3

Waste Prevention

Evan Blackwell
Untitled Eusapia, 2010
Wood window frames
36 x 38 x 2.5 inches

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Chapter 3 WASTE PREVENTION

Waste prevention removes waste from the waste stream by not creating it in the first place. It is sometimes referred to as waste reduction or *precycling.* Seattle Public Utilities' waste prevention programs promote more careful purchasing and consumption by institutions and individuals. These programs also promote more efficient use of materials in business and industrial activities. This chapter describes SPU's waste prevention programs under the 1998 Solid Waste Plan and 2004 Plan Amendment. It also discusses issues for waste prevention planning, recommendations for the future, and approaches to waste prevention measurement.

3.1 RECOMMENDATIONS FROM 1998 PLAN AND 2004 AMENDMENT

In the 1998 Plan, SPU outlined and in the 2004 Amendment reaffirmed waste prevention programs in the following areas (Table 3-1):

- **Reuse** — programs promoting goods and materials exchange opportunities to residents and businesses
- **Onsite Organics** — programs for backyard composting, grasscycling, and pesticide use reduction under a "Natural Lawn and Garden Care" theme
- **Sustainable Building** — U.S. Green Building Council's Leadership in Energy & Environmental Design (LEED) standards for city-owned buildings. Sustainable building includes promotion of building materials salvage and recycling.
- **Product Stewardship** — participation in the inter-governmental Northwest Product Stewardship Council and the national Product Stewardship Institute. Stewardship includes support for state legislation requiring producer responsibility for end-of-life materials management.
- **Other Waste Prevention Activities** — expanded City of Seattle green purchasing practices. Other activities include public education on better or safer products to use and general waste reduction through SPU publications, media, and SPU's outreach consultant.

In the sections that follow, these programs are described in detail, including the changes they've undergone over time.

Table 3-1
Seattle Waste Prevention Goals 1998 and 2004

Recommendation	Status
1998 Plan	
Increase waste reduction and resource conservation	Ongoing
Increase consumer and producer responsibility for sustainable waste management practices	Ongoing Notable success in producer responsibility for electronic wastes
Implement Seattle Sustainable Building Action Plan	Ongoing New and renovated city buildings meeting Leadership in Energy and Environmental Design (LEED) standards
Incorporate waste prevention into broader conservation message	Ongoing
Maximize impacts of conservation messages by partnering with other agencies	Ongoing Partnerships with King County and Local Hazardous Waste Management Program, and others
Target high-quantity materials, especially yard debris	Banned landscape waste from residential and commercial garbage. Continuing increases in compostable materials collected curbside
2004 Amendment	
Increase waste reduction and resource conservation	Ongoing
Increase consumer and producer responsibility for sustainable waste management practices	Ongoing Successes in product stewardship for electronic waste and mercury-containing lighting, Styrofoam food packaging ban and requirement that single-use food service packaging be compostable or recyclable
Implement Seattle Sustainable Building Action Plan	Ongoing With new regulations for deconstruction and increasing regulation of C&D wastes
Reduce toxic products in waste stream	Increased electronic waste recycling with E-Cycle Washington. Upcoming mercury lighting producer-paid end-of-life management. Green purchasing steadily improving
Continue to incorporate waste prevention into multi-dimensional conservation programs	Ongoing
Expand city's waste prevention activities to incorporate waste prevention targets established in "Sustaining our Commitment," Mayor Nickels' Plan to Reaffirm Seattle's Leadership in Recycling January 2003	Done
Focus on high-volume materials (paper and organics) and high-toxicity materials such as mercury	Ongoing Ban on paper and yard debris in residential and commercial collection. High-toxicity products primarily addressed by Local Hazardous Waste Management Program initiatives, or regulated through state legislation
Develop programs to influence organizational not just individual behavior	Ongoing Includes green purchasing, institutional food service efficiency, and food service packaging regulations
Establish methodology to measure non-SPU sponsored commercial waste prevention activities and give credit to businesses for waste prevention efforts	Ongoing Most effective in construction and demolition (C&D) salvage, deconstruction and recycling programs

3.2 PLANNING ISSUES FOR THIS UPDATE

This Plan update responds to a number of changes in the financial, political, and regulatory environment for waste prevention. It is also informed by the understanding SPU has gained from the past 5 years of program implementation. In those years, climate change has increased the importance of green house gas reduction in every area of city activity. Waste prevention is no exception. Reduction in materials, their use, and shifts in product design from disposable to recyclable are issues in this Plan.

3.2.1 ZERO WASTE RESOLUTION

City Council actions led to the biggest changes in SPU waste prevention activities. Those directives have called for definitive results over the next few years. Chief among the policy directives is Resolution 30990, known as the *Zero Waste Resolution*, passed in June 2007. The Zero Waste Resolution instructed SPU to:

- Increase support for the Northwest Product Stewardship Council
- Study problem (hard-to-recycle) products and propose strategies. The emphasis should be on the application of product stewardship principles. Strategies range from bans to market development that would reduce the presence of these products in the waste stream.
- Study bans of plastic shopping bags and expanded polystyrene (EPS, sometimes called Styrofoam) food service ware
- Participate in the state's electronic products take-back system, E-Cycle Washington
- Create a program of community waste prevention matching grants
- Develop strategies to increase recycling by customers self-hauling waste to the city's recycling and disposal stations
- Work with the Department of Planning and Development (DPD) to modify the demolition permit process to increase building materials salvage
- Increase waste-reduction audits and education for business and single- and multi-family customers

Actions in most of these areas have become part of the City of Seattle's waste prevention programs.

3.2.2 RECESSION

A second large influence on the City of Seattle's waste prevention programs was unanticipated. The deep recession beginning in 2007 reduced SPU revenue, which resulted in deep cuts in the waste prevention budget. Most programs—with the notable exception of support for recyclable and compostable food service packaging—will be curtailed, possibly, for several years. For example, SPU put further study of problem products (toxic and hard-to-recycle materials, or recyclables still unsupported by markets) on hold at the end of 2009.

3.2.3 *BEYOND WASTE*

Among regulatory changes, the Washington State Department of Ecology (Ecology) released its revised *Beyond Waste c*omprehensive plan for the state. Notable among its recommendations for waste prevention is a call for greater attention to the "technical nutrient cycle." This concept forces attention on closed-loop systems for processing and reuse of materials. The idea is to minimize "down-cycling" of materials into lower value products. SPU plans to address this mandate two ways:

1. Continued emphasis on market development for under-recycled materials
2. Work with the industrial sector to promote exchange of process byproducts from businesses that need to discard materials to those that can use them in production.

The new *Beyond Waste* plan also calls out waste prevention for product packaging. Seattle is already deeply involved in single-use food service ware and packaging regulations. The City of Seattle also participates on the Northwest Product Stewardship Council's packaging subcommittee, which is examining packaging regulations used in Europe and Canada.

Reuse is a key part of the state's *Beyond Waste* hierarchy of "reduce, reuse, recycle." Reusing consumer products and industrial materials (such as production byproducts) slows the frequency of product and materials replacement. It also reduces green house gas generation from producing new products, whether of virgin or recycled materials.

In general, product and materials reuse is the result of individual or individual business decisions. Consequently, policies promoting reuse mostly emphasize public education, attempting to change behavior by changing attitudes and beliefs. Reuse programs need to be designed to make it easy for the public and businesses to take action—choosing charitable donation rather than disposal, for example. Only rarely does reuse policy directly involve regulation.

3.2.4 PRODUCT STEWARDSHIP LEGISLATION

Product stewardship is a strategy that places responsibility for life-cycle environmental impacts on designers, producers, marketers, and users of products. Product stewardship is often called *Extended Producer Responsibility* or EPR. It seeks to minimize environmental impacts, including reducing toxic contents, throughout a product's life cycle. Greatest responsibility lies with whoever has the most ability to affect the life-cycle environmental impacts of a product. That is usually the producer or "brand owner."

New product stewardship legislation in Washington State and nationally has spurred interest in producer responsibility strategies for waste prevention, increasing recycling, and managing waste. Legislation is a key tool by which producers may be charged with funding and managing products at the end of product life.

Product Stewardship Changes Who Pays and How

Producers may bear the costs of reuse and materials recycling programs in two ways. One is cost internalization, in which end-of-life costs are included in a product's price (as they are in the E-Cycle Washington program). This is generally the preferred alternative. Another way for producers to bear the costs is by paying fees to local solid waste agencies. Producers, stewardship organizations acting for groups of producers, or even product users may be subject

to the fees. Currently, solid waste and recycling collection and processing is almost entirely a local government responsibility paid for by residents and businesses in the local service area.

Cost Internalization (Recovery Built into Product Price)

Producer funded take-back services have emerged as the model for producer funded recovery programs. These services include waste handling that is funded or provided by producers of materials. The materials are (mostly) handled outside the city solid waste system. Products already covered by producer product stewardship programs, or under consideration at the state level, include electronics, pharmaceuticals, carpet, and products containing mercury. The list continues to grow with legislation for paint and rechargeable batteries under consideration in 2012. In this case, the program funding is from producers through a stewardship organization.

Targeted Fees (Extra Charges for Recovery)

In lieu of statewide programs, Seattle has in some cases adopted or considered "recovery" fees, which may be applied in a variety of ways depending on program goals:

- **Consumer Recovery Fees —** These fees are designed to affect consumer choices and are charged when a product is purchased. There are at least two types:
  - A fee established as a City of Seattle solid waste fee and remitted to the Solid Waste Fund to cover solid waste services.
  - A fee required by city regulation to be charged by businesses, to discourage purchase or use of a product, and retained by the seller to cover fee administration costs.
- **Producer Paid Recovery Fees —** Producers, or in some cases retailers, may pay fees to the Solid Waste Fund when a product is either sold or distributed. SPU would use these fees to pay for recycling or disposal of that product. It could also use the revenue for waste reduction programs designed to reduce demand for (or waste associated with) that product.
- **SPU Rates —** Rates are charged for city handling of products that have been used and discarded as solid waste. Rates are based on what is discarded rather than on what is bought or distributed (the focus of recovery fees). Products suited to rate funding include food waste and yard waste.

While cost-internalized, industry-paid stewardship programs are the best approach, visible targeted fees might be considered for specific products or materials to:

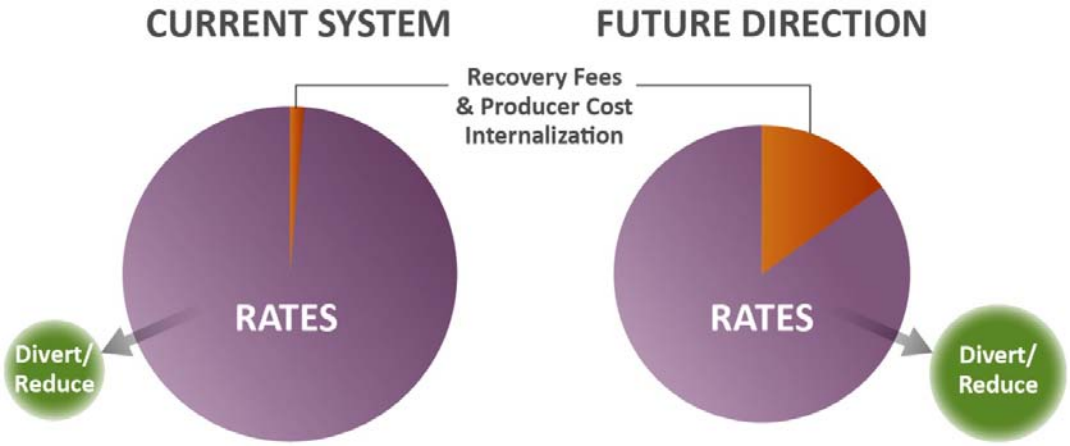
- Recover collection and disposal costs
- Divert toxic or other problem materials in the absence of state regulation
- Affect consumer choices to reduce or avoid use of a product or material
- Promote waste reducing product and packaging redesign
- Place responsibility and management costs on producers and users of various products rather than on the entire community of solid waste ratepayers
- Discourage use of products intended for one-time use when reusable alternatives are available

Product Stewardship Changes Behaviors

An expected outcome from requiring producers to pay for end-of-life management of what they make is more attention to product design, to make reuse and recycling easier. Reuse or recycling is preferred whenever possible.

Product stewardship can also influence consumer behavior (Figure 3-1). As product stewardship costs are either internalized into the cost of the product, or made visible to the buyer as "advance recovery fees" or "eco fees," consumers may choose to purchase less and to buy less wasteful products.

Figure 3-1
Producer Cost Internalization and Recovery Fees Change Who Pays



Product Stewardship Eases Ratepayer Burden

Cost internalization and fees for end-of-life product management both ease the burden on general solid waste ratepayers through:

- Industry established and managed reuse and recycling programs, such as take-back services, that prevent products from entering the MSW system
- Producers paying local jurisdictions for managing the material, in cases where that is a more effective strategy

Strategic Considerations

Product and materials impacts extend across jurisdictions. Industry prefers state or federal regulation to "level the playing field." For that reason, producer take-back programs generally have been pursued through statewide legislation and programs rather than through City of Seattle efforts. These regulations are often intended to divert waste from the city solid waste system. For example, the E-Cycle Washington program for computers, "tablet" sized devices,

and televisions diverts all those products from MSW to a separate collection system funded by manufacturers.

A disposal ban of certain materials (such as hazardous materials) might be used in conjunction with a producer take-back or a government-sponsored special collection and management system. Seattle has also used disposal bans in conjunction with rate design to shift materials from garbage to recycling or compostable waste.

The following questions need to be answered in planning new product stewardship programs:

- **Who pays?**
  - consumer at time of purchase
  - retailer or producer through "cost internalization" (where recovery cost is imbedded in the price of the product and not visible)
- **Who receives the revenue?**
  - City of Seattle Solid Waste Fund
  - retailers selling a targeted product
  - a third-party organization (which then remits to a service provider, City of Seattle or contractor)
- **How high should fees be?**
  - charges sufficient to cover city handling and disposal costs
  - additional funding for city waste reduction and recycling programs. For example, the yellow pages opt-out system run by the city is paid for by a fee charged to publishers.
  - a level high enough to encourage consumers to make waste reducing choices
- **What should the revenue be used for?**
  - funding the City of Seattle solid waste system generally
  - specific waste reduction and recycling programs
  - cost recovery for recycling or disposal of specific products
  - cost sharing with retail or other product take-back locations
- **How should recovery or producer charges be administered?**
  - as a City of Seattle solid waste fee independent of rates
  - as part of City of Seattle solid waste rates and charges adopted with rates
  - as regulations requiring retailers to add a charge for a product
  - via producer paid and managed recycling or disposal outside the City of Seattle solid waste system

Other items to address when analyzing potential city product stewardship actions include:

- **Timeline?** Is statewide product stewardship legislation likely only in the distant future? If so, should Seattle:
  - use these strategies in individual cases when the opportunity exists, or
  - formalize a long-term strategy into which near-term actions will fit?
- **One product at a time or groups of products?** Are there administrative or legal advantages to placing recovery fees on multiple products with similar characteristics at the same time? This is in contrast to one-at-a-time legislation that regulates a single product.
- **Are advance fees an efficient cost recovery system?** If advance fees are collected in many venues and remitted to SPU, is it efficient to administer both a system of advance fees and SPU bills? Does the tonnage reduction from an advance fee justify the added cost for all products or just for some? Are there threshold impacts (tons, toxicity, hazardous) that would justify the added administrative cost?

Seattle may develop a strategic framework for product stewardship based on decisions around these choices.

3.2.5 GREEN JOBS

The recent recession has played a role in green jobs development. Because of the downturn, there is increased interest in creating these jobs. Building materials salvage and reuse is an area where SPU is already working with other agencies and businesses to find green jobs.

3.3 CURRENT PROGRAMS AND PRACTICES

The City of Seattle has five major areas of waste prevention programs:

- Reuse
- Sustainable building
- Organics
- Product stewardship
- Other waste prevention activities

The program areas are not always distinct. There is some overlap. For example, reuse includes diversion of salvageable building materials, which is also part of the green building program. These overlaps will be noted as needed.

3.3.1 REUSE

The State of Washington's comprehensive solid waste plan, *Beyond Waste*, established "reduce, reuse, and recycle" as the fundamental principle of waste reduction for solid waste management. Along with messages about reducing consumption, SPU promotes reuse opportunities for households and businesses. For example, SPU often reminds customers to

donate rather than discard used clothing and household items, including electronics. The City of Seattle's own end-of-life policy for electronics mandates donation to schools wherever possible.

City agencies also model best practices with programs for reusing office supplies. Two programs, "Too Good to Toss" (building materials diversion at Seattle's two transfer stations) and market development for industrial byproducts, keep materials from entering the waste stream.

Transfer Stations "Too Good to Toss"

"Too Good to Toss" diverts salvageable building materials, good furniture, and bicycles from loads going into Seattle transfer stations. It is by tonnage SPU's largest reuse activity. SPU began this program at the North Recycling and Disposal Station in 2008 and recovered about 100 tons that year. The program runs on weekends only. SPU expanded it in 2009 to the South Recycling and Disposal Station, though it's currently on hold pending the opening of the rebuilt South Transfer Station. The reusables collectors, all non-profits, provide the diversion service at no cost to SPU.

"Too Good to Toss" grew out of "Use-It-Again, Seattle" neighborhood-exchange events from 2003 to 2006. Those events involved direct costs and required sizable SPU staffing. SPU ended them, although six events in 2003 diverted an estimated 500 tons from disposal. SPU also found that these events provoked illegal dumping. Sometimes items from outside Seattle or the neighborhood were brought in. And some residents offered unwanted household goods for "free" at the curb, outside the program's limits.

Market Development for Reuse

In 2008, SPU expanded its market development for business and industrial waste. That year, SPU joined and began providing financial support for By-Product Synergy Northwest. By-Product Synergy is an association of businesses supported by government and research institutions. It promotes the direct exchange between producers' byproducts and companies that can use them. The program aims to reduce waste and save money for participating manufacturers.

SPU has also partnered with King County in several market development efforts. Recently, funding has dropped for both agencies. However, King County Link-Up, a program to increase markets for recyclables, completed a test of recycled asphalt shingles put in asphalt paving mix. The testing proved to the paving industry that asphalt shingles can be recycled.

3.3.2 SUSTAINABLE BUILDING

The City of Seattle's broad commitment to environmental sustainability includes strategies supporting greener building design, demolition, and construction. Some of these programs seek to increase waste prevention and recycling. Those focusing on waste prevention are described in this section. See Chapter 5, Other Seattle Solid Waste Programs, for detail on our programs to increase construction and demolition (C&D) waste recycling.

LEED Standards

Since 2000, City of Seattle policy requires all new and remodeled city-owned buildings of more than 5,000 square feet to meet the LEED silver standard. LEED is the Leadership in Energy and Environmental Design rating system of the U.S. Green Building Council. Some Seattle buildings

have been awarded ratings above silver, either gold or platinum. The LEED system grants rating points for, among other things, recycling of demolition and building construction wastes.

By adopting the LEED standards for its own buildings, the city successfully set an example for private sector development. Seattle has now become a nationwide leader in the number of LEED buildings. By 2010, there were 74 LEED-rated new buildings in Seattle. Because of LEED requirements, in 2008 more than 16,000 tons of C&D wastes were diverted to recycling, according to an SPU consultant study. In the decade from 2000 to 2010, for 47 LEED buildings documented, the total exceeded 100,000 tons according to DPD data. SPU believes that construction to LEED standards also stimulates increased use of salvaged building materials and more efficient use of new materials, though results have not been quantified.

Green Building Team

To promote LEED standards and other energy and material-conservation strategies by the building industry, the City of Seattle created a Green Building Team in 2000. Housed in DPD, the Green Building Team includes experts from SPU and Seattle City Light and is partly supported by those departments. SPU support, primarily from the water and solid waste business areas, has ranged from a high of about $350,000 in 2006 to about $200,000 in 2010. The team's programs include policy development, technical assistance, outreach, and marketing.

In addition to the Green Building Team, SPU has supported a variety of related programs and technical assistance projects. For example, through the Built Green industry organization, SPU offered grants to small multi-family residential builders who achieved high levels of recycling from their jobsites. Early planning is underway for deconstruction and salvage of materials for reuse from the Seattle Housing Authority Yesler Terrace redevelopment.

SPU's public information materials for contractors, produced jointly with King County and DPD, include waste reduction. The King County-Seattle Construction Recycling Directory, published regularly and online, provides worksheets and guidance on how contractors can best recycle and reuse building materials. Through DPD's Green Building Program, SPU also issued a series of remodel guides, including one for salvage and reuse. A series of case studies, on both city and private projects, highlights the costs and benefits of various sustainable building approaches. The studies are available to the public in pamphlet and electronic form.

Salvage and Deconstruction

In the 2004 Plan Amendment, SPU promised to expand technical assistance for waste diversion. In 2007 and 2008, much of this was focused on diverting C&D waste from landfill and upgrading the outcomes for some materials from recycling to reuse. SPU pilot programs supported and gathered data on eight "deconstruction" projects to promote salvage of building materials.

Building Salvage/Deconstruction Pilot Projects

Building salvage is an alternative to conventional demolition. With salvage, a structure is carefully taken apart, saving building elements for reuse. Commonly salvaged materials include structural beams and dimensional lumber, wood flooring, cabinetry, casework and doors, architectural details, brick and stone. Salvage operations can range from selective removal of high-value elements to full-scale deconstruction.

Building salvage can be an important additional service a demolition company can offer clients. More customers are becoming environmentally aware. They want waste

reduction on the jobsite and they use green building rating systems such as LEED and Built Green that call for waste reduction, salvage and recycling.

To evaluate the cost-effectiveness and waste diversion potential of differing salvage approaches, SPU and the Washington State Department of Ecology sponsored a series of salvage and deconstruction pilot projects. The results of the pilot projects provided detailed data on the costs and benefits of these approaches, including salvage, deconstruction and house moving. The studies showed that deconstruction increases waste diversion, especially salvage and reuse, compared to demolition or demolition with comingled recycling.

Deconstruction Permit Created and House Moving Promoted

Following the guidance of the *Zero Waste Resolution*, SPU and DPD analyzed re-use and recycling opportunities in the C&D industries. An initial objective was promotion of increased building materials salvage and re-use opportunities.

Early in 2009, the City Council approved a DPD ordinance creating incentives for salvage and deconstruction in lieu of demolition for single-family buildings. The ordinance allows builders committed to salvage and recycling goals to begin deconstruction before a building permit is issued. That timing is in contrast to previous procedures by which the city issued demolition and building permits at the same time. The old procedure left no incentive for careful deconstruction of dwellings and salvage of reusable materials. In 2010, 10 builders used the deconstruction permit. This number is likely to rise when residential construction recovers from the recession.

SPU also conducted a study that identified barriers to house moving. The report suggested changes in city regulatory fees and practices to remove some of the barriers. A parallel study affirmed the value in waste and green house gas reduction when houses are moved rather than destroyed. Moving a single house can divert 40 to 80 tons from landfill, and Seattle expects to continue to promote house moving.

Hybrid Deconstruction Program

Hybrid deconstruction is a technique between demolition and deconstruction. Typically, deconstruction is quite labor-intensive. In hybrid deconstruction, elements of the building are cut into panels and then disassembled quickly on the ground. Disassembly can occur at the jobsite or at a specialized yard called a *hybrid deconstruction center*. SPU obtained a 2009 Coordinated Prevention Grant from Ecology to develop a business case for a hybrid deconstruction center in the Seattle area. If a center were developed, it would further lower the cost of deconstruction relative to traditional demolition, and additionally, support green jobs training.

The study showed that such a development was high priced. Setting up a hybrid deconstruction center has become even less possible because of recession-caused drops in SPU funding. SPU plans to continue technical and policy support of existing salvage and deconstruction businesses.

In coming years, SPU's hybrid deconstruction program will include efforts to:

- encourage industry to develop a grading system to facilitate reuse of structural lumber

- promote building material reuse through diversion at SPU's north and south transfer stations
- publicize salvage, deconstruction and house moving policies
- develop a salvage and deconstruction curriculum in connection with green jobs programs

3.3.3 ORGANICS

Organic materials—food and yard waste—present a significant opportunity for waste reduction. SPU has conducted programs in three major areas to divert organics from the waste stream:

- Residential backyard composting (including grasscycling)
- Edible food recovery from grocery stores and restaurants for feeding programs
- "Lean Path" analysis of restaurant kitchen efficiency

After maximizing onsite waste reduction, SPU focuses on organics collection programs for composting instead of landfilling.

Residential Backyard Food and Yard Waste Composting

Several city activities encourage property owners to manage organic wastes onsite. These include support for the Natural Lawn and Garden Hotline operated by contractor Seattle Tilth Association. SPU also ran programs offering discount compost bins, and continues to offer education publications, and hands-on training for householders and landscape professionals. Some of these projects are partly supported by the Local Hazardous Waste Management Program, and partly funded by a Coordinated Prevention Grant from the Washington State Department of Ecology.

A Seattle and King County program, Northwest Natural Yard Days (NNYD), furthered the onsite organics management message, including grasscycling. NNYD was a partnership with retailers. It offered discounts or rebates on mulching mowers, soaker hoses and other conservation tools for home landscapes. Seattle also collected and recycled home gas mowers as part of the Mayor's Climate Change Initiative. Mower rebates ended in 2008 and NNYD ended in 2009 after 12 years of operation. However, even with reduced spending and modest outreach, SPU expects residents using natural yard techniques to keep up household organics waste reduction.

Backyard composting by Seattle households peaked between 2000 and 2005. It declined since then because of the City of Seattle's decision to permit vegetative food waste in residential yard waste bins starting 2005. A bigger change occurred at the end of March 2009. As part of the rollout of new collection contracts, SPU required all single-family accounts to have food and yard waste carts. At the same time, SPU added meat and dairy products to the list of products allowed in curbside food and yard waste bins.

SPU also increasingly encouraged residential customers to use curbside food waste service as part of its strategy to meet the Seattle's 60% recycling goal. As a result, the number of households backyard composting declined. In 2000, 46% did backyard composting of yard waste, then 40% in 2005 and down to 30% in 2010, according to a 2010 Home Organics Survey. Backyard composting of food waste showed a similar pattern, declining over the decade from

31% participation to 20%. Faced with this trend and other demands on solid waste revenues, in 2011 the utility ended subsidized sales of backyard compost bins and green cone composters.

Edible Food Recovery

SPU added the Edible Food Recovery program in 2006. This program helps divert edible food from commercial food businesses to programs that feed the hungry, in two ways. First, food and hospitality industries are encouraged to donate surplus food to hunger-relief agencies. Second, SPU has assisted hunger-relief agencies with grants to fund refrigeration and other equipment (through 2010). The refrigeration equipment has enabled agencies to store perishables longer and thereby distribute more food before it spoils.

Between 2006 and 2010, SPU funded $394,021 for 19 hunger agencies to buy equipment for safe transport, storage, and use of donated food (Table 3-2). Over a 10-year period, this investment should divert nearly 23,000 tons of edible food from the waste stream, at a cost of $29 per ton. At a disposal cost of $53 per ton, over 10 years the investments will yield about $1,216,721 in savings from avoided disposal costs for the utility.

Table 3-2
SPU Food Recovery Investments 2006 – 2010

Year	Agency	Project	SPU investment	Projected 10-yr diversion (in tons)	Value of 10-yr diversion	SPU investment (per ton)
2006	Food Lifeline	Walk-in refrig/freezer	$90,000	4,500	$238,500	$20
2007	Food Lifeline	Shoreline facility retrofit	$75,000	4,400	$233,200	$17
2007	Downtown Food Bank	Refrig equipment	$10,000	205	$10,865	$49
2008	Ballard Food Bank	Upgrade truck	$9,908	275	$14,575	$36
2008	Food Lifeline	Food recovery equip Seattle's Table	$14,998	NA	NA	NA
2008	Food Lifeline	Waste prevention recycling grant	$14,159	NA	NA	NA
2008	Genesis House	Refrigerator and freezer	$6,057	76.5	$4,055	$79
2008	Hunger Intervention Program	Refrig, freezer, food processing	$13,459	185	$9,805	$73
2008	St Vincent de Paul	Walk-in cooler	$10,000	3,900	$206,700	$3
2008	Union Gospel Mission	Refrig box truck	$25,000	1,438	$76,214	$17
2009	Beacon Ave food bank	Food transport & distribution equip	$1,553	90	$4,770	$17
2009	Community lunch on Capitol Hill	Food storage & process equip	$10,000	274	$14,522	$36
2009	Food bank of St Mary's	Food recovery truck upgrade	$7,108	934	$49,502	$8
2009	North Helpline	Refrig truck purchase	$16,500	1,292	$68,476	$13
2009	Pike Market Senior Center	Refrig equip repair	$10,049	269	$14,257	$37
2009	St Vincent de Paul	Refrig box truck	$15,664	1,761	$93,333	$9
2009	Union Gospel Mission	Commercial freezers	$13,099	2,171	$115,063	$6
2010	Bread of Life Mission	Four freezers	$15,078	288	$15,264	$52

Year	Agency	Project	SPU investment	Projected 10-yr diversion (in tons)	Value of 10-yr diversion	SPU investment (per ton)
2010	Immanuel Community Services	Kitchen equipment upgrade	$3,710	122	$6,466	$30
2010	Puget Sound Labor Agency	Refrigerator & coolers	$3,586	95	$5,035	$38
2010	Rainier Valley Food Bank	Elec pallet jack & refrigerator	$6,583	151	$8,003	$44
2010	University District Food Bank	Freezer & elec scale	$2,910	130	$6,890	$22
2010	Volunteers of America - Greenwood Food Bank	Refrigerated food recovery van	$19,600	400	$21,200	$49
	Total		**$394,021**	**22,957**	**$1,216,695**	**$29**

SPU has also subsidized compostable organics collection costs for these agencies and others. The subsidies helped the agencies cover costs as they switched from garbage collection only, to both garbage and compost collection. When the switch is complete, agencies save money.

The Edible Food Recovery Program is expected to remain extremely important during the economic recession and on into the first years of the period covered by this Plan.

Restaurant and Institutional Kitchen Efficiency

Lean Path, a proprietary kitchen food waste management system, became part of SPU's Onsite Organics program. Lean Path provides technical assistance to commercial kitchens to reduce waste through more efficient food purchasing and preparation.

Under SPU's direction, a consultant recruited and trained three institutional kitchens from 2008 through 2010: Seattle University and Swedish and Northwest hospitals. The three kitchens prevented a yearly combined total of almost 32 tons of food waste, by more closely matching purchases to food actually used. The three sites continue to use this strategy. SPU is interested in promoting this service to restaurants in connection with expanded compost collection. Expanding the program depends on SPU funding.

Single-Use Food Service Packaging

The 2007 *Zero Waste Resolution* instructed SPU to study banning plastic shopping bags and expanded polystyrene (EPS, sometimes called Styrofoam) food service ware. Following a detailed study, Ordinance 122751 banned the use of EPS food service containers, cups, and plates in Seattle. The ban took effect January 1, 2009.

With the ban in place, SPU and its partner Cedar Grove Composting strongly encouraged restaurants to switch to compostable food service products rather than to other plastics. These changes focused restaurant-industry attention on the need for and benefits of commercial food waste collection.

In 2010, SPU performed broad stakeholder outreach and public education to help food businesses meet the second requirement of Ordinance 122751. The ordinance requires all food service businesses to replace one-time-use (throwaway) food service ware and packaging with

compostable or recyclable food-ware. With compostable products, people can put leftover food, still in the product, straight into an organics bin, rather than a garbage bin.

SPU estimates that using compostable food service ware at Seattle quick-serve restaurants will divert 6,000 tons of waste per year from the landfill, including 4,500 tons of leftover food. This figure does not include kitchen wastes or leftover food collected for composting from full-service restaurants.

The program to encourage compostable one-time use products has SPU working with partners to sign up restaurants for food waste compost pickup. By mid-2011, about 2,000 Seattle restaurants were using composting pickup services.

3.3.4 PRODUCT STEWARDSHIP

The City of Seattle supports a product stewardship approach to product end-of-life management. It does so through the Northwest Product Stewardship Council, and through its own studies, legislation, and support for state legislation.

Northwest Product Stewardship Council

SPU is a partner of the Northwest Product Stewardship Council (NWPSC), a coalition of government organizations in Washington and Oregon. The Council is comprised of a 15 member Steering Committee that works with Associate Members to promote product stewardship programs and policies. NWPSC sets regional goals for managing problem materials such as mercury thermostats, paint, fluorescent lighting, chemicals, pharmaceuticals, and electronics. The City of Seattle serves on the NWPSC steering committee. In the past 5 years, NWPSC has done the following:

Legislation

- In 2007, NWPSC members supported passage of the Washington State electronics recycling legislation that created the manufacturer-financed E-Cycle Washington program that offers recycling of computers, monitors, laptops, “tablets,” and TVs at no charge to Washington residents, schools, small businesses and non-profit organizations.
- In 2010, NWPSC members supported passage of legislation requiring producers of mercury-containing lighting products to pay for their end-of-life collection and recycling beginning in 2013
- In 2009, 2010, 2011, and 2012 NWPSC members pursued producer responsibility legislation for unwanted leftover medicines (Secure Medicine Return Bill)

Education

- Developed professionally-narrated PowerPoint to inform other agencies and public about product stewardship
- Hosted 2009 national conference of Product Stewardship Institute (PSI) jointly with the North American Hazardous Materials Management Association regional conference in Seattle

- Supported and participated in PSI national dialogues with producers seeking product stewardship (Extended Producer Responsibility or EPR) for mercury-containing lighting products, phone books, and paint
- In 2011, organized a conference on "Product Stewardship Strategies for Local Governments" attended by more than 100 agency and industry professionals

Program Support

- Launched and supported growth of the *Take-It-Back* Network of retailers who, for a fee, take back various electronic products and mercury-containing lighting products
- As a test for secure medicine return, participated in a take-back pilot program in 2006-2011. The *Pharmaceuticals: A Return Mechanism* (PH:ARM) pilot program collected unwanted pharmaceuticals in secure return containers at Bartell's and Group Health pharmacies in several counties beginning in 2007 (Table 3-3.)

Table 3-3
***Pharmaceuticals: A Return Mechanism* Pilot Program**
Pounds Disposed 2007 - 2009

Year	Group Health	Bartell Drugs	Total Pounds
2007	4,226		4,226
2008	12,432	764	13,196
2009	14,206	3,871	18,077
Total	30,864	4,635	35,499

Current Initiatives

SPU's commitment to product stewardship has grown since 2004. During 2009, 2010, and 2011 legislative sessions, we worked with the City of Seattle's Office of Intergovernmental Relations to support a proposed Secure Medicine Return Bill, and a successful bill for Recycling Mercury-Containing Lights (ESSB 5543).

SPU continues to be active on NWPSC committees developing product stewardship legislation for paint, carpet, batteries and various types of packaging. SPU also maintains membership in the Product Stewardship Institute, a national advocacy organization. Through PSI, we participate in national policy dialogues with industry. Current dialogues seek to establish end-of-life responsibility for unused architectural paint and phone books.

Consumer Product Regulations

Recently, SPU has focused its waste prevention activities on consumer product initiatives.

Disposable Bags

Following approval of the *Zero Waste Resolution* in July 2007, SPU did an in-depth study of bans or other regulation for disposable shopping bags, and disposable food service ware. The study led the city to propose an advance recovery fee, or "Green Fee," on disposable shopping bags. The Green Fee was to be charged on bags—both plastic and paper—from grocery, convenience, or drug stores. A voter initiative removed the City Council ordinance imposing the Green Fee. In 2011, the council returned to the issue, banning single-use plastic carry-out bags and requiring a 5-cent fee be charged for large paper bags.

Food Service Ware

The same study suggested a ban on EPS food service ware of all kinds, which the City Council enacted in July 2008. That ban took effect January 1, 2009. Following the ban, substitute materials of all kinds were permitted until July 1, 2010, at which time the ordinance required Seattle food service business to use either compostable or recyclable products for all one-time-use food service ware and packaging. These "quick serve" businesses range from taco trucks to hospital cafeterias. Promoting, facilitating, and educating the public about this changeover has been a major part of Waste Prevention work in 2010 and 2011. SPU expects a nearly equal effort for several more years. See this chapter's discussion of single-use food service packaging.

Seattle's requirement that all single-use food service products be compostable or recyclable has had a dramatic effect on the food service packaging industry. The number of compostable products available to restaurants leaped from 70 to more than 700 in barely 2 years. The city expects that with full implementation by the end of 2012, the food service packaging regulations will divert 6,000 tons of packaging and leftover food from landfill.

Junk Mail and Yellow Pages Phone Books

Following City Council instruction, SPU looked into the problems of unwanted advertising (junk) mail and unwanted yellow pages phone books in 2010. Phone book companies often deliver yellow pages books to homes and businesses who do not want them. This work led the City Council to pass Ordinance 123427 in October 2010, authorizing SPU to set up a yellow pages opt-out registry. The registry would track incorrect deliveries. The ordinance levied a per-book charge on publishers' deliveries to reimburse SPU costs for running the registry. There was also a tonnage charge on yellow pages books to compensate SPU and, indirectly, ratepayers, for the costs of recycling and disposal.

Subsequently, yellow pages publishers sued the City of Seattle to overturn the ordinance and the City Council repealed the tonnage charge in the face of that suit. Court action on the legality of the opt-out registry fee was pending in spring of 2012.

Nevertheless, SPU engaged a contractor to manage the online yellow pages opt-out registry, and to offer a separate junk mail opt-out service linked from SPU's website. The yellow pages phone book and junk mail services both launched in May 2011. Yellow pages phone books opt-outs quickly soared to an annual rate of 300 tons of paper saved. At the same time, a federal judge denied yellow pages publishers' requests for injunctions to stop the yellow pages opt-out service. Since the junk mail service was not part of the lawsuit it will continue regardless of the court's decision on yellow pages. From the junk mail opt-out service, SPU expects to obtain data on the number of opt-out requests and the amount of paper saved.

Additional Product Studies

SPU also studied eight other problem products. The products were selected because they are recyclable materials appearing in relatively large volumes in the waste stream. Or they are toxic to some degree, making them difficult to recycle. The aim of the study was to determine strategies for increased recycling of these products. The products included carpet, plastic film from commercial sources, treated wood, mercury-containing lighting products, medical sharps, non-automotive batteries, expanded polystyrene block foam and textiles. The study focused on market development and product stewardship opportunities. Further study of additional problem products depends on the growth of solid waste funding.

The eight products already studied (Phase I) and the approximate order of further study and action are shown in Table 3-4.

Table 3-4
Planned Evaluation Schedule for Problem Products and Packaging in Seattle

	Product or Packaging	Disposed 2004 (tons estimate)	Possible Action
Phase I (Current Study)	Treated wood waste	13,600	No change
	Medical sharps		Possible state legislation
	Carpet	14,000	Possible state legislation; local take-back established
	Plastic film (commercial applications)	16,000	Collection program end 2011
	Fluorescent lamps	50	State action in 2010
	EPS block foam and void fill packaging	1,100	Possible program 2012
	Batteries	200	No action
	Textiles	7,600	No action
Phase II	PVC clamshell/blister packaging (non-food)	400	No action; see NWPSC packaging report 2011
	Single-use plastic beverage containers	1,600	Covered in NWPSC packaging report 2011
	Paint (oil-based & latex) and aero cans	(paint) 660 (aero cans) 420	Awaiting state legislation planned for 2012
	Telephone books (yellow pages)	260	Opt-Out Registry approved 2010; recovery fee proposed, then dropped
	Plastic film (consumer packaging)	4,650	Covered in NWPSC packaging report 2011
Phase III	Tires	210	No action
	Small appliances	1,125	No action
	Plastic food packaging & Other plastics	20,000 (excludes bottles, jars, film)	Single-use food packaging regulated in 2010
	Household metals	5,500	Most in curbside 2009
Continue under Existing Efforts	General purpose polystyrene food containers	120	Banned 2009
	Paperboard Corrugated cardboard (OCC)	21,500	Continue existing efforts
	Pallets/crates - "urban wood"	37,000 (excludes treated wood)	
	Pesticides and fertilizers	100	
	Spent antifreeze		
	Household cleaning agents	230	
	Mercury-containing equip & thermostats		Work through NWPSC for state action

Product or Packaging		Disposed 2004 (tons estimate)	Possible Action
	Products containing bisphenol A (BPA)		Likely to require state action
	Products containing phthalates		
	Lead in jewelry & children's products		
	Brominated fire retardants		
	Metals in product packaging		
	Pharmaceutical waste		Secure Medicine Return Bill 2008-2012
	Radioactive devices		Likely to require state action
	Cellular phones		Through NWPSC add to Electronic Product Recycling Law as possible
	Computers and computer monitors	1,300	Continue current programs
	VCRs, stereos, televisions	2,600	Add to Electronic Product Recycling Law where needed
	Major appliances		
	Used motor oil	(includes diesel) 52	Motor oil added to curbside in 2009
	Lead-acid automotive batteries	130	Support current take-back system

EPS = expanded polystyrene; OCC = old corrugated cardboard; PVC = polyvinyl chloride
Source: "Revised 60% Projections, March 24, 2006 Update," SPU staff

E-Cycle Washington

The statewide E-Cycle Washington product stewardship program began in 2007. SPU signed up with the operating agency, the Washington Materials Management and Financing Authority, as a collector. SPU offers curbside collection of the five products covered by the E-Cycle Washington program (computers and laptops, monitors, tablets, and TV sets) and other electronic products for $20 per pickup. Customers call in to arrange collection.

E-Cycle Washington's convenient drop-off sites throughout the city explain why SPU's electronic waste curbside service received little use (approximately 1,000 calls per year) in 2009 and 2010.

All electronics collected at curbside or otherwise entering the city's MSW system are delivered for processing to facilities that meet or exceed the standards of the Basel Action Network (BAN) Electronics Recyclers Pledge of True Stewardship and Washington Department of Ecology's Environmentally Sound Management and Performance Standards for Direct Processors. The City Council is considering upgrading to the more rigorous BAN e-Stewards standards in the near future.

The City of Seattle donates its own surplussed workable computers as needed to Seattle Public Schools and other non-profits, with the remainder sold to the public. In 2010, almost 90% of more than 2,000 surplussed computers were donated. Unworkable electronics products are disposed under a contract requiring the company to meet either BAN standards or a similar declaration acceptable to the state.

3.3.5 OTHER WASTE PREVENTION ACTIVITIES

Waste prevention strategies are typically determined by the products or materials targeted. For example, office paper, which is easily recycled, is often carelessly overused. Carpet, which contains high-value plastic fibers, is heavy to ship and reprocessing plants are thousands of

miles away. For these and other products, such varying barriers to effective recycling lead to different strategies, a number of which are noted here.

Market Development

A major program within waste prevention is market development for typically hard-to-recycle materials. Currently, chief among those products is carpet. SPU staff work has greatly increased the likelihood that new carpet recovery facilities will locate in the Seattle area. With King County, SPU has supported research leading to the use of recycled asphalt shingles in hot mix asphalt. Work is under way with private-sector haulers to collect plastic film from commercial and industrial sources. Two other products are under consideration: gypsum wallboard and urban wood chips for pulp. However, action on these products needs to wait on the availability of funding.

Green Purchasing

"Green purchasing" approaches reduce the environmental impact of the whole range of products and materials purchased by the City of Seattle. City purchasing incorporates requirements based on Seattle Municipal Code to buy products with recycled content, that are less toxic, and that are recyclable and re-usable. Green purchasing policies and ordinances, including SMC 20.60.200, are available online.

Future green purchasing will emphasize two things: less packaging and aggressive controls on purchased chemicals. Less packaging prevents waste, and lower levels or absence of toxic chemicals will reduce exposures for staff and visitors to city facilities.

Paper Cuts

The Paper Cuts program was created in 2004 to show that the City of Seattle could walk its talk on waste reduction. At the end of 2009, this program came to a close with institutional changes solidly in place and a 28% overall reduction in reams of office paper purchased. Over the 5 years of this campaign, the city saved nearly 150,000 reams of paper, weighing nearly 350 tons (400 reams =1 ton). In 2009, this reduction saved $44,000 in paper purchasing costs.

In addition, current customer enrollment in SPU's paperless billing will save 524,880 sheets of paper and 349,920 envelopes each year, an amount equal to 4.4 tons of paper and 112 trees.

Waste Prevention and Recycling Matching Grants

In 2008, the City of Seattle established the Waste Prevention and Recycling Matching Fund, a community grant program. This program was another action called for by the Zero Waste Resolution. The purpose of the program is to support projects initiated by the community. The projects were to prevent waste generation, increase reuse, and increase recycling and composting. Data collected from the projects are used to develop effective models and strategies to share with residents and businesses.

In 2008 and 2009, the matching fund program received 50 applications requesting about $900,000 in all. SPU awarded $200,000 in matching funds to 17 projects. The projects included food recovery, school composting and recycling, commercial waste reduction, materials reuse, multi-family composting and recycling, and sustainable landscaping.

Exceeding expectations, the matching fund projects diverted more than 1,900 tons of waste and educated nearly 10,000 people about waste prevention, recycling and composting.

SPU was unable to fund the Waste Prevention and Recycling Matching Fund in 2010. The program was restored for 2011 with a focus on schools. Meanwhile, knowledge gained from 2008 to 2009 guided three other SPU programs in 2010:

1. **Increased Composting and Recycling in Schools.** Public and private school interest in the grant program convinced SPU to offer small grants from a $20,000 budget to maintain program momentum. This expanded dramatically thanks to restoration of the full $100,000 for grants in 2011. The schools requested help starting programs to separate lunchroom compostables (food waste and compostable food service packaging) for organics collection. As a result, the matching grant program for 2011 and 2012 was redesigned to provide significant assistance to Seattle Public Schools, in hopes such programs could be jump-started throughout the district.
2. **Outreach to Immigrant Communities.** SPU will continue partnering with community-based organizations to expand waste prevention and recycling outreach to immigrant and refugee businesses.
3. **Food Recovery.** Significant interest in food recovery will continue to be served through the Food Recovery Infrastructure Grants Program. This program previously ran concurrently with the Waste Prevention and Recycling Matching Fund.

Community Benefits from 2008 – 2009 Grants

- Involved over 500 volunteers who contributed more than 2,500 hours to grant projects
- Offered low or no-cost resources to low-income communities, including computers, bikes and up to 222 tons of food
- Created 6 new temporary positions funded by the grant
- Provided green job skills training for youth and low-income community members
- Provided service equity to immigrant, refugee and low-income communities
- Helped youth develop leadership skills
- Built and strengthened community networks

Outreach to Businesses

Reaching businesses with resource conservation and waste prevention programs has always been more difficult than communication with residents. For residents, the goal is usually modest and uniform behavior changes spread across a large population. And it's easier to reach the person in charge of waste management in the home. In contrast, increasing conservation, waste prevention and recycling in the commercial sector often requires a much greater level of contact, information and persistence. The payoff can be large, but often business processes—and sometimes just habits—must be changed.

For the past 15 years, SPU has used a contractor to provide the Resource Venture program. Resource Venture services include technical assistance and promoting resource conservation in the commercial sector. The consultant approach allowed focus to vary over time and include a

full range of SPU line-of-business outreach goals. Resource Venture services provide businesses with a range of suggestions from water conservation and office paper recycling and two-sided printing to green purchasing. Recently, Resource Venture has worked with quick-serve restaurants, to promote compostable food service ware as a replacement for one-time-use, throwaway products.

3.4 ALTERNATIVES AND RECOMMENDATIONS

SPU plays a vital role in reducing the city's impact and moving the community toward sustainability. In that context, waste prevention will continue to play a key role. Actions that SPU will take are described here.

3.4.1 REUSE

SPU will continue to expand broad-themed public education about product and materials reuse and implement programs to remove barriers to those activities. The city has taken a programmatic interest in several areas of materials reuse:

- Transfer station waste prevention
- Charitable donations
- Industrial materials reuse
- Electronic products reuse and expansion of covered products in the E-Cycle Washington program
- Building deconstruction and salvage

Transfer Station Waste Prevention "Too Good To Toss"

SPU will continue diverting materials for reuse at the transfer stations. Private contractors could continue to provide this service, or city transfer station staff could take it over. Pre-scale drop boxes maintained by various charities can also be part of the program. To increase building material salvage and recycling, loads of C&D wastes can be redirected to approved processing facilities.

Recommendations

- Continue, at least until the rebuilt transfer stations come on line, using contractors to divert reusable building materials and household items (such as furniture in good condition) from residents bringing loads to the transfer stations.
- Encourage charities to locate drop boxes or maintain open drop-off trailers either onsite (Bike Works) or nearby, as has been done over the past several years
- Develop educational materials for contractors now bringing C&D loads to Seattle's north and south transfer stations. The education pieces will direct them to source-separated drop-off services as well as processors of C&D loads of mixed recyclables. See Chapter 5, Other Seattle Waste Programs, section 5.1 for more detail on C&D.

These transfer facility recommendations are also briefly referenced in Chapter 4, Seattle's MSW System, section 4.4.4.

Charitable Donations

The recession continuing into 2011 has spotlighted the need for low-cost household goods and clothing. Increasing diversion of usable items will reduce waste as well as help fill that need.

Recommendations

- Collaborate with charities and others to continue to find ways to divert usable items and materials before they are dumped at SPU transfer stations
- Continue to support City of Seattle policies requiring donations of usable electronic equipment to schools
- Promote private donation of electronic products to organizations that refurbish them for reuse

Industrial Materials Reuse

Some byproduct exchanges are easy to put in place. Others require some level of processing to create salable commodities. SPU can find ways to stimulate such exchanges and encourage market development for various commodities.

Recommendation

- Continue involvement and support for industrial commodity exchange programs, focusing on market development for recycled commodities as needed

Electronic Products Reuse, Expansion of Covered Products

SPU actions range from support of the E-Cycle Washington program, to efforts through the Northwest Product Stewardship Council (NWPSC) to expand the law's coverage to other electronic products, and to ensuring the highest standards for electronics disposal.

Recommendations

- Continue to promote donation of these and other electronic products to companies that can make sure they are operable. Such companies then resell them to the public or donate them to schools and others through appropriate non-profit organizations.
- Work with the NWPSC and the City of Seattle's Office of Intergovernmental Relations to expand the Electronic Product Recycling Law to cover more types of products such as printers, other computer peripherals, compact disc players, and the like.
- Continue to ensure that electronics disposal meets or exceeds the standards of the Basel Action Network (BAN) Electronics Recycler's Pledge of True Stewardship, Washington Department of Ecology's Environmentally Sound Management and performance Standards for Direct Processors, and the upgraded BAN e-Stewards standards as may be adopted by the Seattle City Council in the near future.

- Upgrade the electronics disposal standards in Seattle's surplus electronics contract to the new BAN e-Stewards standards when the city renews the contract in 2014.

3.4.2 SUSTAINABLE BUILDING

Seattle's Sustainable Building Policy is an integral part of the city's move toward sustainability. As time goes on, LEED and similar national standards are likely to become increasingly specific, encouraging more waste prevention and recycling. DPD is a vital partner in furthering sustainable building practices.

Recommendation

- Continue to work with the DPD to maximize reuse of materials and recycling of wastes, including new regulations mandating recycling of most C&D-generated materials

See Chapter 5, Other Seattle Solid Waste Programs, for detail on C&D wastes.

Building Deconstruction and Salvage

Recommendations for building deconstruction and salvage build on and augment past activities.

Recommendations

- Continue to support changes in City of Seattle building codes that provide incentives for salvage and deconstruction. Continue to support U.S. Green Building Council (LEED) and other standards that emphasize the reuse of materials
- Promote grading standards development for salvaged structural (dimension) lumber in order to expand the market for it (the highest value material salvageable from building deconstruction per SPU's 2010 Hybrid Deconstruction Center study). The lack of a grading system accepted by state and local building codes is the critical barrier to increasing reuse of structural lumber. A market for salvaged dimension lumber will increase revenue from deconstruction and stimulate owner and contractor participation and, thereby, total tons salvaged. Further, because the market for architectural elements can be influenced by trends in architectural style and likely is limited, marketing salvaged dimension lumber is the growth area for building salvage.
- Promote house moving. House moving is the ultimate reuse since the home remains almost entirely as is. During the period of this plan, SPU will continue to aggressively promote house moving and work with other city agencies to remove permit barriers to this activity.

3.4.3 ORGANICS

Several onsite organics programs have reached maturity. Diversion resulting from these programs is flat or declining. In the next 5-year period, SPU expects the trend to continue.

Residential Backyard Food and Yard Waste Composting

Even though residential organics service and use has increased, onsite organics management is still the preferred way to manage these materials.

Recommendations

- Continue to promote backyard composting of food scraps and landscape waste
- Continue to promote grasscycling. Grasscycling retains valuable nutrients on lawns and helps build soil. Healthy lawns and soils enhance stormwater retention and reduce irrigation. Grasscycling also reduces hauling of heavy green organics, and reduces seasonal overloading of compost facilities with wet, high-nitrogen clippings. Overloading with grass clippings can promote anaerobic breakdown and result in odor problems at composting facilities.

Edible Food Recovery

When grocery stores and restaurants donate food to feeding programs, they reduce waste. Even less food is wasted when food banks and feeding organizations operate more efficiently (thanks to expanded refrigeration). And when these agencies also shift from garbage disposal to compost collection, they increase organics diversion from landfill.

Recommendations

- Continue promoting retail and restaurant donations to food banks and feeding programs
- Continue working with food banks to minimize their disposal costs through shifts from garbage to compost pickups

Restaurant and Institutional Kitchen Efficiency

Greater efficiency in food purchasing and preparation can lead to less food waste for Seattle and less cost to businesses. See the Lean Path program description in section 3.3.2.

Recommendations

- Continue promoting food purchasing and preparation efficiency as a complement to programs designed to increase commercial food waste composting
- Offer consulting services to help restaurants and institutional kitchens buy and serve food with less waste as funding permits

Single-Use Food Service Ware Regulation

The overall goal of this program is to reduce, if not entirely remove, restaurant-generated organic materials from landfill disposal, thus reducing waste and green house gas generation.

Recommendations

- Continue to press the quick-serve restaurant industry, food courts, and institutional food service businesses (such as hospitals and schools) to use primarily compostable single-use food service products

- Work to ensure that proper containers are used in public areas of quick-serve restaurants and other food service businesses where single-use service ware is discarded
- Work with food service businesses to ensure that they have collection contracts so materials are picked up and sent for proper processing
- Provide extensive public education to support these programs
- Fund sufficient outreach staff or consultant services to promote continued and growing compliance with the single-use food packaging regulations

3.4.4 PRODUCT STEWARDSHIP

Product stewardship recommendations target areas where the city can act on its own, regionally or through state legislation to obtain producer responsibility for source reduction (redesign), reuse, and recycling—including design for recycling—of various products. The alternatives facing SPU in product stewardship involve two decisions. First is which product to focus on. Second is whether the effort should be statewide, regional, or endeavors Seattle undertakes as a leader in the field.

SPU should encourage and act to guide consumer choices and redesign of products that minimize waste and associated environmental impacts, moving toward a City of Seattle solid waste system that:

1. Shifts as much solid waste system cost as practicable from city rates to product cost-internalized systems or recovery fees paid by product producers
2. Charges consumers upfront (internalized in the cost of products) for disposal of certain products that either contribute significant tons to the city's solid waste system or cause environmental problems during disposal
3. Encourages continuation and expansion of producer take-back services for problem products (such as electronics) that are handled primarily outside of the city system
4. Continues to provide services and set rates to encourage customers to minimize garbage and reduce use of products that end up as solid waste

Recommendations

- Develop a strategic framework for product stewardship actions. Define what Seattle can accomplish acting either alone or in partnership with other local jurisdictions. Define which products and materials can only be successfully regulated through state legislation.
- Continue work with Northwest Product Stewardship Council (NWPSC), Local Hazardous Waste Management Program, and others to increase the range and effectiveness of product stewardship at the state level
- Continue support for proposed state legislation regarding return of unwanted, leftover pharmaceuticals, medical sharps and carpet

- Monitor and support the development of plans for producer-paid end-of-life management for mercury-containing lighting products resulting from 2010 state legislation
- Work with partners to determine the best strategies and timing for new state legislation covering products such as latex and oil-based paint
- Support the NWPSC dialog regarding product stewardship for packaging and printed paper
- Support expanding the Electronic Product Recycling Law to include a greater variety of electronic products
- Continue support for the Product Stewardship Institute and the national product dialogs the institute supports
- Pursue local legislation (which may include retail take-back) where regional or state action is not forthcoming. Examples of products that may be regulated or have been regulated locally include single-use food service ware, shopping bags, and yellow pages phone books
- Stay abreast of national developments as product stewardship moves from management of products notable for their toxic content (electronics, mercury-containing lighting, pharmaceuticals) toward producer responsibility for many of the products and types of materials such as packaging found in Seattle's curbside collection program
- Continue attention to material reuse and recovery rates under product stewardship programs and evaluate support for future programs based at least in part on their recovery rates compared to existing programs such as curbside
- Emphasize the economic development (job creation) potential of product stewardship programs

3.4.5 OTHER WASTE PREVENTION ACTIVITIES

Many waste prevention strategies can be applied directly to existing day-to-day activities of businesses, public agencies and individuals. Expansion of these programs will require steady work and public education over the long run.

Green Purchasing

City of Seattle purchasing guidelines call for the use of green products and practices. In the future, purchasing professionals should provide a Green Knowledge Bank for other purchasing agents, leading to inter-agency collaboration on green purchasing solicitations.

Recommendations

- Push City of Seattle departments toward additional green purchasing decisions in facilities construction
- Work for guidelines requiring more recycling and recycled-content provisions in "standard" specifications for all work in the public rights-of-way

- Seek packaging-waste reduction and more aggressive controls on chemicals acquisition to reduce toxics exposures for staff and visitors to city facilities
- Contribute to standards setting for "ecolabels" and suppliers—from green office supplies to green fleets
- Incorporate end-of-life management and product stewardship into purchasing
- See that Seattle continues its role as a resource for both businesses that are utility customers and other government agencies

Paper Cuts

Office paper use reduction is well established in City of Seattle government. Opportunities exist to make this a model program that private businesses of all sizes can use.

Recommendation

- Continue to include Paper Cuts as a part of outreach to businesses whenever possible

Waste Prevention and Recycling Matching Grants

This program has proved to be very attractive to schools, both public and private. The program's success is described in this chapter.

Recommendation

- For the first part of the plan period, focus grant monies on schools, working with school district administration and private school management, to establish system-wide approaches to school food and yard waste collection.

By mid-2013, SPU expects nearly all public and private schools in Seattle will have recycling and compost diversion programs and collection services. At that point, the grant program can expand to other types of generators and community programs.

Junk Mail, Catalogs and Phone Books

A variety of regulatory and program options are available to reduce the tonnage of junk mail, catalogs and unwanted phone books.

Recommendations

- Continue the online junk mail opt-out service established in early 2011. The service will sustain a single, visible link from City of Seattle web pages that residents and businesses can use at no cost to opt-out of junk and catalog mail, possibly including yellow pages phone books. Monitor service provider estimates of tonnage of paper saved based on the number of opt-outs made and report to the City Council.
- Given a favorable decision in the yellow pages publishers' lawsuit seeking to block the Phone Books Opt-Out Registry, strongly promote this service as a way to quickly reduce paper use.
- SPU will work with the phone companies and phone book publishers to change Washington Utilities Commission regulations that require delivery of white pages

phone books. Much less paper would be used if the books were only printed for those who affirm that they need them.

3.5 MEASUREMENT

Measuring waste prevention is often difficult or impossible because data on what does not happen are frequently not available. This is particularly true when residents and businesses, responding to SPU messages, stop or reduce purchases. "Waste Free Holidays" where SPU and King County have combined to suggest that gifts be activities instead of "stuff" is a typical example. How much is not purchased and the amount of wrapping and packaging not generated cannot be determined. Wherever possible, however, SPU seeks to quantify results. The areas where data can be obtained are detailed below.

3.5.1 REUSE

SPU's disparate reuse programs require measurement methods tailored to the needs of the programs and their various materials.

Transfer Station Diversion

As a condition of their contracts or memoranda of agreement (MOAs), SPU collects data from the companies diverting building materials and useable household goods from the vehicles entering the north and south transfer stations.

Industrial Materials Reuse

SPU has not been able to measure industrial materials reuse in the past. Participating with By-Product Synergy Northwest and other agencies, SPU will work to collect data about industrial materials reuse, including such sources as the IMEX online materials exchange program.

Electronic Products Recycling and Reuse

E-Cycle Washington provides statewide data on electronics recycling broken down by county. SPU receives these reports and can estimate the volume of Seattle-origin diversion. The city will continue to promote both reuse of still-workable products and proper disposal at end-of-life.

3.5.2 SUSTAINABLE BUILDING

Waste prevention sustainable building activities center around building deconstruction and salvage, to increase C&D reuse and recycling. SPU plans to track data from:

- DPD deconstruction permits
- Salvage tonnage reported as recycling by company members of the Northwest Building Salvage Network and similar businesses
- Number of houses moved in the city annually

3.5.3 ORGANICS

SPU measures organics management at Seattle's homes indirectly through surveys. Data collection can be built into commercial kitchen programs.

Residential Backyard Composting and Grasscycling

Estimates can be generated for backyard food and yard waste composting and grasscycling from data on the number of participating households. These data are obtained by survey every 5 years.

Restaurant and Institutional Kitchen Efficiency

Waste reduction data from this source are dependent on SPU contracting with an organization such as Lean Path. Lean Path assists food service businesses in cost-reduction through purchasing and food-portion management. If funds are available, SPU plans to provide this kind of technical assistance again.

Single-Use Food Packaging Regulation

For compostable or recyclable single-use food service packaging, SPU will develop methods to estimate progress. It is very difficult to obtain data from all the city's food service businesses as to how many are using what types of food packaging.

It is very difficult to separate the effect of organics outreach to the commercial sector related to food packaging regulation. The amount of material diverted is not separately measured. In these cases, it appears in aggregate reports from collectors and the city's compost processor.

3.5.4 PRODUCT STEWARDSHIP

Once established, product stewardship programs provide excellent data on the amount of recycling that occurs, a measure of diversion, not prevention. SPU will collect data on recycling of products that fall under product stewardship regulatory legislation. It is not possible to predict which products will be recycled thanks to future product stewardship legislation, but here are some examples:

- Electronic products
- Pharmaceuticals (currently a pilot program)
- Mercury-containing lighting
- Carpet
- Paint
- Medical sharps
- Rechargeable batteries
- Packaging

3.5.5 OTHER WASTE PREVENTION ACTIVITIES

SPU contracts out commercial paper reduction, and junk mail, and yellow pages opt-out programs and requires regular data reporting. And as the city continues strong internal support for its green purchasing program, staff regularly compiles performance data.

Green Purchasing

Working with the City of Seattle's Department of Finance and Administrative Services, SPU tracks the changes in purchasing from toxic or damaging products to less toxic or benign alternatives.

Paper Cuts

Data from the city's internal paper reduction program are checked annually. Data can also be obtained from the consultant that provides Resource Venture services. Resource Venture provides outreach to businesses on conservation, recycling, and waste prevention.

Waste Prevention and Recycling Matching Grants - School Food Waste

Through SPU's grants to schools, we will track the number of participating schools. The schools will provide SPU with information on numbers of compost collection container numbers, container sizes, and when or if they downsize garbage service.

Junk Mail, Catalogs and Phone Books

Paper-use reduction from resident and business opt-outs from junk mail and catalog mailing lists, and from phone book delivery, can be measured from two sources.

- SPU will get the tonnage of paper saved from the contract vendor providing the junk mail opt-out services. The services are directly accessed from the City of Seattle's web pages. The vendor can track Seattle-origin opt-outs, and using postal service algorithms then report tonnage.
- Pending the outcome of a lawsuit in 2011, a similar service for yellow pages phone book opt-outs will be able to provide the tonnage of yellow pages phone books not delivered.

3.5.6 OVERALL GENERATION

One way to gauge waste prevention effectiveness is to look at the city's total generation rates, for both garbage and recycling. SPU tracks total generation annually, as can be seen in Figure 2-1 in Chapter 2. It is difficult to sort out all the different causes embedded in the trends, which have generally followed economic cycles. Nonetheless, we can use these data with the other measurement techniques discussed above to monitor overall waste reduction progress.