahm, Annette, *Changing Behavior: Insights and Applications: Behavior Change Project Final Report* (Seattle: Local Hazardous Waste Management Program in King County, 1995).

when the Program first began. There was a growing body of health research suggesting that young children and pregnant women were at higher risk of toxic exposures than was the general population. Additionally, new sources of health and environmental exposures were being identified. Some of those included personal care products as hazards to individuals, pharmaceuticals as hazards to the environment, and endocrine disrupting chemicals as hazards to both people and the environment.

One of the first projects to reflect this new adaptive work structure was aimed at serving child care providers. Traditionally our Program would have addressed this as a business project, to be screened as to whether it was a priority industry. It would then have been served with site visits from a business field team. However, its clients were children, which we traditionally had addressed through our public education and outreach efforts. And, this issue focused on reducing human health risk factors,

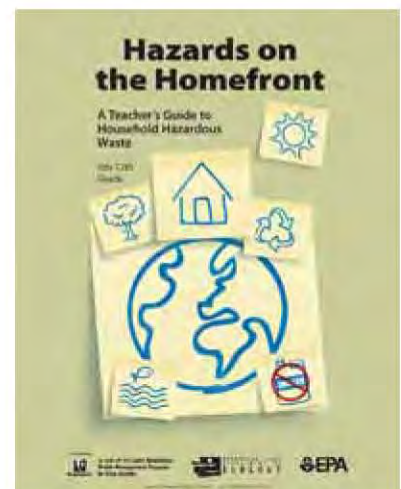


which our Program had not traditionally addressed.

Through our business outreach, we had emphasized reducing environmental exposures by managing waste. This new child care project team deliberately included Program educators and business staff, from two different Program Partner agencies, as well as agency staff from outside the Program. Those outside staff included County nurses, who served child care facilities, and regional child care facility regulators.

The team currently focuses on education of child care facility staff, provides technical assistance, incentive funding to help them reduce toxic exposures, and works toward improving regulations that affect their work. The school and youth educators shifted away from their focus on older children in schools, and joined forces with business staff to form a new Young Children's Team. This team focuses more directly on reducing toxic exposures to young children, such as exposure to lead. It includes the child care project staff. Its staff also created a regional, collaborative working group that is focusing on young children's environmental health issues. This working group recently convened and hosted a regional, professional educational conference on children's environmental health issues.

Other staff members outside the Young Children's Team are also providing education and outreach not only to vulnerable populations, but also to historically underserved populations that are exposed to hazardous products and chemicals. For example, Program staff continue to reach students by training teachers about household hazards. They provide technical and educational support to science and arts teachers to help them reduce student exposures to lab and art hazard exposures. And they teach parents through presentations to parent groups and pre-school cooperatives.



Some of our formerly business-oriented staff are doing outreach to underserved and vulnerable populations. These populations include nail salon workers, workers at small landscaping businesses and janitorial workers. Much of the outreach to address these workers involves working with immigrant and English-as-a-second-language (ESL) communities, such as Latinos, Vietnamese, Koreans, and other ethnic and cultural groups. These new outreach efforts are supplanting our past, generic business approaches, which were more focused on individual business site visits.

Shifts in the past have come from new trends and new thinking. Concepts like the Precautionary Principle, sustainability, and green chemistry are current examples of new trends and research interests that will influence the Program's work and focus into the future.

9.3. Future Directions

The Program will continue to provide outreach to the general public through traditional media such as print, audio and video, and through our web site and customer service phone lines and e-mail. We will also seek to explore and experiment with new information technologies, including social media. We will work to improve our outreach to historically underserved and vulnerable populations.

9.3.1. Historically Underserved Populations

In terms of historically underserved populations, we should assess whether to focus on exposure, as opposed to risk. Exposure is contact with a substance by swallowing, breathing, or touching the skin or eyes. It may be short-term (acute), of intermediate duration, or long-term (chronic). Risk is the probability that something will cause injury or harm. We may not know enough about these populations to be able to accurately characterize their risk levels to hazardous substances. Also, because of language barriers, these populations may not be getting the information they need to have a clear understanding about what substances are toxic, and their personal and their family's level of risk from those substances. Using exposure as opposed to risk is a more conservative and precautionary approach.

We will also need to explore the use of media that are relevant to specific target groups. These media may be technologies like cable TV or video messages in a target group's language. It may mean using social media approaches. Or, it may entail using government channels that may convey more authority with some of these populations.

Another issue that is bound up with language barriers is the complexity of our Program messages. A simplified message or means of delivery, such as the use of graphic or visual depictions, animation of actions or messages, stories, or hands-on training might help convey what we now are attempting to convey with terminology that requires higher-level English reading comprehension. Involving target populations in the creation of our messages could be another method of connecting with a target



Working with Casa Latina to spread the word.

population on their own terms, and in relation to their own interests.

In terms of the groups that we need to address, we may need to expand the number we are trying to reach. While we are reaching out to a wide variety of ethnic communities, such as the International District Housing Authority, Casa Latina, and New Futures, there are others that we could engage. In addition to established organizations, there are some communities that may either have multiple organizations, with none being completely representative, or other communities that do not have formal

organizations established. Some ethnic communities that we should engage more include Asian Pacific Islanders, those from the Horn of Africa, and the Khmer community. Another population that our Program must work to address is the differently-abled/ disabled populations including the hearing impaired, sight impaired and others.

In citing groups that we should build relationships with, it would be prudent to focus our work first with groups that are ready and able to deliver our messages. In other words, attempting to provide our messages at the same level to all groups equally would not be strategic. The fact is that different communities will have vastly different interests depending on the issues that they are attempting to address. Some groups will be focused on very primary issues, like homelessness, hunger, poverty and basic subsistence issues for their population. Others will have moved from those basic concerns to other issues and may have some concerns that overlap our Program's arena of work. Those are the groups that would be a better choice for more attention sooner, while other groups continue to build capacity. This does not exclude the possibility that our Program can aid that capacity building. However, it does suggest that we be very strategic in our assistance, and make sure our commitments are sustainable over time.

In terms of where to try to deliver our messages, we should focus on getting our messages to populations where they are. This could be at work, or in combination with some of our work with businesses that employ historically underserved workers. The theory here is that a worker, in addition to learning about the proper use and storage of hazardous materials at work, would also take that knowledge home and transmit it to his or her family. It could be service delivery at multi-family complexes. This might mean localized collection events, or community training about household hazards. Or it could mean a focus on educating school children, particularly K-8, who have parents that are not fluent in English. Those children may be a primary translator and shopper for their

parents. They also bring home local cultural norms to their immigrant/ESL families.

In exploring new ways to deliver Program services, more formal partnering, directly with community groups, might be an option. A foundation already exists within our Program for this co-delivery of services. It is being done now with the Environmental Coalition of South Seattle. This model could achieve a number of benefits for our Program. Those might include a more effective delivery of our message and concomitant behavior change. It could also increase our staff's cultural sensitivity and capacity by working closely with community staff. The benefits for the community organization might include increasing the long-term stability for that particular organization. It would build environmental expertise and knowledge within the organization. It could build capacity within the community itself as the interest in our issues grows and the relevance of those issues becomes clearer. Finally, the Program must invest in the training of our own staff, and in structural methods that can increase staff sensitivity to the needs and interests of the target populations that we are attempting to serve.

9.3.2. Outreach to Businesses

Another distinct population that our Program targets for service is the business small quantity waste generator. We have addressed this service population directly since the start of the Program in 1990. And, our Program has changed to meet changing business needs over time.

We continue to offer our Hazardous Waste Directory, also known as the Yellow Book, technical assistance visits, financial incentives and the EnviroStars business recognition program. In addition, we are now allowing qualified conditionally exempt small quantity generators to use the Program's collection facilities. Our Program is placing more emphasis on reaching out to businesses through business associations and community organizations. We are providing better information on-line, and are providing more materials in languages other than English.

In preparation for this Plan Update, we recently held a series of business focus groups to provide additional information to better serve the business community. Those focus groups had a variety of suggestions that we will consider in our future work with the business community. Those suggestions included the desire by businesses to have our information customized to their specific industry, and to have our assistance to them similarly customized. They urged us to simplify our messaging to the greatest extent possible, to communicate our messages through as many means as possible, and to use technology to the greatest extent possible. They recommended using trade and industry groups, and working with their vendors, suppliers, and consultants to get our message delivered



indirectly. In addition to messaging they advocated for us to provide hands-on demonstrations and training on site, at technical colleges and at trade shows. Other ideas included developing video pieces for u-tube; creating electronic posters, guidelines and checklists; and using targeted TV advertising.

The focus group members also strongly encouraged us to use voluntary, non-compulsory approaches to compliance. They did not support additional regulations. And, with regard to current regulations, they desired a single source of regulatory information that would span all levels of government, and that would help them interpret the rules. The suggestion of using and expanding third party certification, such as EnviroStars, as well as providing incentives, was also urged to obtain compliance. With regard to those incentives, there was a desire for our Program to look as broadly as possible at potential incentives. Finally, in looking at business compliance more strategically, the focus group participants suggested that the Program try to work with new businesses in their start-up phase, and try to discourage bad management practices with hazardous substances at the outset. They also believed that businesses should pay user fees for disposal and those were just a part of legitimate cost of doing business!



While many of these suggestions offer insight into what can aid business, our Program must work within our legal authority, mandate and resource constraints while trying to the greatest extent possible to address and remove hazardous materials, chemicals, products and wastes from the environment.



Program specialist celebrates success with a small business owner.



Starbucks receives 2004 EnviroStars Recognized Leader Award