

INTRODUCTION

In 2014, the City of Knoxville Public Service Department continued to show positive results in the development of its solid waste management programs. We continued active enforcement of the solid waste ordinances through the Neighborhood Codes Enforcement field inspections program and completed our fifteenth (15) full year of operations at the Household Hazardous Waste (HHW) Collection Facility. The Public Service Department is in its thirteenth year (13) of providing garbage collection and recycling services in the Central Business Improvement District (CBID) resulting in annual cost savings of approximately \$30,000. In addition, the City has worked tirelessly to refine and continue its household curbside single stream recycling program. This new service started on October 1, 2011 with much fanfare and excitement from City customers. This new service is offered via contractor to residents, with the City providing the service within the CBID. All of these initiatives reflect the Solid Waste Division's progressive thinking and innovative approach in the development of a truly comprehensive solid waste management program.

The following pages summarize our solid waste activities for the calendar year 2014. The final page is a compilation and analysis of residential waste stream data indicating that:

- * The total waste stream decreased by 4,789.42 tons from 2013
- * The diversion rate increased to 58.27% from 58.20% in 2013
- * The recycling rate decreased to 28.14% from 28.73% in 2013

The total waste stream shows an overall decrease from 2013. Household curbside recycling averaged 14.81% during the third full year of operation in 2014.

I. RECYCLING

A total of 1950.29 tons of recyclables were collected at the City's five drop-off recycling centers in 2014. This number decreased in 2014 by 418 tons due to the direct impact of the household curbside single stream recycling program as well as the closure of two drop off center locations as a result of site ownership changes in 2013. It was the intention of the City to close some centers as a result of the curbside recycling program, but the closures in 2013 were not anticipated until a later date. These closures also reflect the City's increasing challenges in securing economical drop center locations at retail "big box" sites within the City. At the same time, Goodwill Industries opened two recycling drop-off centers which in effect took the place of our two closed centers. Goodwill collected 432 tons of recyclables in 2014.

Goodwill Industries is in its final year of a five year contract to assist in the on site staffing of the City's recycling drop off centers. Rock-Tenn Recycling is in year four of a five year contract to handle processing of recyclable materials collected at all drop off centers and for single stream curbside recycling materials. Rock-Tenn made significant capital equipment investments at their Knoxville operation in anticipation of the City's new single stream program and continues to invest in technology supportive of modern recycling processes. Waste Connections of Tennessee, Inc. is in year four of a five year contract to haul recyclable materials from City drop centers and those households participating in curbside recycling. Processing of single stream materials is an added cost to the City; however, Rock-Tenn Recycling continues to revenue share on separated materials collected at the City's five drop centers based on market values which have been low the past four years.

In 2012, the City ended a contract with the Knoxville Recycling Coalition to collect cardboard within the CBID brought to the Market Street Garage by downtown businesses. This contract was phased out and assumed by City collection resources. During 2014, over 180 tons of materials were collected from the downtown area, which represents an increase of 36 tons from 2013.

One major initiative of the Solid Waste Office has been the continued goal towards implementing a new household curbside single stream recycling program. In 2007, the City began seriously examining ways to bring sustainable practices into the way it does business. As part of this process, and at the request of then Mayor Bill Haslam, the Public Service and Policy & Communications Departments initiated a process to evaluate best practices and to consider improvements to the City's existing solid waste management system, specifically recycling. Two key goals of this initiative were for the City to increase both recycling participation and the diversion of recyclable materials from area landfills. A research-based strategy resulting from a Model Cities grant was used to implement the new single-stream, curbside recycling collection service for 20,000 residents. In addition to the Model Cities grant, the City was awarded \$2,012,700 in 2009 for energy savings initiatives through a DOE program. Of the \$2,012,700 award, \$700,000 was designated to assist in the implementation of the new City-wide curbside recycling program and used for the acquisition of needed capital items (carts) from Toter Inc.

The 2011 contracts specified that the new service be provided by City vendors starting October 1, 2011 for up to 20,000 households. The City's Solid Waste Office is excited to announce that it met its goal signing up all 20,000 participants by December of 2011. 2012 was an exciting time for this program as the City fully captured the diversion benefits of 5,198.18 tons of recyclable materials from 20,000 households. In 2014 there was a slight decrease resulting in 5,083.34 tons of recyclable materials collected. During 2014 the City was able to secure another 3,000 carts and began delivering the carts to those residents on the waiting list for a cart. Approximately 1,200 carts have been delivered cleaning up the waiting list and it is anticipated the rest of the carts will be issued in 2015.

II. MUNICIPAL SOLID WASTE (MSW)

A total of 40,442.07 tons of garbage were collected from Knoxville homes in 2014 down from 41,102.19 in 2013, as part of the weekly garbage collection service the City offers via its contractor, Waste Connections of Tennessee, Inc. The City is currently in a five year contract extension with Waste Connections of Tennessee, Inc. that expires in 2016. The extension eliminated a backdoor collection service inequity offered to only some households and now offers subsidized backdoor service only to those with a verified medical or age necessity. Current collection costs per this contract are:

Jan. - Dec. 14 Curbside Collection	\$6.83 / house/month	57,489 residents
Jan. - Dec. 14 Backdoor Collection	\$6.83 / house/month	2,521 residents

All household garbage is disposed of at the Chestnut Ridge Landfill operated by Waste Management. The City is currently in a new 10-year contract with Waste Management that expires in 2020. Contract prices change in October of each year based on the CPI.

Oct. '13 - Sep. '14	\$21.38 / ton
Oct. '14 - Sep. '15	\$21.72 / ton

III. YARD WASTE COLLECTION / MULCHING

A total of 32,692.04 tons of yard waste was collected by City Public Service Department crews in 2014. This number decreased slightly by 1,900.69 tons from 2013 and not a significant change. All yard waste is taken to Shamrock Organic Products where it is recycled into mulch and soil products. The City is currently in a five year contract with Shamrock and recently executed the final extension early based on rate savings to the City. The current contract expires in 2016. Costs for disposal in 2014 at Shamrock are as follows:

IV. SOLID WASTE MANAGEMENT FACILITY

Transfer Station

The design of the Public Service Department, Solid Waste Division Transfer Station encourages separation of C&D from municipal solid waste. This allows for the City to save money by sending C&D waste to a Class III landfill and for compliance with the State of Tennessee mandate for a reduction in the volume of waste placed in Class I landfills. In 2014, we diverted 24,193.73 tons of C&D waste to a Class III landfill (down from 26,476.34 tons in 2013), at a rate of \$16.21 a ton. This amount represented 65% of the waste received at the Transfer Station. The total number of vehicles accessing the numerous services at the facility in 2014 was 53,846, which was a decrease of 3,084 vehicles as compared to 2013 and includes City of Knoxville vehicles. Total revenue from charge and cash customers was \$891,068.64, a decrease of \$32,537.42 from 2013. This decrease is a reflection of a lower C&D debris volume.

Household Hazardous Waste (HHW) Collection Center

Staffed by Public Service Department Solid Waste Management Facility employees, the HHW Facility is operated by the City with equal funding for operating and disposal costs from Knox County and the City of Knoxville. All City and County residents are permitted to use the facility. In 2014, this facility was visited by 5,842 vehicles, a decrease of just 32 from 2013, and processed 142.08 tons of HHW, 73% of which was latex paint.

V. EDUCATION

The Public Service Department Solid Waste Office engaged in many activities and special awareness programs throughout 2014 to educate Knoxville residents and visitors about waste reduction, recycling, composting and other solid waste issues.

America Recycles Day - The City of Knoxville, along with several other local organizations, participated in the twelfth annual America Recycles Day, a national education campaign aimed at increasing citizens' commitment to recycling and buying recycled goods.

Earth Day - The Solid Waste Office helped develop this program fourteen years ago and once again played an active role on the steering committee that developed EarthFest 2014, which celebrated the 40th anniversary of Earth Day at World's Fair Park in Downtown Knoxville. Over 10,000 people attended the event which hosted 100 + exhibitors from the region's environmental community.

Computer Collection Events – One E-cycle collection event was held in January 2014 with ten sponsors contributing to the success of the event. Approximately 300 residents participated in the events with over 17 tons of electronic materials collected. All material collected at the event was recycled at Creative Recycling, Nashville, TN.

Used Residential Thermometer Exchange - The Solid Waste Office started an ongoing mercury thermometer exchange program in 2005. The exchanges, conducted in cooperation with the Tennessee Department of Environment and Conservation, the City of Knoxville Public Service Department and the Safe Kids Coalition of the Greater Knox Area, collected 50 mercury thermometers from City and County residents in 2014. New digital thermometers were given out for each used mercury thermometer that was turned in.

Unwanted Medicines Collection Event - The Solid Waste Office coordinated several unwanted medicines collection events in cooperation with the Knoxville Police Department, Knox County Solid Waste Office and Health Department and The University of Tennessee Student Pharmacy Association. This program was initiated by the City in November of 2008 and has grown rapidly since its inception. Over 3,756 pounds of medications were collected during 2014 and properly disposed of by the KPD and just over 10 tons since 2008. It is estimated that just over 462 pounds of that total were controlled substances. KPD maintains a permanent secure medications collection container at the KPD safety building with access for the public 24/7.

Other - In 2014, the Solid Waste Office continued to produce and distribute educational brochures and promotional items. Staff of the Solid Waste Office participated in several educational events in 2014 using our exhibit booth display at the City County Building and at events including EarthFest, the Dogwood Arts' House and Garden Show, Parenting Expo and, America Recycles Day Events.

CONCLUSION

The 2014 year has been both an exciting and challenging time for solid waste within the City of Knoxville. The advent of the City's new household curbside single stream recycling program completed its third full year as result of many years of planning and research and the start of this program timed well with current advances in recycling technology, federal stimulus dollars and the Model Cities research grant. As we transition into the 2015 calendar year, the Public Service Department Solid Waste team is focused on providing great services with a focus on both environmental and fiscal responsibility.

More information on the City's Public Service Department, Solid Waste Division and Sustainability Office can be found at the City's website at: <http://www.knoxvilletn.gov/>.

Annual Report 2014	Goodwill Magnolia & Alice	Goodwill 225 Moody Av.	Kroger 4440 Western Av.	Goodwill 341 Parkvillage	Downtown 227 Willow Av.	Drop Off Center Totals	Curbside Recycling City Wide Totals	Totals
Drop Off Centers								
Aluminum	3200 lbs	7448 lbs	2920 lbs	30140 lbs	3000 lbs	46708.00 lbs	52406 lbs	49.56 tons
Steel	7060 lbs	11373 lbs	6460 lbs	31710 lbs	6120 lbs	62723.00 lbs	157218 lbs	109.97 tons
Plastics	58560 lbs	87780 lbs	62880 lbs	302980 lbs	38960 lbs	551160.00 lbs	681273 lbs	616.22 tons
Clear Glass	12707 lbs	35022 lbs	25347 lbs	103334 lbs	20700 lbs	197110.65 lbs	471651 lbs	334.38 tons
Brown Glass	12706 lbs	35022 lbs	25348 lbs	103334 lbs	20700 lbs	197109.65 lbs	471651 lbs	334.38 tons
Green Glass	12706 lbs	35021 lbs	25347 lbs	103152 lbs	20700 lbs	196926.33 lbs	471651 lbs	334.29 tons
Newspaper	76420 lbs	97780 lbs	67240 lbs	394100 lbs	38260 lbs	673800.00 lbs	3144330 lbs	1909.07 tons
Mixed Paper	123860 lbs	181160 lbs	135000 lbs	698350 lbs	138920 lbs	1277290.00 lbs	3144330 lbs	2210.81 tons
Cardboard	91420 lbs	88060 lbs	96160 lbs	321720 lbs	100387 lbs	697747.00 lbs	1572165 lbs	1134.96 tons
Drop Off Center Totals	199.32 tons	289.33 tons	223.35 tons	1,044.41 tons	193.87 tons	1,950.29 tons	5,083.34 tons	7,033.62 tons

KPD / Lorain St.	40.31 tons
Cardboard Down Town	157.22 tons
Downtown Curbside	180.48 tons

Goodwill Lease Containers	432.66 tons
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	Leaves	Brush	Total
Mulching Site	6088.30 tons	26603.74 tons	32692.04 tons

	Scrap Metal	Rec. Tlr.	HHW REC.	HHW Divert.	C&D for Class III	Compacted	Computers	Tires	Total
Transfer Station	189.39 tons	6.54 tons	32.64 tons	2.68 tons	24193.73 tons	9800.38 tons	29.97 tons	127.21 tons	34,382.54 tons

	Household Trash	Misc. Trash	Total
Landfill Class I	40442.07 tons	647.90 tons	50,890.35 tons

	Transfer Station	Construction	Codes	Total
Landfill Class III	24193.73 tons	14246.46 tons	5375.76 tons	43,815.95 tons

Total Waste Recycled	40,922.08 tons	Recycling	28.14%
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Total Waste Diverted, Class III & Rec.	84,740.71 tons	Diversion	58.27%
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Total Waste Landfilled, Class I	60,690.73 tons	* Recycling	7.30%
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Total Wastestream	145,431.44 tons	* Yard Waste Not Included w/ just residential trash	14.81%
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