



Kirkland Solid Waste & Recycling

2008
Annual
Report



This page intentionally left blank

TABLE OF CONTENTS

YOUR SOLID WASTE DIVISION.....	4
SOLID WASTE & RECYCLING “AT A GLANCE”.....	5
SINGLE FAMILY RECYCLING.....	6-7
MULTIFAMILY RECYCLING.....	8-9
MULTIFAMILY RECYCLING PROJECT.....	10-11
COMMERCIAL RECYCLING.....	12-13
SPECIAL PROGRAMS & EVENTS.....	14-15
RESOURCES.....	16



YOUR SOLID WASTE DIVISION

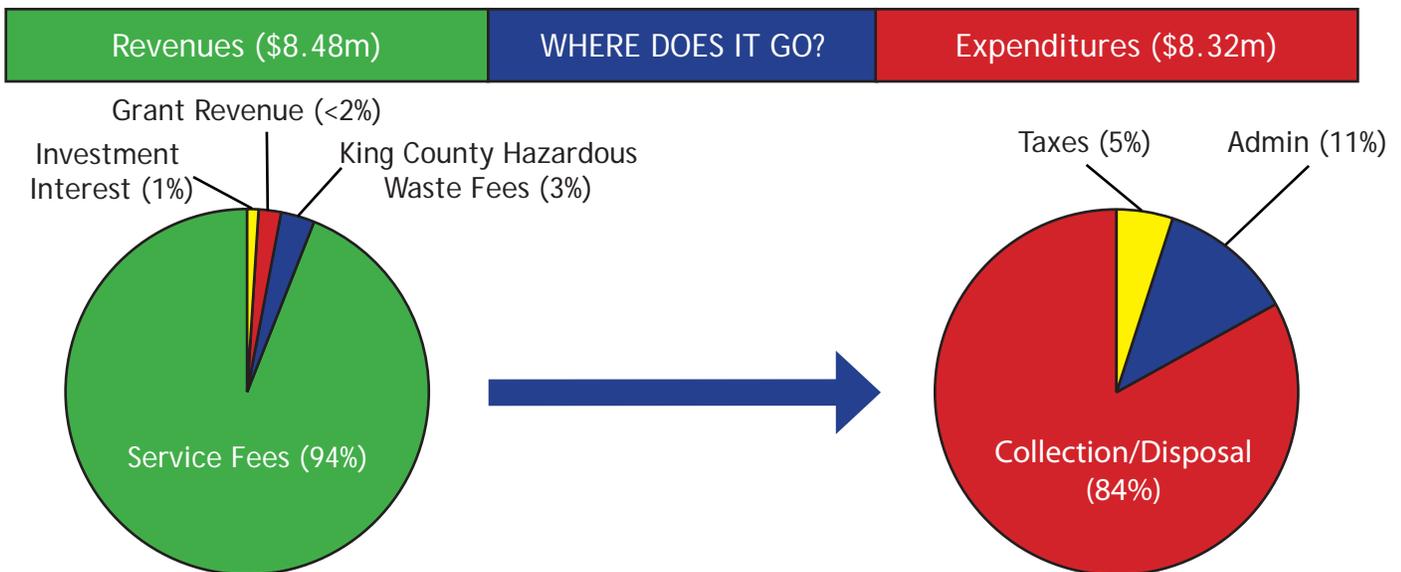
Your Solid Waste Division manages the garbage and recycling generated by residents and businesses within Kirkland's city limits. Simply stated, we're here to ensure that your garbage and recycling containers get dumped every week. But in many ways, it's much more complex than that. We're here to ensure that every Kirkland resident has the information to make educated decisions when it comes to recycling and waste prevention. We're here to innovate and to develop exciting new programs, such as our commercial organics and battery recycling programs, that provide opportunities to divert more materials for reuse or recycling. We're here to advocate for our customers to ensure that our solid waste rates are competitive and our services are second to none.

With the support of a proactive City Council and an advantageous contract with Waste Management, Inc., the City of Kirkland has become a regional leader in recycling and waste prevention. This is evidenced by a single family recycling diversion rate of 69% in 2008 which ranks first in King County among jurisdictions with 500 or more customers. Great strides have been made in terms of the basic services provided to all sectors of the population and a rate structure has been adopted for 2009/2010 that empowers the customer with the ability to control what he or



she pays by acting to reduce waste, recycle more, downsize their container, and save money. City staff has been proactive in securing grant funding to support education and outreach campaigns such as our biannual award-winning Reuse, Recycle, Conserve newsletter and our Business Recycling Program. And with the adage "If you're not at the table, you're on the menu" in mind, City officials and staff have been active participants in regional solid waste system planning and governance committees to ensure that Kirkland's interests are heard and represented.

Through combined efforts, our region has managed to extend the life of the Cedar Hills landfill from an anticipated closure date of 2006 to 2016. With the implementation of even more services, product stewardship programs, and incentives to recycle, we can extend the life even longer - which in turn will keep rates low relative to other waste disposal options, such shipping waste to distant landfills.



Solid Waste and Recycling

SOLID WASTE AND RECYCLING "AT A GLANCE"

This section provides an overview of the City of Kirkland's solid waste program for 2008.

Kirkland's Population in 2008: 48,410

Participants in Solid Waste Program

Single-family customers: 10,866
 Multifamily customers: 501
 Commercial customers: 661

Municipal Solid Waste Management

Tons
 Landfilled: 28,363.61
 Recycled: 9,396.90
 Composted: 7,315.91
 Total: 45,076.42

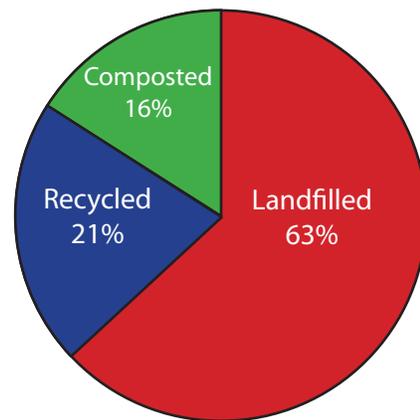
Material Collected & Recycled

Tons
 Mixed Recycling:
 Newspaper 2792.62
 Mixed Paper: 2356.46
 Cardboard: 2225.90
 PET: 68.97
 HDPE-natural: 38.27
 HDPE-colored: 48.08
 #3-7 Plastics: 52.82
 Plastic Wrap: 12.17
 Scrap Metal: 69.46
 Tin Cans: 119.88
 Aluminum: 56.98
 Glass: 1072.82
 Residue: 482.47
 Other Recyclables: Tons
 C&D Debris: 964.84
 Textiles: 0
 Electronics Scrap: 21.97
 Used Motor Oil: 651 gallons

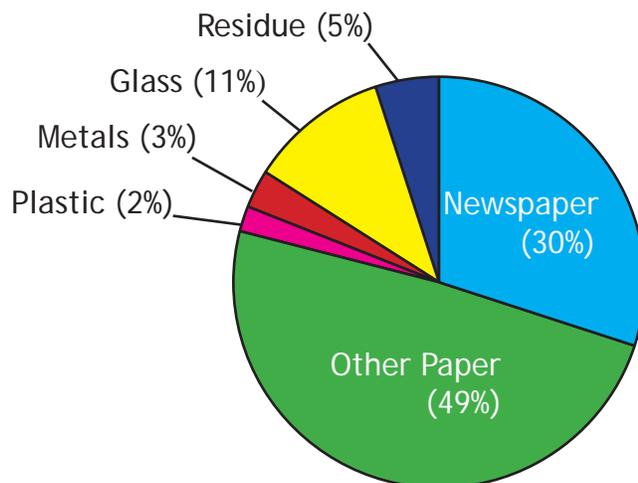
Total Recycling Diversion Rate 36.30%

ENOUGH ALUMINUM WAS RECYCLED IN KIRKLAND IN 2008 TO MAKE ABOUT 3 MILLION NEW CANS.

Kirkland Waste Stream Summary



Kirkland Mixed Recycling Composition¹



¹ Some materials have been combined. Plastics include PET, HDPE (natural & colored), #3-7 plastics, & plastic wrap. Metals include scrap metal, tin cans, & aluminum. Other Paper includes corrugated cardboard & mixed paper.



SINGLE FAMILY

The single family sector comprises about 90% of the solid waste accounts in Kirkland and a variety of services are available to these customers including:

- Weekly trash collection with variable-sized trash can options
- Weekly all-in-one recycling collection
- Weekly yard and food waste collection
- Curbside electronics collection, and
- Curbside collection of clean, reusable clothing.

To encourage residential recycling, the City changed its rate structure effective January 1, 2009. The cost of weekly service for 20- and 35-gallon garbage collection carts was reduced while the cost of service for 64- and 96-gallon carts was increased. These rate adjustments give customers more control over how much they spend on waste disposal: customers can save money by downsizing their garbage can and taking greater advantage of the City's free weekly recycling and organics collection.

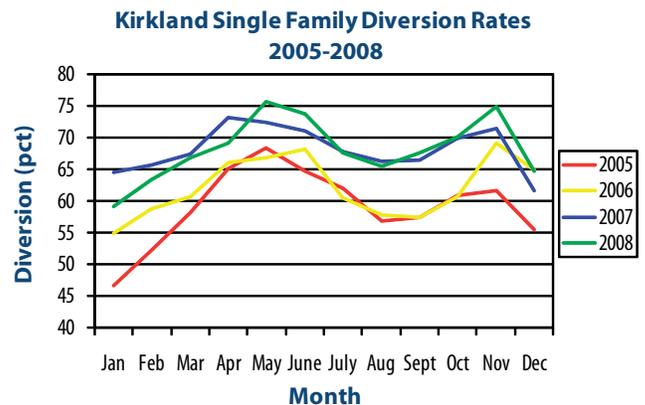
In an attempt to eliminate some of the barriers to food scrap recycling and divert more food scraps from the waste stream, the Solid Waste division began offering a sample of BioBags (compostable food scrap collection bags) to single-family customers in 2008.

The Reuse, Recycle, Conserve newsletter continues to be a successful tool for distributing environmentally-related information to Kirkland residents. Newsletter topics include everything from environmentally-focused events in the area, to seasonal gardening tips, to information regarding changes in recycling programs. This year we received the Excellence in Communications and Conservation award from the Pacific Northwest Section of the American Water Works Association (PNWS-AWWA) for our Spring 2007 issue of the newsletter.



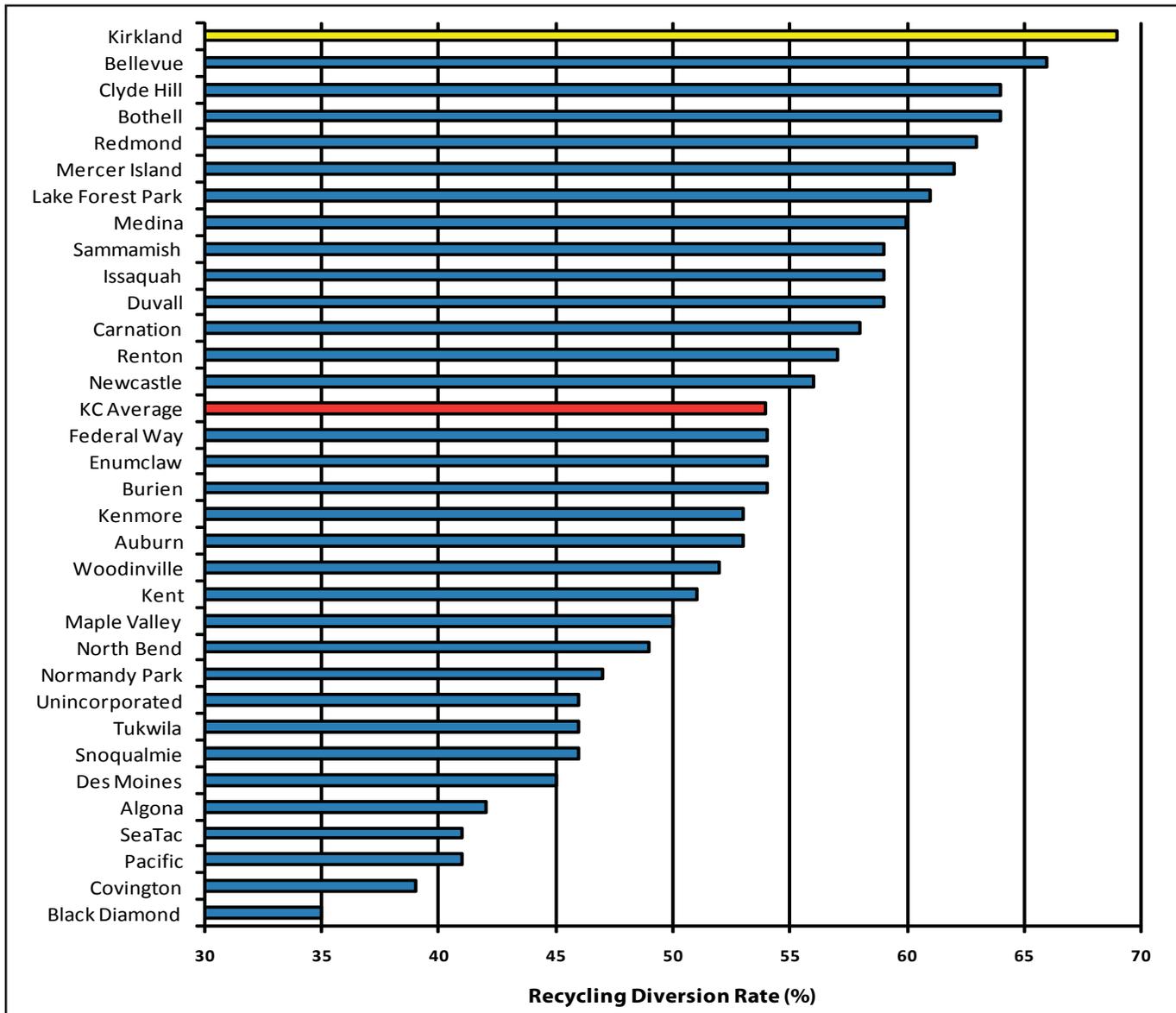
The Diversion Rate "Rollercoaster"

A couple of things become readily apparent in the chart below. One, the single family recycling diversion rate has steadily increased each year since 2005 and two, the defined peaks (spring and fall) and valleys (summer and winter) of the lines. This phenomenon can be attributed to the increased collection of organics material in the spring as our lawns begin to grow and we all begin to whip our yards into shape. Similarly, the spike in the fall months (Oct/Nov) can be attributed primarily to leaves and woody debris blown into our yards. In fact, almost 50% of all the single family organic material is collected in May/June (27% - 1,916 tons) and October/November (22% - 1,539 tons)!



SINGLE FAMILY

2008 King County Single Family Recycling Diversion Rates



For the second consecutive year, Kirkland's single-family recycling diversion rate of 69% is the highest in King County among 33 jurisdictions with 500 or more garbage customers!!! In 2007, Kirkland tied with the City of Bellevue. Kirkland single family residents are also number one in King County by producing the least amount of garbage (only 20 pounds!) per household/per week. On top of that, Kirkland's single-family recycling diversion rate without yard or food waste is also number one in King County at 45%.

Recycling Diversion Rate (RDR) refers to the percentage of the total waste stream that is diverted from the landfill for either recycling or reuse. The commodities included in this percentage include such materials as plastic, metals, newspaper, cardboard, yard waste, and even food scraps. Kirkland has a 69% single family diversion rate which means that almost 7 out of every 10 pounds of solid waste is diverted from the landfill.

MULTIFAMILY

The Kirkland multifamily sector is comprised of about 19,000 Kirkland residents living in 500 condominium, apartment, and mixed-use residential properties. While accounting for only 40% of the residential population in 2008, the multifamily sector actually produced 68% more garbage (3,600 tons) than the single family sector and accounted for only 25% of the non-organic residential recyclables collected.

Multifamily properties are provided with the same basic garbage and regular "All in One" recycling service options as the commercial sector. Property managers and homeowners' associations can select from four different cart and seven different dumpster sizes. Recycling services are provided at no extra charge for up to 150% the size of the garbage capacity, providing a built-in incentive to recycle. A new rate structure has been adopted for 2009/2010 that will encourage multifamily customers to downsize from the larger to the smaller garbage containers and take advantage of the extra free recycling volume.

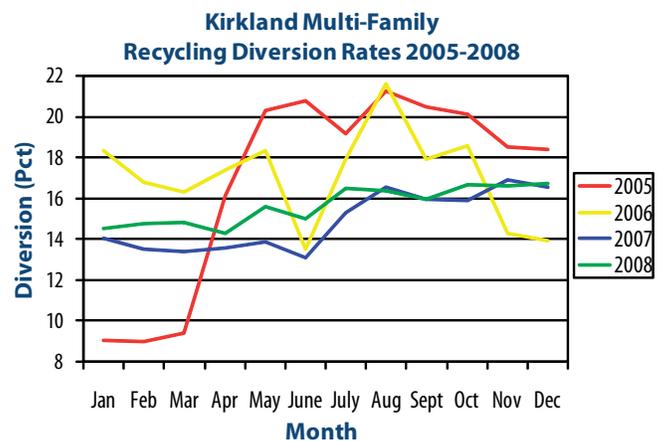
In 2008, the recycling diversion rate for the multifamily sector increased to 15.7% from 14.9% in 2007. While 41 less tons of recyclable material was collected in 2008 relative to 2007, multifamily residents actually disposed of 800 tons less garbage in 2008 compared to 2007. Additionally, the overall combined single- and multi-family residential recycling diversion rate in 2008 increased two percentage points to 31% in 2008. Much of this increase can be directly attributed to waste reduction in the multifamily sector.

The upward trend is expected to continue into 2009 as the City undertakes a new Multifamily Recycling Project intended to increase convenience, recycling capacity, and education (see pages 10-11).



Multifamily Diversion Rates

In contrast to single family, multifamily diversion rates are far less predictable. The cause of a spike in the multifamily rate from one month to the next could be attributed to a recent City education and outreach campaign, more outdoor activity by tenants, the addition of increased recycling capacity, or even simple luck. Fortunately, over the past two years, the volatility of the multifamily recycling diversion rate has been tempered somewhat and gradual increases have been seen from month to month, evidenced by the flattening of the blue and green lines below.



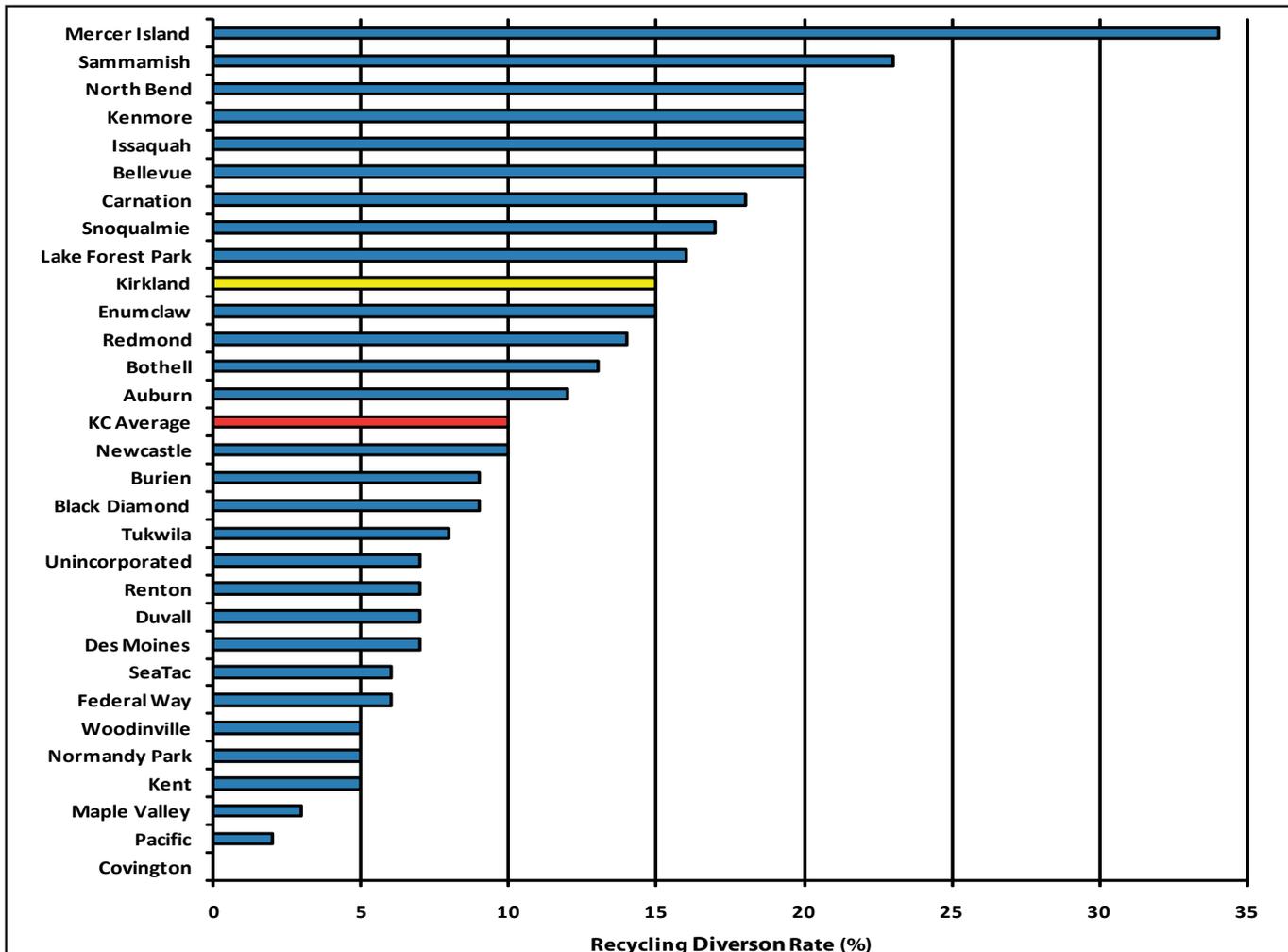
MULTIFAMILY

Why is the multifamily recycling diversion rate low?

In comparison to the single family recycling diversion rate, the multifamily recycling diversion rates in King County are quite low. This is due to a multitude of factors.

- The single family recycling rate includes the diversion of yard and food waste from the waste stream (over 7,000 tons in Kirkland in 2008). Alternatively, yard and food waste comprises less than one percent of the total multifamily waste stream (55 tons). Yard and food waste collection services are provided at very few multifamily complexes, meaning that the total amount of material able to be diverted from this sector is significantly less than the single family sector.
- Recycling in a multifamily complex has unique challenges including:
 - Lack of space for recycling containers and dumpsters in individual units & common areas
 - Lack of convenience
 - Low awareness and/or motivation by tenants
 - Lack of motivation by property owners and property managers
 - High turnover rate by residents in multifamily complexes

2008 King County Multifamily Recycling Diversion Rates

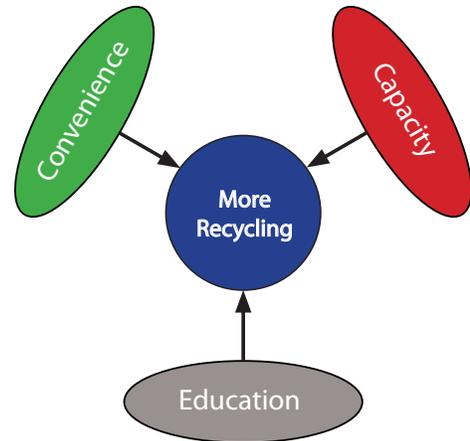


MULTIFAMILY RECYCLING PROJECT

Working in conjunction with the City's waste hauler, Waste Management, Inc., City staff identified every multifamily property in Kirkland and calculated their recycling rate. Properties were divided into percentile groups (or Phases) based upon their recycling rates. The first group to be contacted and offered free recycling assistance was Phase I, each with a 0-10 percent recycling rate. Each property in this group was offered a free assessment by City staff as to how the recycling capacity on their property could be increased at no additional cost.

Running concurrently with the contacts, all multifamily properties were offered free personal-sized recycling containers, filled with information on conservation and recycling, to be used by tenants to transport recyclables from their units to the outside recycling carts or dumpsters. The offer in our biannual Reuse, Recycle, Conserve newsletters and on our webpage was extremely popular and a total of 1,800 containers were distributed to 46 multifamily properties in 2008.

Additionally, four multifamily properties participated in a food scrap recycling pilot intended to determine how the service might be best implemented in the various sizes and shapes of multifamily properties. Each participating complex was provided with one or two lined 96-gallon commercial organics collection carts serviced twice

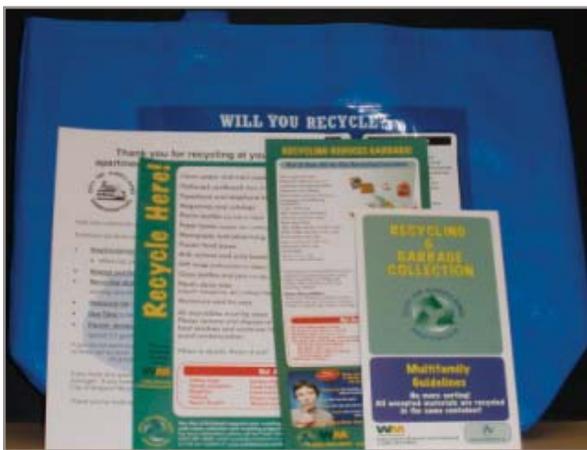


per week and each unit received a free kitchen food scrap container, Biobag liners, and educational materials.

The City is looking for opportunities to expand the pilot over the course of the first half of 2009. Ultimately, the goal is to offer food scrap recycling to all multifamily properties.

What's on the tap for 2009? We'll be looking to add a couple of more tools to our toolbox by: 1) amending the Kirkland Municipal Code to require all new or significantly-improved multifamily properties to provide adequate space for recycling containers and by adopting and 2) working to support the ban on the disposal of multifamily generated recyclables in the garbage to be included in the updated King County Comprehensive Solid Waste Management Plan.

In contrast to the the recycling diversion rate, the **Recycling Rate** refers to the proportion of recycling capacity relative to garbage capacity. For example, a multifamily property with a 6-cubic yard garbage dumpster and a 4-cubic yard recycling dumpster would have a recycling rate of 40% ($4 \text{ yards of recycling divided by garbage plus recycling volume } (4/10=40\%)$). The recycling rate is used in the multifamily sector as a way to gauge if customers have adequate space to recycle effectively. In Kirkland, our goal is to assist multifamily properties to achieve at least a 50% recycling rate, wherever possible.



Multifamily Recycling Kit

MULTIFAMILY RECYCLING PROJECT

Laurel Park Condominiums 190 units

Before improving their recycling service, Laurel Park had four enclosures with dumpsters for garbage and 25 96-gallon carts for recycling. Many of the carts were mislabeled and frequently overfilled.

Recycling Rate Before
30%



Laurel Park improved their recycling service by replacing recycling carts with higher capacity recycling dumpsters and distributing 60 individual recycling containers to tenants.

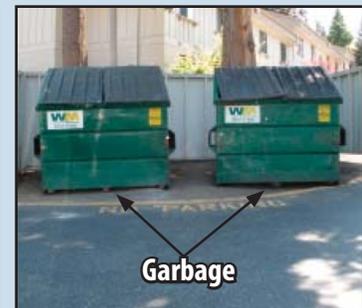
Recycling Rate After
49%



Woodside Terrace Condominiums 132 units

Before improving their recycling service, Woodside Terrace had four enclosures with seven garbage dumpsters and 22 96-gallon recycling carts. Two of the enclosures had two large garbage dumpsters.

Recycling Rate Before
19%



Property managers replaced the two large garbage dumpsters with two 8-yard recycling dumpsters for a savings of \$300/mo on their garbage bill. Each tenant also received a free recycling container from the City.

Recycling Rate After
55%



COMMERCIAL RECYCLING

The City of Kirkland offers one of the best business recycling programs in the area. Program services include variable garbage service level offerings, free recycling capacity up to 150% the size of garbage service, a free commercial organics program, and a rate structure that gives business owners the opportunity to control costs and save money.

In 2008, the City continued to offer many free recycling services to business owners to encourage them to implement new recycling programs or to improve existing programs. Evidence of success is shown by an increase of 292 tons of commercial recyclables collected from 2007 to 2008. Not only were businesses equipped with free desk side recycling containers and free recycling educational materials, they were also given free on-site, hands-on assistance from a City consultant. Additionally, a commercial organics program is offered in which all Kirkland businesses can elect to recycle their organic material for free.

2008 Commercial Waste Stream Summary	
Landfilled:	14,042.21 tons
Recycled:	2,957.21 tons
Composted:	198.38 tons
CDL (Construction/Demolition/Land-clearing debris)	964.84 tons
Total:	18,162.94 tons
Total Recycling Diversion Rate:	17.37%

The commercial sector recycling diversion rate numbers are not complete given that State law allows commercial properties to negotiate individually with third party haulers for recycling services. Waste Management provides recycling services to about 80 percent of the commercial accounts in Kirkland, so the reported commercial recycling diversion rate of 17.3% is lower than the actual rate. The City does not receive reports of recycling tonnages collected by third-party haulers so the real commercial recycling diversion rate is substantially higher than 17.3%



Commercial Organics Program

	2007	2008
# of participating businesses	31	76
Organic material collected	57.16 tons	198.38 tons

Kirkland’s commercial organics program continued to grow in 2008 – 31 business joined the program to bring the total number of participants to 76. The program is part of the City’s contract with Waste Management for commercial garbage and recycling collection and all businesses may participate in the program for free. Materials collected in this program include

vegetables and fruit, meat, bones, dairy and food-soiled paper. Businesses may have up to two 64-gallon or one 96-gallon cart provided and picked up twice a week for no additional charge. Carts are lined with a biodegradable liner by the Waste Management driver each time they are emptied. Collected organic waste is transported to Cedar Grove to be composted.



COMMERCIAL RECYCLING

Within 8 weeks, materials are broken down into a valuable soil amendment ready for landscaping.

Businesses that participate in the program receive tailored assistance including an onsite visit, setup of a food scrap collection system, and supporting literature and container labels.



Cedar Grove

- In 2008, Kirkland’s recycling consultant, Wilder Environmental Consulting, worked with Lake Washington School District’s Resource Conservation Manager to begin the rollout of food

recycling at seven Kirkland schools to include Franklin Elementary, Juanita Elementary, Lakeview Elementary, Rose Hill Elementary, Twain Elementary, Peter Kirk Elementary, and the International School.



Peter Kirk Elementary

- The City’s consultant also worked with Sodexo in 2008 to include food recycling for Kenworth Trucking employees (approximately 500) at their corporate headquarter’s cafeteria.

Business Reuse Recycle Conserve Newsletter

Topics included in the 2008 edition of the Business Reuse Recycle Conserve newsletter were the promotion of free recycling, information on assistance and tools available from the City, the annual business recycling collection event, the Green Business Program, Sustainable September, and food recycling.

Business Outreach

2008 was again a very successful year for visiting businesses onsite to help them start or improve recycling programs. Compared to 2007, this year’s outreach program assisted more than twice the number of businesses. Embedded recycling, promotional recycling tools to help businesses recycle, and onsite technical assistance proved to be a winning combination in helping commercial recycling.

2008 Business Outreach	
Businesses visited onsite	171
Blue recycling containers distributed with stickers listing what can & cannot be recycled	926
Business Recycling Kits (BRK) distributed	191
New business letters mailed out	330
Newsletters sent out to businesses	2805
Businesses who improved their recycling program (added more materials)	123
Businesses who started a new recycling program	33
Estimated amount of materials diverted annually due to containers distributed in 2008	4340 cubic yards

SPECIAL PROGRAMS AND EVENTS

Battery Recycling Program

2008 was the first full year of Kirkland’s battery recycling program. Its continued success was evidenced by the amount of batteries collected through the program – a total of approximately 6650 pounds of batteries were recycled at \$1.00 per pound. Batteries are collected at four locations – the Kirkland Library, Kirkland City Hall, the North Kirkland Community



Kirkland Library

Center, and the Peter Kirk Community Center. Batteries collected include household dry cell batteries - alkaline, rechargeable, button, cell phone, and laptop.

The City of Kirkland contracts with Total Reclaim to collect batteries from the four drop-off locations every other week. Dry cell batteries are sorted by type and sent by Total Reclaim to Kinsbursky Brothers Inc. in Anaheim, CA.

Material Recover Processes by Battery Type	
Nickel-Cadmium (Ni-Cad) & Nickel Metal Hydride (NiMH)	Batteries are heated in a cadmium recovery furnace. Cadmium is reduced, vaporized & condensed, producing cadmium metal for re-use in Ni-Cad batteries; the nickel-iron remainder become an ingredient in the production of nickel, chromium, & iron alloys used in stainless steel.
Lithium	Batteries are shredded in a caustic solution. Lithium goes into the solution & various metals are filtered and recovered. Lithium in solution is converted to lithium carbonate & sold to companies that make lithium ingot metals & foil for use in lithium batteries.
Alkaline	Batteries are shredded & neutralized in an acid bath. The material is dried & blended with other steel & transported to a steel mill for processing. The zinc recovered by the steel mill is resold as zinc-oxide. The manganese dioxide becomes an alloy in the production of steel re-bar.

Special Events in Kirkland

Zero Waste Events

A Zero Waste event is an event where waste is reduced to the greatest extent possible. Solid Waste conducted a Zero Waste event training for City staff and provided support to both City and community groups that hosted Zero Waste events.

Farmers Markets

The Solid Waste Division hosted two Wednesday Market booths and three Friday Market booths in 2008. The booths provided an excellent opportunity to interact with Kirkland residents and answer many questions. Recycling and waste reduction-focused outreach materials were distributed at the booths, including reusable shopping bags that were given to residents in exchange for participation in a short survey.

Solid Waste Division staff also assisted the Kirkland Wednesday Market staff in their efforts to make their Harvest Supper a Zero Waste event.



Harvest Supper Zero Waste Tent

One key improvement at both of the markets this season has been the presence of public ClearStream recycling containers and organics collection carts for vendors. The recycling and organics services were donated by Waste Management and the organics carts, in particular, were heaping full after each market.

Kirkland Uncorked

The Solid Waste Division also hosted an informational booth at Kirkland Uncorked, another excellent opportunity for interaction with Kirkland residents and visitors and to distribute recycling information and reusable shopping bags to patrons who filled out a short survey.

With the help of the Parks Department, 30 garbage/recycling stations were established through-

SPECIAL PROGRAMS AND EVENTS

out the event with ClearStream recycling containers in lieu of the blue recycling carts that were used in 2007. The alternative containers resulted in a significant decrease in the contamination of collected recyclables from 2007. Waste Management donated the garbage and recycling services and containers for the event.

Shopping Bags

In exchange for filling out a short survey, attendees at the farmers markets and Kirkland Uncorked received a free reusable shopping bag made of 100% recycled PET soda bottles. Between these events, approximately 500 reusable shopping bags were distributed.



Reusable Shopping Bag

The survey asked attendees about their opinion regarding the use of plastic shopping bags in Kirkland. Most people surveyed either use both paper and plastic bags (30%) or always use reusable shopping bags (25%).

Finally, when asked “What is the best way to manage plastic bags?” no best management practice predominated over another. Actions that received support included a mandate to either charge a tax (14%) or ban them (16%), an increase in public education (19%), giving away more reusable bags (16%), and recycling bags at the store (14%).

Recycling Collection Events

Recycling collection events are held throughout the year, biannually (spring and fall) for the residential sector and annually (fall) for the business sector. These events provide the opportunity to recycle items that are not accepted in week-



Fall Recycling Collection Event

ly recycling or trash collection and to divert materials from our landfill.

Residential Recycling Collection Events

The spring collection event was held on April 19th and the fall residential recycling collection event was held on October 11th, both at the Houghton Park and Ride. The popularity of the biannual events is evidenced by the participation of residents and the large amount of material collected at each event. At the spring event, 860 carloads of recyclable material arrived, totaling nearly 51 tons, while at the fall event, participants dropped off 830 carloads of material, totaling nearly 52 tons.

2008 Residential Collection Events		
	Spring	Fall
Computers & Electronics	9.28 tons	N/A
Computer Monitors	272 monitors	181 monitors
Televisions	229 sets	189 sets
Fluorescent Lights	650 lights	1100 lights
Reusable Goods & Textiles	5.9 tons	5.6 tons
Household Batteries	11,330 batteries	13,420 batteries
Metals ¹	N/A	19.65 tons

Business Recycling Collection Event

On September 18th, the annual Business Recycling Collection Event was held at the Totem Lake Mall. The event is specifically tailored to assist Kirkland business owners dispose of difficult-to-recycle items. A total of 203 businesses participated in the event and dropped off 27 tons of recyclable materials and products: a new record for the event.

¹Includes appliances, ferrous metals, nonferrous metals, electronic equipment

RESOURCES

<p>City of Kirkland Recycling Waste prevention & recycling assistance</p>	<p>http://www.ci.kirkland.wa.us Click on the "Kirkland Recycles" button</p> <p>425.587.3812</p>
<p>City of Kirkland Battery Recycling Free drop-off sites household dry cell batteries</p>	<p>City Hall – 123 5th Ave North Kirkland Community Center – 12421 103rd Ave NE Peter Kirk Community Center – 352 Kirkland Ave</p> <p>425.587.3812</p>
<p>Local Hazardous Waste Management Disposal of household hazardous waste such as oil based paints, thinners, oils, & batteries</p>	<p>http://www.govlink.org/hazwaste/house</p> <p>206.296.4692</p>
<p>What Do I Do With...? Searchable database of recyclers by material type</p>	<p>http://your.kingcounty.gov/solidwaste/wdidw/</p> <p>206.296.4466</p>
<p>E-Cycle Washington Free program to recycle televisions, computer monitors, computers, & laptops</p>	<p>www.ecyclewashington.org www.ci.kirkland.wa.us/recycle</p> <p>1.800.RECYCLE</p>
<p>Take It Back Network Listing of King County vendors who recycle electronics, fluorescent bulbs and computers.</p>	<p>http://www.takeitbacknetwork.org/</p> <p>206.296.4466</p>
<p>Online Exchange Sites for exchange of household products & reusable building materials</p>	<p>http://your.kingcounty.gov/solidwaste/exchange/</p>