

City of Lawrence  
Public Works Department  
MEMORANDUM

TO: David L. Corliss, City Manager

FROM: Kathy Richardson, Waste Reduction and Recycling Operations Supervisor  
Craig Pruett, Solid Waste Operations Supervisor  
Chuck Soules, Public Works Director  
Tammy Bennett, Assistant Public Works Director  
Steve Stewart, Fleet Manager  
Eileen Horn, County/City Sustainability Coordinator

CC: Sustainability Advisory Board

DATE: November 17, 2010

RE: [CC future agenda item](#)  
[Receive staff update on menu of options for solid waste and recycling services in Lawrence](#)

**Background information:**

On September 7, 2010, the Lawrence City Commission directed staff to draft a multi year solid waste plan with a menu of options for future City Commission considerations. The menu of options would include review of our existing services, the development of long-term plans for automation and other efficiency and safety improvements, a variable rate pricing for solid waste collection services, and curbside recycling service opportunities.

The goal is for staff to develop a long-term solid waste plan in consultation with interested citizens and citizen groups including the Sustainability Advisory Board. The City Commission and Lawrence community will determine the appropriate mix of services, rate structures, service quality, and level of automation. Once consensus is reached on the overall service plan, the City Commission can determine the best method for achieving that service.

**Outline of menu of options:**

A solid waste review team including City staff listed above was formed in September 2010. This staff group has met weekly with the City Manager to develop the attached documents for the City Commission's review:

- Description of current waste reduction and recycling services and other solid waste special projects (pages 1-2)
- Source reduction policy options (pages 3-4)
- Outline of the menu of options for solid waste and recycling services (pages 5-8)
- Curbside recycling program options (pages 9-10)
- Estimated vehicle pricing (page 11)
- Estimated cart pricing and City of Lawrence Solid Waste Division workers' compensation costs (page 12)
- Staff research, brainstorming meetings, and area facility tours (pages 13-14)

**Next step:**

The solid waste review team suggests presentation of the information developed to date to the Sustainability Advisory Board, neighborhood associations, and other public forums for the solicitation of additional input over the next three months.

**Action requested:**

Receive staff update on menu of options outline for solid waste and recycling services. Direct staff as appropriate.

## **Description of current waste reduction and recycling services and other solid waste special projects**

The City of Lawrence Waste Reduction and Recycling Division is part of the Solid Waste Division. Programs and operations are funded through solid waste fees for residential and commercial services. The Division's objective is to facilitate and promote the reduction of materials from the waste stream.

Over the years the Division has implemented the following programs and services:

<b>Yard Trimmings Collection and Composting Program</b>
<ul style="list-style-type: none"> <li>City-wide collection of grass, leaves and small woody debris occurs on Monday mornings March through mid-December, except on holidays. Yard trimmings set out in cans, City carts or compostable paper bags are transported to the City's Wood Recovery and Compost Facility for processing.</li> </ul>
<b>Compost and Woodchip Sales</b>
<ul style="list-style-type: none"> <li>Yard trimmings and brush collected are processed into finished compost and woodchips which are used in City landscaping projects and distributed back to residents through community sale events in the Spring and Fall.</li> </ul>
<b>Backyard Composting Bins and Kitchen Scrap Pails Sales</b>
<ul style="list-style-type: none"> <li>In order to encourage backyard composting, compost bins and kitchen scrap pails are available for purchase by Lawrence residents.</li> </ul>
<b>Community Drop-Off Recycling Bins for Newspaper, Cardboard, Mixed Paper</b>
<ul style="list-style-type: none"> <li>Several municipal drop boxes are located throughout Lawrence used by households and businesses to recycle newspaper, cardboard and mixed paper.</li> </ul>
<b>Cardboard and Office Paper Recycling Programs for Businesses</b>
<ul style="list-style-type: none"> <li>Cardboard and office paper recycling collection services are available for small to medium-sized businesses and schools in Lawrence.</li> </ul>
<b>Household Hazardous Waste (HHW) Program</b>
<ul style="list-style-type: none"> <li>The HHW facility accepts hazardous materials including paint, cleaners, automotive fluids, pesticides, pool chemicals, and batteries from Douglas County households throughout the year by drop-off appointment.</li> </ul>
<b>Product Reuse Program</b>
<ul style="list-style-type: none"> <li>Products dropped off at the HHW facility that are in good, usable condition are distributed for free through the Product Reuse program to Douglas County households and not-for-profit organizations.</li> </ul>
<b>Small Quantity Generator (SQG) Program</b>
<ul style="list-style-type: none"> <li>The SQG program provides hazardous waste disposal options for Kansas Small Quantity Generator businesses in Douglas County, as well as waste reduction and pollution prevention technical assistance.</li> </ul>
<b>Electronic Recycling Collection Events</b>
<ul style="list-style-type: none"> <li>The Division hosts two recycling collection events per year for electronics including computers, televisions, small appliances, and hand held devices.</li> </ul>

<b>Freon Containing Units (Refrigerators &amp; AC Units) Recycling Program</b>
<ul style="list-style-type: none"> <li>▪ Bulky items including Freon containing units such as refrigerators and air conditioners are collected by appointment. The Freon is recovered from these units in-house by certified technicians and metal parts are recycled.</li> </ul>
<b>Tire Disposal and Recycling Program</b>
<ul style="list-style-type: none"> <li>▪ Five automobile tires per household per year are collected by appointment for proper disposal and recycling.</li> </ul>
<b>Event: Lawrence Earth Day Parade and Celebration</b>
<ul style="list-style-type: none"> <li>▪ The Lawrence Earth Day Parade and Celebration is an annual event hosted by the Division to raise awareness and appreciation for the Earth's natural environment.</li> </ul>
<b>Event: Lawrence Energy Conservation Fair</b>
<ul style="list-style-type: none"> <li>▪ The Lawrence Energy Conservation Fair is an annual event hosted by the Division to help residents and businesses find sensible ways to reduce energy costs by choosing products and services that will increase the energy efficiency of homes, businesses, and personal transportation.</li> </ul>
<b>Event: Lawrence Sustainable Homes Tour</b>
<ul style="list-style-type: none"> <li>▪ The City of Lawrence participates annually in the American Solar Energy Society's National Solar Tour which showcases homes and buildings using solar energy, energy efficiency, and other sustainable technologies. Staff organizes and promotes the tours in Lawrence and surrounding area.</li> </ul>
<b>Education: Community Group and School Presentations and Facility Tours</b>
<ul style="list-style-type: none"> <li>▪ Multiple presentations and City facility tours are prepared for schools/ universities, community groups, and staff groups.</li> </ul>
<b>Education: Central Point for Recycling Information</b>
<ul style="list-style-type: none"> <li>▪ The Division serves as a central point for community recycling information. Citizens receive information through phone consultations, online resources (i.e. website, Facebook), brochures and flyers, and ads (i.e. print, radio, television).</li> </ul>

In addition to the weekly collection of residential and commercial trash, the Solid Waste Division implemented the following special projects:

<b>Downtown Litter Cleanup</b>
<ul style="list-style-type: none"> <li>▪ Downtown alleys are patrolled for litter weekly.</li> </ul>
<b>Highway Litter Cleanup</b>
<ul style="list-style-type: none"> <li>▪ Staff completes highway litter cleanup on an as needed basis.</li> </ul>
<b>Neighborhood Cleanup</b>
<ul style="list-style-type: none"> <li>▪ Alley litter collections on Fridays are performed on a rotating basis among neighborhoods with alleys. Neighborhood cleanups are also performed at the request of and in coordination with neighborhood associations.</li> </ul>
<b>Dead Animal Pickup</b>
<ul style="list-style-type: none"> <li>▪ Collection of dead animals is a daily task for the crews.</li> </ul>

## **Source reduction policy options**

### **Source reduction information**

The U.S. Environmental Protection Agency estimates that between 1960 and 2008 the amount of waste each person generated almost doubled from 2.7 to 4.5 pounds per day. The most effective way to stop this trend is by preventing waste in the first place.

Waste prevention, also known as "source reduction," is the practice of designing, manufacturing, purchasing, or using materials in ways that reduce the amount or toxicity of trash created. Reusing items is another way to stop waste at the source because it delays or avoids that item's entry in the waste collection and disposal system.

Source reduction, including reuse, can help reduce waste disposal and handling costs, because it avoids the costs of recycling, municipal composting, landfilling, and combustion. Source reduction also conserves resources and reduces pollution, including greenhouse gases that contribute to global warming.

### **Benefits of source reduction**

- Saves natural resources.
- Reduces toxicity of waste.
- Reduces costs.

### **Establishing source reduction goals**

Establishing source reduction goals and measurement methodologies are important for effective source reduction programs because they help communities establish program priorities, track and evaluate progress, and recognize accomplishments and target areas for further efforts.

It would be beneficial for Lawrence to establish community source reduction goals and a measurement system.

## Tools to achieve source reduction goals for Lawrence

### **Pass policy ordinances or regulations targeted at retailers, businesses, or individuals that encourage the reduction of a particular material or that bans material from collection or disposal.**

- Implement variable rate pricing for solid waste collection systems.
- Adopt material bans that limit the collection, use or sale of some items and prohibit others from being landfilled (i.e. plastic bottles, bags, Styrofoam).

### **Provide economic incentives targeted to residents and businesses.**

- Advocate for state level waste reduction goals that give credit for source reduction.
- Sponsor award programs that reward innovations in waste reduction.

### **Establish a source reduction or reuse program, including a salvage/reuse center, a comprehensive backyard composting program, or an on-site technical assistance program for local businesses.**

- Reuse operations coordinated by local government where used materials such as furniture, construction materials and other items are donated and either sold or given away to interested parties (i.e. Habitat ReStore).
- Continue to sell backyard compost bins and also provide a rebate for the purchase of mulching lawnmowers.
- Offer technical assistance in the form of waste audits and one-to-one interactions.

### **Educate businesses and consumers about general source reduction goals and specific source reduction behaviors.**

- Increase public education using print, radio, television, online resources, etc.
- Develop targeted informational campaigns i.e. "smart shopping" programs that inform about specific behavioral changes.
- Offer source reduction trainings, workshops and on-site demonstrations.

### **Implement source reduction programs in-house within local government facilities and operations to reduce volume and toxicity of waste.**

- Develop waste reduction goals for City operations (i.e. divert 50% from landfill).
- Create an in-house source reduction planning committee.
- Continue the Environmentally Preferable Purchasing (EPP) program that prioritizes low-impact products and minimized packaging.
- Implement reduction programs (i.e. paper use reduction goals, ban on plastic bottles in City Departments).

### **Form partnerships with other groups to initiate programs or to support federal and state policies encouraging source reduction and the efficient use of materials.**

- Support and be an active member of the Product Stewardship Institute (PSI).
- Support a state-wide beverage container deposit bill which would remove plastic, glass, and aluminum beverage containers from the waste stream (i.e. "bottle bill").

## Outline of the menu of options for solid waste and recycling services

### Residential

Trash Curbside Collection	
Description	
<b>Option A</b>	<ul style="list-style-type: none"> <li>- Fleet: Fully Automated with Minimal Semi Automated</li> <li>- Containers: Mandatory Carts (various sizes)</li> <li>- Variable Rates Pricing (based on weight or volume)</li> <li>- Bulky Item Charges</li> </ul>
	<ul style="list-style-type: none"> <li>▪ <u>Advantages:</u> puts fewer large trucks on municipal streets reducing wear and tear on municipal infrastructure; consumes less fuel saving operating costs and lowering air emissions; creates a safer work environment; reduces labor-related costs like insurance, workers' comp days lost, and turnover costs; and can drive recycling thereby reducing the amount of material to be landfilled.</li> <li>▪ <u>Disadvantages:</u> cost of equipment and equipment maintenance; significant changes to neighborhood parking</li> </ul>
<b>Option B</b>	<ul style="list-style-type: none"> <li>- Fleet: Both Fully and Semi Automated</li> <li>- Containers: Mandatory Carts (various sizes)</li> <li>- Variable Rates Pricing (based on volume)</li> <li>- Bulky Item Charges</li> </ul>
	<ul style="list-style-type: none"> <li>▪ <u>Advantages:</u> same advantages as Option A above for fully automated trucks; operating some semi automated truck routes would maintain most on-street parking</li> <li>▪ <u>Disadvantages:</u> cost of equipment and equipment maintenance; some changes to neighborhood parking</li> </ul>
<b>Option C (Status Quo)</b>	<ul style="list-style-type: none"> <li>- Fleet: Semi Automated</li> <li>- Containers: Carts (available for rent), Bags and Cans</li> <li>- Fixed Rate for all Residents' Unlimited Trash Volumes</li> <li>- Minimal Charges for Bulky Items</li> </ul>
	<ul style="list-style-type: none"> <li>▪ <u>Advantages:</u> lower cost of equipment and equipment maintenance; no changes to neighborhood parking</li> <li>▪ <u>Disadvantages:</u> decreased efficiency without fully automated trucks; increased labor-related costs like salaries, insurance, workers' comp</li> </ul>

## Residential

Yard Trimmings Curbside Collection (and Food Waste Curbside Collection)	
Description	
<b>Option A</b>	<ul style="list-style-type: none"> <li>- Fleet: Fully Automated with Minimal Semi Automated</li> <li>- Containers: Mandatory Carts (various sizes)</li> <li>- Service Included in Solid Waste Base Fee</li> </ul>
<b>Option B</b>	<ul style="list-style-type: none"> <li>- Fleet: Both Fully and Semi Automated</li> <li>- Containers: Carts (available for rent), YW Paper Bags, Cans</li> <li>- Service Included in Solid Waste Base Fee</li> </ul>
<b>Option C (Status Quo)</b>	<ul style="list-style-type: none"> <li>- Fleet: Semi Automated</li> <li>- Containers: Carts (available for rent), YW Paper Bags, Cans</li> <li>- Service Included in Solid Waste Base Fee</li> </ul>

Recycling Curbside Collection	
Description	
<b>Option A</b>	<ul style="list-style-type: none"> <li>- Fleet: Fully Automated with Minimal Semi Automated</li> <li>- Containers: Mandatory Carts (various sizes)</li> <li>- Service Included in Solid Waste Base Fee</li> </ul>
<b>Option B</b>	<ul style="list-style-type: none"> <li>- Fleet: Semi Automated</li> <li>- Containers: Mandatory Carts (various sizes)</li> <li>- Service Included in Solid Waste Base Fee</li> </ul>
<b>Option C (Status Quo)</b>	<ul style="list-style-type: none"> <li>- Currently the City does not operate residential curbside recycling collection. Six private companies provide this service.</li> </ul>

Construction and Demolition Curbside Collection	
Description	
<b>Option A</b>	<ul style="list-style-type: none"> <li>- Fleet: Fully Automated</li> <li>- Containers: Mandatory Containers (various sizes)</li> <li>- Variable Rates Pricing (based on weight or volume)</li> <li>- Destination: Construction and Demolition Recycling Facility</li> </ul>
<b>Option B (Status Quo)</b>	<ul style="list-style-type: none"> <li>- Fleet: Fully Automated</li> <li>- Containers: Mandatory Containers (various sizes)</li> <li>- Variable Rates Pricing (based on volume)</li> <li>- Destination: Landfill</li> </ul>



## Commercial

Trash Collection	
Description	
<b>Option A</b>	<ul style="list-style-type: none"> <li>- Fleet: Fully Automated with Minimal Semi Automated</li> <li>- Containers: Mandatory Containers (various sizes)</li> <li>- Variable Rates Pricing (based on weight or volume)</li> <li>- Bulky Item Charges</li> </ul>
<b>Option B (Status Quo)</b>	<ul style="list-style-type: none"> <li>- Fleet: Both Fully and Semi Automated</li> <li>- Containers: Mandatory Containers (various sizes)</li> <li>- Variable Rates Pricing (based on volume)</li> <li>- Bulky Item Charges</li> </ul>

Food Waste Collection	
Description	
<b>Option A</b>	<ul style="list-style-type: none"> <li>- Fleet: Fully Automated with Minimal Semi Automated</li> <li>- Containers: Mandatory Carts (various sizes)</li> <li>- Participating Businesses Pay a Fee, Includes Cart</li> </ul>
<b>Option B</b>	<ul style="list-style-type: none"> <li>- Fleet: Semi Automated</li> <li>- Containers: Mandatory Carts (various sizes)</li> <li>- Participating Businesses Pay a Fee, Includes Cart</li> </ul>
<b>Option C (Status Quo)</b>	<ul style="list-style-type: none"> <li>- Currently the City does not operate curbside collection for food waste generated by commercial customers.</li> </ul>

Recycling Collection	
Description	
<b>Option A</b>	<ul style="list-style-type: none"> <li>- Fleet: Fully Automated with Minimal Semi Automated</li> <li>- Containers: Mandatory Containers (various sizes)</li> <li>- Participating Businesses Pay a Fee</li> <li>- Recyclables Included: Single Stream</li> </ul>
<b>Option B</b>	<ul style="list-style-type: none"> <li>- Fleet: Semi Automated</li> <li>- Containers: Mandatory Containers (various sizes)</li> <li>- Participating Businesses Pay a Fee</li> <li>- Recyclables Included: Single Stream</li> </ul>
<b>Option C (Status Quo)</b>	<ul style="list-style-type: none"> <li>- Fleet: Semi Automated</li> <li>- Containers: Mandatory Containers (various sizes)</li> <li>- Service Included in Solid Waste Base Fee</li> <li>- Recyclables Included: Cardboard, Office Paper Only</li> </ul>

**Commercial**

<b>Construction and Demolition Collection</b>	
<b>Description</b>	
<b>Option A</b>	<ul style="list-style-type: none"><li>- Fleet: Fully Automated</li><li>- Containers: Mandatory Containers (various sizes)</li><li>- Variable Rates Pricing (based on weight or volume)</li><li>- Destination: Construction and Demolition Recycling Facility</li></ul>
<b>Option B (Status Quo)</b>	<ul style="list-style-type: none"><li>- Fleet: Fully Automated</li><li>- Containers: Mandatory Containers (various sizes)</li><li>- Variable Rates Pricing (based on volume)</li><li>- Destination: Landfill</li></ul>

## Curbside recycling program options

Curbside recycling program options		
<b>A. City curbside program:</b> collection, delivering materials to City owned material recovery facility (option 2: City partners with private company to build/operate a material recovery facility)		
	How it might look	City would have collection equipment, staffing for curbside collection of materials, and a local material recovery facility for processing materials collected.
	Advantages	<ul style="list-style-type: none"> <li>▪ Most secure program for long-term recycling by building and managing our own material recovery facility</li> <li>▪ Maintain control of program, i.e. types of recyclables collected</li> <li>▪ Customer service will be high due to single point of contact (city) for recycling and solid waste</li> </ul>
	Disadvantages	<ul style="list-style-type: none"> <li>▪ Cost of capitalization and start up (facility, equipment, staffing)</li> <li>▪ Amount of time for implementation (locating facility, constructing, installation of equipment, etc.)</li> </ul>
<b>B. City curbside program:</b> collection, delivering materials to City owned recycling transfer station (option 2: City partners with a private company to build/operate a recycling transfer station)		
	How it might look	City would have collection equipment, staffing for curbside collection of materials, and a local transfer station for consolidating recyclables from multiple collection vehicles into larger, high-volume transfer vehicles. Loads would be hauled to contracted material recovery facility.
	Advantages	<ul style="list-style-type: none"> <li>▪ More economical shipment to contracted material recovery facility</li> <li>▪ Customer service will be high due to single point of contact (city) for recycling collection and solid waste</li> </ul>
	Disadvantages	<ul style="list-style-type: none"> <li>▪ Cost of capitalization and start up (facility, equipment, staffing)</li> <li>▪ Amount of time for implementation (locating transfer station, constructing, installation of equipment, etc.)</li> <li>▪ Revenue from recyclables significantly decreased when taken to contracted material recovery facility vs. City owned facility</li> </ul>
<b>C. City curbside program:</b> collection, delivering materials to established material recovery facility		
	How it might look	City would have collection equipment and staffing for curbside collection of materials. Loads would be hauled to contracted material recovery facility.
	Advantages	<ul style="list-style-type: none"> <li>▪ Less expensive start up - will require capitalization of equipment and some staffing, but not facility</li> <li>▪ Customer service will be high due to single point of contact (city) for recycling collection and solid waste</li> </ul>
	Disadvantages	<ul style="list-style-type: none"> <li>▪ Distance to the closest facility is 35 miles one-way. Estimated time per load to deliver is 1 hour 40 minutes (round trip including dump time)</li> <li>▪ Cost of capitalization and start up (equipment only)</li> <li>▪ Will not control material streams since we don't manage final outlet</li> <li>▪ Revenue from recyclables significantly decreased when taken to contracted material recovery facility vs. City owned facility</li> </ul>

<b>D. Private curbside program: collection and material processing by RFP</b>		
	How it might look	City would contract for turnkey curbside collection services with a private company.
	Advantages	<ul style="list-style-type: none"> <li>▪ Fastest implementation</li> <li>▪ Least expensive for start up, utilizing equipment and facilities of contracted company</li> <li>▪ External validation of costs and expenses</li> </ul>
	Disadvantages	<ul style="list-style-type: none"> <li>▪ Customer service not integrated</li> <li>▪ Do not control program (materials collected or customer service)</li> <li>▪ Distance to the closest facility is 35 miles one-way</li> </ul>
<b>Increasing the convenience and access to recycling opportunities without implementing full curbside program</b>		
<b>E. Partner with local curbside companies to promote services</b>		
	How it might look	City would provide promotional services for curbside companies through utility billing and local newspapers so residents who wish to contract for services have the information readily available.
	Advantages	<ul style="list-style-type: none"> <li>▪ Minimal cost to city but provide residents with information they want on curbside collection companies</li> <li>▪ Supports existing businesses with established customer bases</li> </ul>
	Disadvantages	<ul style="list-style-type: none"> <li>▪ Dependent on multiple small companies, most of whom depend on other companies for materials outlets</li> <li>▪ Subscription only service may not meet goals to increase curbside collection for "maybe" recyclers (those who might put out recycling if they were already paying for it and it was collected at the curb)</li> <li>▪ Differential in services, materials collected and pricing</li> </ul>
<b>F. Expanded drop off locations for recyclables</b>		
	How it might look	<p>Variety of possibilities such as:</p> <ul style="list-style-type: none"> <li>▪ duplication of Wal-Mart style drop-off facility in one or more additional locations</li> <li>▪ contract placement of multiple-material collections containers (example at Wal-Mart parking lot off Wanamaker in Topeka)</li> </ul>
	Advantages	<ul style="list-style-type: none"> <li>▪ Increased convenience over current system (more drop off locations)</li> <li>▪ Public would not feel "dependent" on Wal-Mart or 12<sup>th</sup> St Bargain Center for recycling</li> </ul>
	Disadvantages	<ul style="list-style-type: none"> <li>▪ Cost if constructing Wal-Mart style collection facilities (facility, equipment, staffing)</li> <li>▪ No centralization of materials that would maximize possible revenues</li> <li>▪ Drop-off sites (unstaffed) become dumping grounds for other materials</li> <li>▪ Code compliance (site planning, aesthetics) for multiple sites</li> <li>▪ Shipping materials from multiple drop-off sites with no central material recovery facility</li> </ul>

### Estimated vehicle pricing

25 Yard Vehicles		Conventional Cab	Low Entry Cab	Dual Drive	Total Unit Cost	GPS System <sup>1</sup>	Weighing System <sup>2</sup>
Option A	Rear Loader Semi-Automated 2 or 3 Person Operation	\$170,000	\$20,000	\$10,000	\$200,000	\$300 initial \$360 / year	\$8,500
Option B	Side Loader Semi-Automated 1 or 2 Person Operation	\$195,000	\$20,000	\$10,000	\$225,000	\$300 initial \$360 / year	\$8,500
Option C	Side Loader with Arm Fully Automated 1 Person Operation	\$210,000	\$20,000	NA	\$230,000	\$300 initial \$360 / year	\$8,500
Option D	Front Loader Fully Automated 1 Person Operation	\$185,000	\$20,000	NA	\$205,000	\$300 initial \$360 / year	\$8,100

Other Type of Vehicles	Conventional Cab	Low Entry Cab	Dual Drive	Total Unit Cost	GPS System <sup>1</sup>	Weighing System <sup>3</sup>
Roll-Off 1 Person Operation	\$150,000	NA	NA	\$150,000	\$300 initial \$360 / year	\$3,400
Hook-Lift 1 Person Operation	\$90,000	NA	NA	\$90,000	\$300 initial \$360 / year	\$3,400

<sup>1</sup> The Wind Trac Global Positioning System (GPS) price estimate is for 65 vehicles. It includes a black box, monitor and tracking software for each vehicle. The monthly fees associated with the implementation of this tracking system are \$30 per vehicle.

<sup>2</sup> The Weighing System is a Vulcan Scale that has load cells that are attached in-between the body and chassis of the vehicle. The monitor is in the cab of the vehicle. It reads the refuse weights in a static mode or as they are loaded on the vehicle. This weighing system is designed for commercial accounts with container sizes that range from 2 to 3 yard.

<sup>3</sup> The Weighing System is a Vulcan Scale that is registered through hydraulic pins that are attached to the truck. The monitor is in the cab of the truck and it reads the weights as it is loaded on the truck. This weighing system is designed for commercial accounts with container sizes that range from 12 to 40 yard.

### Estimated cart pricing

Cart Size	Unit Cost <sup>1</sup>	RFID Tag <sup>2</sup>	Total Unit Cost
35 Gallon	\$33	\$1.50	\$34.50
65 Gallon	\$41	\$1.50	\$42.50
95 Gallon	\$45	\$1.50	\$46.50

<sup>1</sup> The unit cost of each cart size is based on a total purchase of 21,000 carts.

<sup>2</sup> The Radio Frequency Identification (RFID) tag price estimate is for the tag on each cart and does not include the cost of the software and miscellaneous fees associated with full implementation of this tracking system.

### City of Lawrence Solid Waste Division workers' compensation costs per Risk Management, October 18, 2010

Workers' Compensation Costs (2005 – 2010)	
Year	Costs
2005	\$116,184
2006	\$418,489
2007	\$132,703
2008	\$419,253
2009	\$52,534
2010 ytd	\$160,125

The yearly average workers' compensation cost from 2005 through 2010 is \$216,548.

## **Staff research, brainstorming meetings, and area facility tours**

### **Expansion of glass recycling options**

On September 10<sup>th</sup>, City staff and City Commissioner Aron Cromwell met with Ripple Glass staff to discuss options for expanding the collection of glass for recycling in Lawrence. One option is to collect glass from residents and businesses through recycling drop off bins placed throughout town. Glass collected would be consolidated in one central point for transportation. This option will be included as an element for consideration as the City Commission and Lawrence community move forward with discussions of the menu of options for solid waste and recycling services.

Ripple Glass expressed interest in working in partnership with the City of Lawrence to transport large quantities of glass from a consolidation point in Lawrence to their facility in Kansas City. Ripple Glass turns recycled glass containers into cullet for a number of local customers, most notably Owens Corning, which uses it to make fiberglass insulation.

### **Brainstorming session with Hamm Waste Services Manager**

In effort to explore options on how recycling would be handled if the City transitioned to a variable rate pricing system with a curbside recycling service option, staff met with Charlie Sedlock, Hamm Waste Services Manager, on October 19<sup>th</sup>. Options include the City collecting the recycling and taking it to a City owned Material Recovery Facility (MRF), a privately owned MRF, or a transfer station. The recycling could also be collected by a private entity and hauled to a MRF or transfer station.

Hamm Waste Services expressed interest in working in partnership with the City of Lawrence to develop a transfer station for single stream or dual stream recycling. Depending on the recycling markets, there would be a fee to drop off recyclables at the transfer station and/or there would be a rebate for the marketable streams of recyclables. Hamm Waste Services also expressed interest in developing a construction and demolition recycling facility.

### **Olathe solid waste and recycling update**

Solid waste is collected in Olathe and transported to Hamm's Landfill through a public / private partnership transfer station. The city currently pays approximately \$30 per ton for solid waste at the transfer point. The transfer station is reaching capacity thus the community must rebuild or expand the transfer station or decrease the amount of waste managed through it. The City of Olathe commissioned a study of alternatives and recommendations from RW Beck. Based on that analysis, in 2010, Olathe moved to a citywide curbside recycling program.

After months of operating a citywide curbside recycling program, the City of Olathe issued a Request for Proposal (RFP) seeking to develop an agreement with a qualified firm to provide processing and marketing of materials generated from their single-stream recycling program, as well as other recycling programs operated by the City. Proposals were due on September 15, 2010 and three vendors submitted proposals. Olathe is in the process of reviewing the proposals and interviewing the vendors.

**City staff toured the following recycling facilities this year:**

- February 27<sup>th</sup> - Town and Country Material Recycling Facility located at 22820 S State Route 291, Harrisonville, MO.
- April 5<sup>th</sup> - GreenPoint Construction and Demolition Recycling Facility located at 1405 SE Madison Street, Topeka, KS.
- April 26<sup>th</sup> - Deffenbaugh Industries Material Recycling Facility located at 2404 S. 88<sup>th</sup> Street, Kansas City, KS.
- August 24<sup>th</sup> - Stutzman Material Recycling Facility located at 315 W Blanchard Avenue, South Hutchison, KS.

**Future planned tours to recycling facilities:**

- December - Columbia's Material Recycling Facility located at 5700 Peabody Road, Columbia, MO