

Solid Waste Division Annual Report



King County

Department of
Natural Resources and Parks



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Last year was a year of big changes for the Solid Waste Division. Every aspect of our business changed in some way. The changes were guided by the 2004 Business Plan that detailed cost saving measures used to meet our \$9.43 million savings target for 2004. Another factor in the change was the adoption in late 2003 of the Solid Waste Omnibus Ordinance by the Metropolitan King County Council. The ordinance included several provisions that changed our situation considerably. For example, the ordinance gave the division the authority to change hours of operation at our facilities, something that previously had required Council action. With minor exceptions, operating hours had been constant for at least the last 20 years and hours were consistent at all sites, except the Factoria Transfer Station, even though demand varies significantly between facilities.

The other major change from the Omnibus Ordinance was an increase in the regional direct rate from \$59.50/ton to \$69.50/ton. The regional direct rate is the discounted rate paid by commercial haulers who use their own transfer stations and haul waste directly to the Cedar Hills Landfill. The rate change makes the Solid Waste Division financially indifferent to whether the haulers process waste through their transfer stations or ours.

After the rate increase went into effect, there was a large shift in tonnage from the private transfer stations to King County's as haulers found it more economical to use our transfer facilities, which are located closer to where they collect the waste. Our transfer station tonnage increased 30% over 2003 levels after the new rate went into effect in mid-May. Using the new authority to change operating hours, we expanded hours at the Bow Lake Transfer Station to 22 hours per day on weekdays to accommodate the commercial haulers. Since we could not immediately hire additional staff or buy additional equipment, Solid Waste Division employees worked many extra overtime hours during the summer and fall to meet our customer's needs. It is a tribute to Solid Waste Division employees that the results of our customer satisfaction survey showed no drop in the ratings of our services - it remained at 4.5 out of 5 on the satisfaction scale.

Through a lot of hard work by Solid Waste Division employees, we were able to achieve the operational savings target that was identified in the 2004 Business Plan. The savings came from a variety of initiatives including rock recycling, refuse trailer rebuilds, staff reductions, and elimination of lower priority programs.

Another important change in 2004 related to the way we work with the cities that are part of our system. A new advisory group was convened, the Metropolitan Solid Waste Management Advisory Committee, which is described in this report. We are very pleased to be working collaboratively with the cities to figure out how to meet the challenges facing the solid waste system in King County over the next decade. Decisions have to be made about what the transfer system will look like and how waste export will be accomplished when Cedar Hills reaches its permitted capacity and closes.

Also in 2004, new 10-year contracts were negotiated and signed with Waste Management and Rabanco for handling the Construction, Demolition and Landclearing (CDL) waste generated in King County. The contracts recognize that King County has responsibility for the transfer and disposal of mixed municipal solid waste while the private companies will manage CDL. The contracts will increase the percentage of CDL that is recycled by providing financial incentives to the two companies for diverting material from disposal. Between them, the companies operate six CDL receiving facilities around the county and they are responsible for proper disposal of all materials that cannot be recycled.

All in all, 2004 was a very eventful year for the Solid Waste Division and our employees. I cannot say enough about how well everyone pulled together to provide services to the residents and businesses of King County. Our programs have been refocused, our operations have been fine tuned, and we are in a stronger position for the future.

Theresa Jennings
Division Director

Zero Waste of Resources

The Solid Waste Division has as its ultimate goal Zero Waste of Resources (ZWR). In the 1990s, the implementation of curbside recycling programs and the ban on yard waste in the garbage collected at the curb led to significant increases in the diversion of recyclable materials from the landfill. Since 1995, however, King County recycling rates have plateaued and in some cases declined. For the Division to continue to make progress in reducing waste and recycling, a new approach is needed that builds on past successes.

To address this need for a strategic shift in thinking, King County has adopted a new Zero Waste of Resources policy. This policy establishes a framework to move toward a more sustainable future where material with value is not disposed. ZWR does not mean zero garbage but instead redefines the term *waste* – not as something to throw away, but something that does not have any value. **Materials that have value are not waste.** This strategy focuses on key target materials in the waste stream that are recyclable and have resource value.

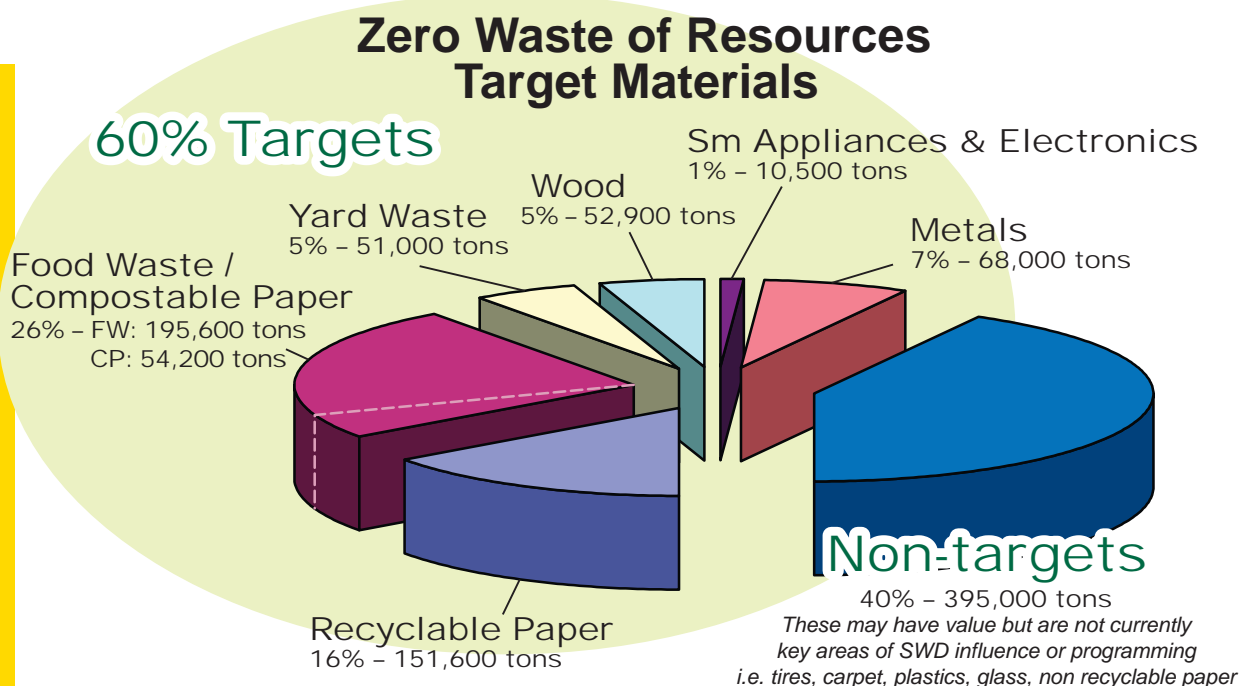
Targeted Materials

Nearly 60% of materials currently disposed are recyclable and have value. These are the Target Materials as shown below. The division reviewed the progress of recycling programs, determined what recyclable materials remain in the waste stream and prioritized those with a high potential that the division can influence.

The division has implemented a number of programs to target these materials for recycling. Examples include banning yard waste from curbside garbage collection, linking waste generators with manufacturers, promoting compost and natural yard care behaviors and encouraging the purchase of products with recycled content. King County has a tool box of strategies to continue the drive to Zero Waste of Resources, including:

- New material infrastructure development
- Product stewardship – upstream responsibility
- Regulation and division policy
- Enhanced opportunities for existing materials
- Continued effective education

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Source: 2002–2003 Waste Characterization Study overall disposed waste by weight.
2003 total tons disposed - 978,800

Recyclable materials such as glass and plastic have long established programs in place and therefore are not currently targets. There is little more that can be done to increase diversion of these materials through voluntary recycling. Plastics recycling is driven by international market pressures. Currently recyclable plastics that are disposed represent less than 2% of the waste stream. This does not imply that recycling these materials is not important but rather that program efforts should be focused elsewhere.

The Division will continue on its path toward Zero Waste of Resources. Materials with value will be zeroed out of the waste stream over time through a combination of the strategies. In 2004, electronics, food waste and mercury were targeted and significant strides were achieved. In 2005, greater effort in paper and wood will be targeted.

Electronics

Last year, the Solid Waste Division administered a grant from the federal Environmental Protection Agency (EPA), testing the feasibility of collecting used electronics for recycling at national electronics retail stores. The groundbreaking program ran from July 8 through August 7, 2004 and was the nation's first month-long recycling program to be offered by a large television set retailer.

Partners included Snohomish County, City of Seattle, City of Tacoma and Good Guys Inc., the national television retailer that collected TVs from customers at its Bellevue, Tukwila, Lynnwood and Puyallup stores. Five electronics manufacturers – JVC, Philips, Pioneer, Samsung, Sharp and Sony – contributed \$30,000 to offset the cost of recycling. Residents were charged a fee to cover additional transportation and recycling costs. The program netted 4,042 televisions resulting in the recycling of 16,000 pounds of lead from CRT glass, plastics and other host metals.

Another pilot project was conducted at Office Depot stores. This was the country's first free, nationwide, in-store electronics recycling program for computers, peripherals and small TVs. The program ran from July 18 through September 6, 2004 and brought in 5,300 tons of electronics for recycling in King County.

Staples stores conducted two-week collection events for customers in Spring and Fall 2004. A suggested \$10 contribution per item dropped off was donated to local school districts.

Staples rewarded recyclers with coupons good for discounts on their purchases. A representative from the division was invited to speak about the benefits of recycling electronics at the spring kick off event at the Redmond Staples store.

The King County Take it Back Network is an ongoing electronics recycling program coordinated by the division. The network is a group of local electronics repair and resale shops, recyclers and nonprofit groups that take back electronic equipment from consumers for recycling or reuse. The network is publicized on the division web site and in the commercial media. In 2003 and 2004, the network recycled more than 60,000 computer monitors, 37,000 computers and 7,200 TVs.

Foodwaste

Residential and Commercial Food Waste Collection Pilots:

Food waste is one of the materials targeted for diversion from disposal because of its potential value as a soil supplement and because it comprises over 20% of the waste stream. The division worked with cities, private haulers and other agencies to conduct residential



food waste collection pilot studies. As a result, several eastside cities – Bellevue, Kirkland and Redmond – now include this service in their

Food+ Recycling

new garbage collection contracts.

Three new pilots were started in 2004. One tested a new rate structure that embeds food and yard waste collection in the

rate for residential garbage service. The other two tested food waste collection from small to medium-sized businesses. These pilots will continue in 2005.

On-Site Food Waste Composting – This program assesses the long-term feasibility of on-site food waste composting systems through partnerships with schools and businesses. In total, 14 businesses and schools are now taking part in this 3-year pilot program. Initial results indicate that on-site composting is a viable solution for very low volume food waste generators when collection programs are not available.

Mercury and Hazardous Waste

The Small Quantity Generators (businesses) Program has focused on mercury switches. The project has two components. First, proposed state legislation would require manufacturers of vehicles to remove and manage mercury switches before the cars are sent to shredders. This work is significant because the private sector is active in the development and promotion of the legislation as it moves to Olympia for the 2005 session. Second, 11 public vehicle fleets and one private fleet in King County are removing mercury switches from end-of-life vehicles. About 500 switches will be removed in 2005. The project has received positive TV and print media publicity.

Household Hazardous Waste – The Factoria Household Hazardous Waste Shed pilot project

was a huge success; so good, in fact, that it has been made a permanent service. A random customer survey showed over 85% rated the facility services as good or excellent. In 2004, it served more than 13,000 customers and collected 500 tons of waste. Meanwhile, participation at the Wastemobile increased 10% in 2004. The mobile hazardous waste collection unit served nearly 17,000 customers at 28 events throughout the county. Most household hazardous wastes are either recycled or reused as fuels with less than 5% disposed in hazardous waste landfills. Approximately 42% are recycled, 46% are reused as fuels, 5% are incinerated (mainly pesticides), 3% are treated (mainly corrosive liquids) and 4% are disposed in a hazardous waste landfill.

Environmental Stewardship

Community Litter Cleanup Program – The division's Litter Cleanup Program cleans litter and illegal dumpsites on public lands and waterways in King County and funds illegal dump and litter education programs. In 2004, more than \$67,000 in grant money from the State Department of Ecology was spent with an additional investment of \$34,000 from the division. In 2004, crews cleaned up approximately 78 tons of debris from 75 sites. Litter prevention messages reached 31,780 students.

Illegal Dumping Taskforce – In 2003, the King County Executive convened the Illegal Dumping Taskforce. The division coordinated task force work. Agencies participating in addition to the division were the Department of Development and Environmental Service; Water & Land Resources Division of the Department of Natural Resources and Parks; Roads Services Division of the Department of Transportation; Office of the Prosecuting Attorney; Department of Public Health and the Sheriff's Office. Key issues discussed by the task force were:

- Streamlining ways residents can contact the right agency
- Avoiding duplication of services and improv-

ing interagency coordination

- Improving personal safety for investigators
- Clarifying each agency's jurisdiction and authority
- Barriers to effective enforcement
- Expanding public education and prevention efforts

The task force developed recommendations to improve coordination, improve services and reduce illegal dumping which are being implemented in 2005.

Brownfields – The Brownfields Program is funded by the Environmental Protection Agency (EPA) and provides technical and financial assistance for environmental assessment and cleanup to businesses, nonprofits and municipalities. The Brownfields Program has a new website with more success stories at <http://www.metrokc.gov/dnrc/swd/brownfields/index.asp>. King County partners with the City of Seattle and the nonprofit Environmental Coalition of South Seattle (ECOSS) to implement the program and over the last year provided assistance to a number of projects, including:

- **Former Kwik Cleaners Site:** A local baker purchased this former drycleaners on Beacon Hill to expand her business. ECOSS provided advice and referred her to an environmental attorney who was able to secure funds for the assessment and cleanup from the former owner's insurance company. The Delite Bakery opened on the site with fanfare in July 2004.
- **Colman Building Site:** Two nonprofit organizations, Capitol Hill Housing Improvement Program and the Central Area Redevelopment Association sought to purchase property and turn it into a mixed-use low income housing and commercial development. At the request of the Brownfields Program and at no cost to the nonprofits, EPA conducted environmental sampling at the site. Assessment results should be available later in 2005.
- **Harborview Medical Center Site:** King County owns the Harborview Medical Center (HMC) which is operated by the University of Washington. HMC is building a new clinic on a

Curbside Recycling Tonnages Increase

In 2002, Washington State enacted legislation intended to provide incentives for haulers regulated by the Washington Utilities and Transportation Commission (WUTC) to increase residential recycling levels. This legislation allows a franchised hauler to retain some of the revenue it receives for recyclable materials if it prepares and executes a plan for increasing recycling in its franchise area. These plans must be approved by the county. As a result of plans submitted and implemented by King County haulers, there has been a marked increase to curbside recycling tonnages in much of the unincorporated areas of the county (the areas covered by the haulers plans).

- One well-established suburban franchise area saw its curbside recycling levels increase by 3 - 5% in 2004;
- Franchise areas that started new services in 2004, such as single-stream recycling, saw increases of around 8%.

site that was contaminated by a former dry cleaner. In 2004, King County was awarded a \$200,000 grant from EPA to help pay for the cleanup which will begin in 2005.

Sustainable Building - Residential Building

– The division continued to partner with the Master Builder's Association, the Fannie Mae Foundation and Snohomish County to sponsor the BUILT GREEN™ Program, which works to increase the market for green building, including the use of recycled materials, by educating builders and homebuyers. Since the program's inception, the number of BUILT GREEN units constructed in King County has increased from 36 to more than 4,000, which represents more than 12% of the new construction market. Characteristics of BUILT GREEN homes include:

- Energy saving features.
- Durable building materials.
- Healthier building options.
- Building practices that protect water quality and contribute to native salmon runs.
- Designs that reduce waste and minimize environmental impact.

Waste Reduction and Recycling

Last year the division partnered with DDES to promote residential green building. Training sessions were developed for permitting staff on green building techniques. A permanent display was placed in the permitting lobby and a monitoring plan was developed for BUILT GREEN projects.

Commercial/Institutional Building – As the facilitator of the county's overall green building effort, the division developed an ordinance adopted by the King County Council directing the use of green building in design and construction of our capital building projects.

The division continues to provide technical assistance to several private sector development projects using the Leadership in Energy and Environmental Design or LEED™ green building rating system. Several projects that are part of the King County Housing Authority portfolio received assistance as did the City of Sammamish City Hall and the Woodinville Farmers Market.

For buildings the county owns and operates, technical assistance was provided to the Marymoor Maintenance Facility and the Kent Pullen Regional Communications and Emergency Operations Center. Assistance was also provided to the development team working on the new county office building that will be located adjacent to the current King County Administration Building.

The division sponsored a LEED Training series that was attended by over 100 county staff working on capital projects. The trainings covered energy conservation, sustainable site development, use of environmentally preferable building products, water conservation and how to manage a LEED project.

In June, the division set up a reuse contract for all King County agencies with the RE Store, a non-profit used building materials store in Seattle. Materials and fixtures from County construction and renovation projects that were previously disposed of can now go to the RE Store at no charge to the County. In the

first six months of the contract, 9,400 pounds of materials were diverted from disposal.

King County Waste Wise– This internal waste prevention and recycling program for King County agencies, led by the division, was named to the national U.S. EPA WasteWise Hall of Fame based upon six years of continued excellence. King County joins four other Hall of Fame members, including Kodak and General Motors, and is the first and only government agency in the Hall of Fame.



Preserving Resources,
Preventing Waste

Our web site – www.metrokc.gov/dnrp/swd/

The Solid Waste Division launched a completely re-designed web site in September 2004. Highlights include:

- Garbage & Recycling Services. Visitors select their city or neighborhood from a drop-down list. Information is provided on waste haulers, the nearest transfer station, recycling events, contact information and more.
- What do I do with...? Visitors select a material from a drop-down list that provides all recycling options and allows visitors to perform an advanced search for multiple materials. Turn into a graphic

The King County Comprehensive Solid Waste Management Plan requires that the lists of recyclables be updated every year. Commercial haulers are required to provide curb-side pickup of primary recyclables including glass, tin and aluminum cans, mixed waste paper, newspaper, #1 and #2 plastic bottles and yard waste. There is a growing list of other materials that can be recycled called secondary recyclables. Added to the list this year are:

- Electronics such as computers, televisions, monitors, laptops, cell phones, PDAs, printers, copiers, fax machines and audio visuals
- Compact and floppy disks
- Fluorescent light bulbs

Waste Reduction and Recycling

Program Name	Intent of Program	Results
Collection Programs		
Household Hazardous Wastemobile	The Wastemobile is a service of the Local Hazardous Waste Management Program administered by the Solid Waste Division. The program enables residents to properly dispose of items such as pesticides, paints, cleaning products, and fluorescent light bulbs.	<p>Collection: The Wastemobile stopped at 25 events in 2004 and collected 661 tons of moderate risk waste from 16,998 customers.</p> <p>Education: Education staff discussed waste reduction and safer alternatives with 15,151 (89%) of the visitors to the Wastemobile.</p>
Special Recycling Events	The Division and cities hold events to collect and recycle unwanted items including tires, wood, scrap metal, computers, televisions and refrigerators. As locations to hold events in unincorporated areas have decreased, cities have been serving unincorporated area residents at their events.	<p>With all but two of the cities reporting, 50 residential collection events reported 21,000 vehicles participating with 2,200 tons of material collected. The 10 business collection events reported 700 vehicles and 77 tons of material collected.</p> <p>In 5 unincorporated area events, 493 tons were collected from 2,583 participants (vehicles).</p>
Sustainable Building Programs		
On-Line Materials Exchange	The program provides an Internet-based exchange of household items and reusable building materials.	One of King County's most frequently visited Web sites; the On-Line Materials Exchange receives approximately 6,500 visitors a month.
Education and Outreach Programs		
Master Recycler/Composter (MRC)	The program trains volunteers on waste reduction, recycling and composting, in exchange for 40 hours of volunteer time in the community.	There was no training in 2004, as training was held in fall and spring of 2003 and January 2005. MRCs donated more than 475 hours to the community.
Northwest Natural Yard Days	Northwest Natural Yard Days promotes the benefits of natural yard care to King County residents by educating about practices such as mulch mowing, conserving water, using compost and organic slow-release fertilizer, and hand weeding. The Division and 33 agencies partnered to provide discounts on natural yard care tools at retail stores throughout the month of April.	Residents purchased 94,318 bags of compost, 3,227 mowers, 5,657 soaker hoses, 2,678 weed pullers, 6,255 bags of organic fertilizer, 2,545 containers of insecticidal soap, and 1,354 water timers.
School Programs	Resource conservation messages are taught through an assembly program and classroom workshops and receive assistance in forming Green Teams.	The Elementary School Program presented assemblies to 80 schools to reach 23,600 students; presented 142 classroom workshops to reach 3,598 students; and, supported 58 Green Teams, reaching 1,700 students.
	Middle and high school students receive classroom work based on the Department of Natural Resources and Parks' video Natural Connections.	112 Natural Connections workshops were presented to 3,221 students.

Waste Reduction and Recycling

Program Name	Intent of Program	Results
School Programs (continued)	Middle and high school students also receive classroom workshops through the Division's Waste Busters program.	291 Waste Busters workshops were delivered to 7,341 students.
Household Hazardous Waste (HHW) School Program	Teachers learn about household hazardous waste in teacher training workshops, and can request follow-up support through classroom presentations. Parents of young children also receive presentations about HHW.	<ul style="list-style-type: none"> • 50 teachers were trained in HHW, reaching 5,826 students. • 37 follow-up presentations were made to 48 classrooms, reaching 1,386 students. • 43 presentations were made to parent groups, reaching over 200 parents.
Green Schools Program	This program helps schools start or expand conservation practices in: waste reduction and recycling (WRR), hazardous waste management and reduction, litter reduction, environmental purchasing, water and energy conservation, reducing greenhouse gas emissions and environmental education. Participants set measurable goals in 2-4 of the eight categories. WRR is required. Schools receive technical assistance and funding over a 1-2 year period.	Four schools and three school districts Federal Way, Northshore and Vashon participated. Examples: Tolt Middle School saved \$3,000 in garbage disposal fees through increased recycling and waste reduction; St. Francis of Assisi is receiving an \$11,000 reimbursement after King County helped identify errors in water bills; and, Three Cedars Waldorf Schools saved \$1,300 within 8 months after replacing incandescent bulbs with compact fluorescents.
School Recycling & Waste Reduction Assistance Program	Schools are assisted with site visits; written recommendations for improvement; recycling containers, signs and other equipment and supplies; hands-on help to start recycling programs; adding new materials to existing programs; and promoting the recycling program.	53 schools were helped. Of the 53: <ul style="list-style-type: none"> • 20 started to recycle plastic bottles and aluminum cans, • 17 set up printer cartridge recycling programs, • 10 initiated fluorescent bulb recycling.
Waste Free Holidays	The holiday program encourages people to give gifts of experience rather than "stuff" that creates unnecessary waste. Businesses participate by offering discounts on items such as tickets, lessons, meals and outdoor adventures.	At schools where assistance is complete, recycling rates rose from 3% to 36% with most increases ranging from 9% to 25%. The program's Web site received more than 11,975 visitors. More than 80 businesses participated.
LinkUp Program	The LinkUp program provides technical and marketing assistance to businesses that manufacture products using recycled materials. The goal of LinkUp is to develop local markets for recycled materials.	In 2004, LinkUp worked with 10 partner businesses to conduct 13 technical and marketing assistance projects. The projects included product and material testing, strategic planning, target marketing, media campaigns, market research, business planning and developing case studies and product branding. Approximately 85% of LinkUp partners processed or used more recycled materials this past year than in the previous one.

After focusing for the last few years on safety improvements at its transfer facilities, the division in 2004 shifted its emphasis to major capital projects. In 2004, a number of capital improvement projects were completed, including:

First Northeast Transfer Station – This project will replace a facility designed and built in the 1960s. The design and permitting portions of the project were completed in 2004. Construction will begin in mid-2005. The state-of-the-art facility will significantly increase recycling opportunities including yard wastes. All solid waste handling will occur in an enclosed building which will reduce noise and not expose employees and patrons to inclement weather. The facility also will be waste-export-ready. The station will be closed for construction for about a year.

Scale House Replacement/Renovation – This multi-year project replaced scale houses at all transfer stations with the exception of Factoria. The work involved upgrading the electronics, computerizing cashiering systems and making facilities compliant with the Americans with Disabilities Act (ADA).

Cedar Hills Landfill Area 6 – Solid waste currently is disposed in Area 5, which will reach its permitted capacity in mid-2005. In 2004, Area 6, with a capacity of 6.8 million cubic yards, was made ready for solid waste disposal. The work entailed excavating the site, stockpiling the overburden and installing a composite liner constructed of high-density polyethylene (HDPE) and betonite. The project also installed gas and leachate collection systems.

Back-up Electric Generation Systems – Transfer stations are an integral part of King County's emergency response system. Back-up power

generation systems were installed at all facilities. The diesel-powered units will ensure that the transfer stations meet their obligations with little or no system downtime after a loss in power.

Telemetry Project – The division is responsible for monitoring the environmental systems of 10 closed landfill sites throughout King County including the landfill gas and leachate systems. The telemetry project allows for this monitoring to be done remotely from a central location at Cedar Hills, which enhances efficiency and faster environmental response.

Algona Transfer Station – A second outbound scale was added to this transfer station to service commercial haulers and customers using credit cards. The Algona station traditionally has been a very crowded operation. Adding the scale eases congestion for outbound traffic.



Planned for 2005

Two wooden warehouses located on the Fisher Mill Property on Harbor Island will be deconstructed. The operative word is "deconstruction" rather than "demolition" because significant portions of construction materials will be salvaged for later use. The value of the recovered materials is so great that their resale will significantly reduce the cost of deconstruction.

Solid Waste Export System Plan



It is anticipated that the Cedar Hills Regional Landfill will reach its permitted capacity within 10 years. A decision was made in the 1990s that another landfill would not be developed in King County. This means that approximately 1 million tons of solid waste will be exported annually to a landfill outside King County once Cedar Hills is closed. The 2001 Comprehensive Solid Waste Management Plan directed the division to develop a Waste Export Implementation and Coordination Plan for this coming reality.

The Waste Export Plan is due to the Council December 15, 2005. Prior to submission of the plan, four interim reports on plan progress are required.

- Report 1, Transfer Station Level of Service Criteria and Standards (submitted to the Council October 15, 2004)
- Report 2, Analysis of Transfer System Needs and Capacity (due April 15, 2005)
- Report 3, Analysis of options for Public and Private Ownership and Operations
- Report 4, Preliminary Transfer and Waste Export Facility Recommendations (including estimated system costs, rate impacts and financial policy assumptions)

Metropolitan Solid Waste Management Advisory Committee (MSWMAC) – The 2001 Comprehensive Plan recommended formation of a policy group to expand the role of the cities and share responsibility for analyzing and developing regional solid waste policies.

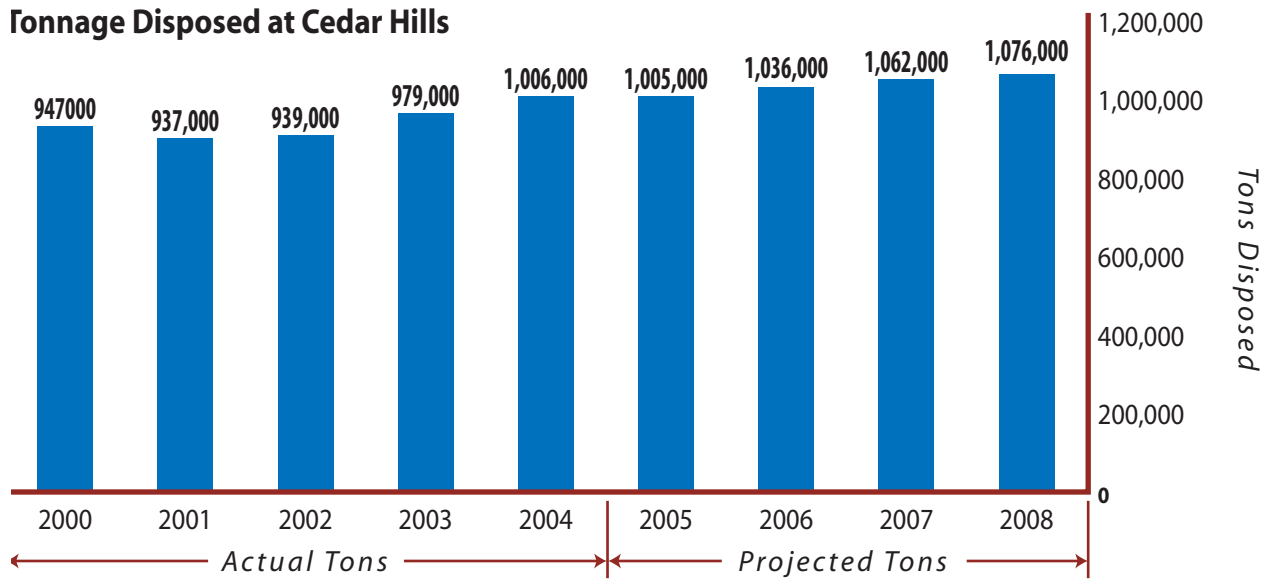
MSWMAC, created in August 2004, is charged with advising the King County Executive and Council on solid waste management issues and the waste export system plan. The committee is comprised of city elected officials and staff. It will work collaboratively with the Solid Waste Advisory Committee (SWAC) and the Regional Policy Committee (RPC) and will not supplant or duplicate work of either group. MSWMAC will review and make recommendations on the waste export system plan before it is transmitted to the Executive and Council. MSWMAC held its first meeting in January 2005.

King County Ordinance 12378 directs the Solid Waste Division to “monitor and analyze conditions impacting the appropriateness, feasibility and timing of waste export on a continuous basis, and to regularly report to the Council on such conditions.” The 2001 Comprehensive Plan contains an analysis of the costs of closing Cedar Hills and moving to waste export prior to the expected date when Cedar Hills reaches capacity. The analysis found that early closure and waste export would be very costly to taxpayers due to the costs of long-haul transfer relative to using Cedar Hills. It also demonstrated that partial export also was not cost-effective. The division, as required, performed a similar analysis in 2004, which reached the same conclusions.

Solid Waste Projections

Solid waste forecasts are required for the division's operation. The division uses an econometric model to forecast future waste tonnage. The model takes into account several variables including the disposal tip fee, per capita income, employment and population. Forecasts produced are then adjusted to take into account program changes.

Tonnage Disposed at Cedar Hills



The Solid Waste Divisions also is developing current and predictive estimates of the quantities of key materials that are recycled every year from commercial sources in King County. A model will estimate missing quantities in order to 'smooth' the Washington Department of Ecology's annual estimates and fill in gaps to mitigate the substantial deviation in year-to-year recycling reported by the department.

The model is based largely on historical records, including annual quantities of recyclables by type of material and class of respondent. The information used to develop the estimates will be based significantly on responses to the department annual survey of the recycling industry and responses to previous surveys of the local recycling industry. The division expects to have use of the model by mid-2005.

Awards

The division demonstrates leadership in green building through its capital projects that are currently registered for Leadership in Energy and Environmental Design™ (LEED) certification. LEED is a program of the U.S. Green Building Council, a nationwide group which promotes innovative recycling for a sustainable future. King Street Center was awarded a LEED Gold for Existing Buildings certification as part a pilot project with the U.S. Green Building Council.

The planned new First Northeast Transfer and Recycling Station was honored by the Thornton Creek Alliance "for working with concerned neighbors and members of the Thornton Creek Alliance to insure that improvements for the First Avenue Northeast Transfer Station include restoring the North Fork of Thornton Creek as it flows through the site, enhancing a natural riparian buffer, and providing a public viewing and educational area."

Table A-1: 2004 Estimated Population and 2003 Housing Data

Jurisdiction	Population 2004	Single Family Units 2003	Multi Family Units 2003	Mobile Homes 2003
Unincorporated	356,795	106,462	18,364	7,629
Incorporated	858,105	213,432	135,973	11,370
Total	1,214,900	319,894	154,337	18,999

Sources: Office of Financial Management (OFM)
 April 1 Population of Cities, Towns, and Counties
 Used for Allocation of Selected State Revenues
 State of Washington. Annual Growth Report King County 2004, American Community Survey 2003

Table A-2: Estimated Single-Family (1-4 units) Curbside Collection-Service Subscribers

Area	Curbside Garbage and Recycling*	Curbside Yard Waste
Unincorporated	100,692	40,397
Incorporated	185,959	121,587
Total	286,651	161,984

* All garbage customers have also been counted as recycling customers

Table A-3: Estimated Single-Family (1-4 units) Curbside Collection - Average Pounds/Month

Area	Pounds Per Household Per Month		
	Garbage	Recycling	Yard Waste
Unincorporated	131	62	146
Incorporated	130	63	121
Average	130.5	62.5	133.5

Table A-4: 2004 Estimated Curbside Residential and Non-Residential Recycling Tonnage¹

	Mixed Paper	News Print	Card-board	Glass	Tin & Steel	Alum.	Plastic	Yard Waste	Total
Residential									
Unincorporated	14,353	8,581	3,379	5,579	491	280	658	35,491	68,812
Incorporated	31,125	14,893	6,163	11,050	1,013	575	1,305	87,944	154,066
Total	45,478	23,474	9,542	16,628	1,504	854	1,963	123,435	222,877

(1) Some of the recycling data has been estimated because all data for 2004 has not been reported yet.
 Non-residential data for 2004 has not been reported yet.

Table A-5: Transfer Station and Drop Box Refuse Tonnage Disposed

Transfer & Drop Box Stations*	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
Factoria	25,135	35,129	39,043	35,917	135,223
Houghton	38,629	43,361	46,457	43,096	171,544
Renton	14,474	16,877	19,900	18,576	69,826
Algona	34,179	37,749	39,920	37,040	148,889
Bow Lake	35,754	55,495	74,359	68,194	233,802
First NE	16,259	19,246	19,399	14,327	69,231
Enumclaw	7,292	6,596	6,642	5,623	26,153
Vashon	1,897	2,125	2,651	2,234	8,907
Vashon Special Waste	0	0	1	0	2
Cedar Falls Drop Box	1,076	1,150	1,173	940	4,340
Skykomish Drop Box*	197	203	285	173	858
Total Transfer Station Refuse	174,696	217,728	249,545	225,948	867,917

* Transported into Houghton; not added to totals. The Skykomish gates to the disposal area were open January 6 thru March 20, 2003 and January 4 to 13, 2004.

Table A-6: 2004 Total Tonnage Disposed

System Origin	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
Total Transfer Station Refuse	174,696	217,728	249,545	225,948	867,917
Total Regional Direct	55,870	40,918	14,292	8,030	119,110
Total - Other	4,256	4,380	4,900	5,600	19,136
Total Refuse Disposed	234,822	263,026	268,737	239,578	1,006,163
Total Transfer Station Yard Waste	376	513	319	176	1,384

Table A-7: 2004 Transfer Station Disposal by Customer Type

Transfer Station	— Self Haul Customers —		— Collection Companies —	
	Tons Disposed	% of Total	Tons Disposed	% of Total
Factoria	31,380.49	24%	101,797.78	76%
Houghton	36,775.14	22%	134,274.17	79%
Renton	16,465.83	24%	52,458.42	76%
Algona	35,521.56	24%	112,132.62	76%
Bow Lake	40,851.93	18%	189,029.73	82%
First NE	38,375.14	55%	31,184.48	45%
Enumclaw	15,443.96	60%	10,433.49	40%
Vashon	5,969.17	70%	2,567.41	30%
Cedar Falls Drop Box	4,355.81	100%	0.00	0%
Skykomish	379.46	73%	144.00	28%
Total	225,518.49	26%	634,022.10	74%

Table A-8: 2004 Transfer Station Transactions by Customer Type

Transfer Station	— Self Haul Customers —		— Collection Companies —	
	Transactions	% of Total	Transactions	% of Total
Factoria	111,274	12%	17,676	2%
Houghton	122,518	13%	23,061	3%
Renton	71,828	8%	9,749	1%
Algona	133,681	14%	21,081	2%
Bow Lake	133,138	14%	40,720	4%
First NE	137,724	15%	5,361	1%
Enumclaw	54,621	6%	1,834	<1%
Vashon	24,270	3%	508	<1%
Cedar Falls Drop Box	21,609	2%	0	0%
Skykomish	2,125	<1%	320	<1%
Total	812,788	87%	120,310	13%

Table A-9: 2004 Transfer Station and Drop-box Recycling Tonnage

Facility	Mixed Paper	Newspaper	Cardboard	T-A-P-G ¹	Total
Factoria	149	-	87	1	237
Houghton	343	5	329	116	793
Renton	399	3	309	175	885
Algona	-	-	-	-	0
Bow Lake	622	10	565	253	1,451
First NE	149	-	87	1	237
Enumclaw	266	228	152	234	879
Vashon	14	264	77	415	770
Cedar Falls Drop Box	163	-	99	95	357
Snoqualmie	21	-	28	18	66
Skykomish	20	-	16	18	54
Total	2,146	510	1,748	1,325	5,729

(1) T-A-P-G = Tin, Aluminum, Plastic, Glass

Table A-10: Total Refuse Tonnage Disposed, 1988-2004

Year	Rural Landfills	Transfer Stations	Cedar Hills Reg. Direct	Cedar Hills Other Waste	Total Disposed
1988	38,655	667,651	556,247	39,954	1,302,507
1989	41,614	712,156	476,602	55,462	1,285,834
1990	44,290	848,439	483,950	58,105	1,432,869
1991	28,553	814,919	258,319	53,014	1,181,969
1992	23,656	770,448	119,340	21,317	933,489
1993	21,020	716,437	144,973	24,740	901,217
1994	10,288	633,408	150,400	22,422	814,384
1995	7,388	642,498	146,024	26,610	822,520
1996	7,766	594,736	190,790	23,740	817,602
1997	8,110	607,256	229,007	24,448	872,384
1998	8,228	626,874	226,617	22,005	883,724
1999	3,949	692,921	214,422	18,015	929,307
2000	0	711,565	216,169	19,440	947,174
2001	0	696,664	222,664	16,982	936,506
2002	0	683,965	238,290	17,233	939,488
2003	-	704,127	257,283	17,426	978,836
2004	-	867,917	119,110	19,136	1,006,163

Table A-11: 2004 Program Inquiries by Type

Phone inquiries	1st qtr	2nd qtr	3rd qtr	4th qtr	Total
Customer Service general ¹	1274	1133	853	1825	5085
Hours of operation ²	na	na	na	441	441
General recycling	332	371	505	474	1682
Appliance recycling	365	435	574	685	2059
CDL ³	278	514	593	476	1861
Electronics recycling ⁴	450	434	552	698	2134
Curbside recycling	90	95	96	87	368
TreeCycling	247		2	136	385
Compost/soils/bins	231	433	349	148	1161
Special collection events	105	387	274	198	964
Garbage haulers/pickup	407	387	496	335	1625
Hazardous Waste	210	328	393	458	1389
Junk Vehicles	7	7	12	10	36
Transfer stations	2267	2979	3563	3847	12656
Complaints	89	92	107	98	386
TOTAL	6352	7595	8369	9916	32232

1) includes directions, rates, acceptance of materials, hauler questions, junk mail, illegal dumping, schools, et. al

2) Data not available first three quarters

3) Construction/demolition/land clearing

4) includes TVs

Chart A-1: Solid Waste Division Actual Revenues and Expenditures. Year ending 12/31/2004

Manager/ Administration			
Waste Reduction & Recycling and Mod. Risk Waste	<ul style="list-style-type: none"> • Education • Technical and financial assistance • Collection services 	Expenditure \$8,952,289 28 FTEs	Revenue Disposal fees \$5,656,235 Haz. waste surcharge..... \$3,004,762 Uninc. household fees \$291,292
Landfill Operations	<ul style="list-style-type: none"> • Operate and maintain active & closed landfills • Landfill and equip. replacement transfer • Landfill Rent 	Expenditure \$27,224,654 39 FTEs	Revenue Disposal fees \$26,579,538 Interest \$645,116
Transfer Station Operations	<ul style="list-style-type: none"> • Collect fees • Monitor waste • Equip. replacement transfer 	Expenditure \$10,013,805 91 FTEs	Revenue Disposal fees \$9,931,650 Rent \$82,155
Transportation Operations	<ul style="list-style-type: none"> • Transport garbage to landfill • Haul leachate & maintenance material • Equip. replacement transfer 	Expenditure \$7,546,120 65 FTEs	Revenue Disposal fees \$7,546,120
Maintenance Operations	<ul style="list-style-type: none"> • Maintain facilities and equipment • Procure and control inventory 	Expenditure \$7,845,598 68 FTEs	Revenue Disposal fees \$7,845,598
Operations Administration	<ul style="list-style-type: none"> • Maintenance planning for operations functions 	Expenditure \$1,351,190 10 FTEs	Revenue Disposal fees \$1,351,190
Capital Facilities ¹	<ul style="list-style-type: none"> • Plan & execute capital projects • Environmental monitoring • Operations support 	Expenditure \$12,793,355 34 FTEs	Revenue Disposal fees \$11,911,525 CDL fees ² \$846,911 DOLE Grants \$34,919
Debt Service		Expenditure \$6,133,215 0 FTEs	Revenue Disposal fees \$6,133,215
Administration & Fiscal Services	<ul style="list-style-type: none"> • Manage fiscal functions • Administer customer service • Personnel functions • Payroll • Planning • Communications 	Expenditure \$12,408,202 48 FTEs	Revenue Disposal fees \$11,841,144 Interest \$532,801 Other \$85,644 Parks Reimbursement \$14,848 FEMA (\$66,235)

(1) Operating portion only of capital facilities budget; does not include debt-financed design/construction costs.

(2) Supports Construction, Demolition and Landclearing Program costs in Engineering Section.

Summary of 2004 Actual Activities	
2004 Total Revenues	\$87,870,323
Fund Balance Added	(\$6,398,105)
2004 Total Operating Expenditures.....	\$94,268,428
2004 Total Employees.....	383 FTEs

Acknowledgements

Published April 2005 by the Solid Waste Division, Department of Natural Resources and Parks, King County, Washington.

This Annual Report discusses the division's major activities for the year 2004. This edition of the Annual Report marks a change in the annual publication date from September to April.

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2004 Solid Waste Division Annual Report



King County

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