



Wicomico County, Maryland

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Internal Auditor's Report

The County Council and County Executive of Wicomico County, Maryland:

Pursuant to Section 305(D) of the Wicomico County Code and Council Resolution No. 106-2013, the Office of the Internal Auditor (IA) has conducted an operational audit of the Wicomico County Department of Public Works Solid Waste Division commodities including recyclables. A report is submitted herewith. The purpose of the audit was to determine the adequacy of procedures and controls along with the level of compliance with those procedures and controls for the process managing commodities including recyclables at the County Landfill.

IA conducted the audit with due professional care, and IA planned and performed the audit to obtain reasonable assurance about whether the current management practices are in compliance with applicable policies and procedures and whether those policies and procedures are adequate to obtain an acceptable level of control. The audit revealed a robust system for handling commodities including recyclables. Additionally, Solid Waste upper management is in the process of investigating new technologies to improve waste disposal and recycling for Wicomico County. IA identifies several findings in subsequent sections of this report that warrant discussion.

IA extends our appreciation to Management and Staff of Wicomico Public Works Solid Waste Division for their timely assistance, cooperation, and candid assessment of their recycling management system.

Respectfully submitted,

J. Stephen Roser, CPA
Internal Auditor

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Audit Report

Background

Solid Waste Division is a county managed enterprise¹ charged with disposal of residential and commercial refuse along with recycling for Wicomico County. Solid Waste maintains the Newland Park Landfill and numerous associated transfer stations (convenience centers) and recycling centers. Additionally, Solid Waste performs ancillary projects related to dredge site and road site preparation. The Maryland Department of the Environment (MDE), Land Management Administration, Waste Diversion and Utilization Program enforces the Maryland Recycling Act (MRA) Guidelines. The MRA issues a diversion rate for each Maryland county and Baltimore City. Each county calculates its diversion rate by dividing the total tons of material recycled by the total tons of all types of material disposed in the county. According to Solid Waste management, the current required rate for Wicomico County is 20%. The Wicomico County reported diversion rate for calendar year 2013 was 38% exceeding the mandate by 18%.

Wicomico County recycles the following materials:

Electronics and Appliances	Paper
Glass	Methane Gas ²
Cardboard	Bulk Metal
Plastic	Yard Waste (Mulch)
Aluminum	Oyster Shells
Bimetal Cans	

Audit Objectives

The objectives of the audit were to determine commodities produced by Wicomico County; map recordkeeping (accounting) for commodity sales; evaluate internal control over handling of cash from commodity sales; and assure adherence to internal controls.

Scope of the Audit

The audit periods examined on a test basis were calendar years 2011 to 2013. The Scope was open ended. Observations and Inquiries with appropriate personnel were conducted, as well as examination of various documents pertaining to the following:

- Map processes for the collection and sale of commodities
- Inspect collection and storage facilities
- Inspect sample documentation (invoices, sales slips, purchase slips, bank reconciliations, deposits, etc.)
- Review and evaluate bookkeeping methods, records, software, etc.

¹ An enterprise is a government run entity that books accounts separately from other government accounts (general fund) similar to for-profit business accounting. Although not always realized, the goal is to generate enough revenue to pay expenses without taxpayer funding.

² The county landfill captures methane gas generated by buried trash via a system of wells and converts it to electricity. For more information on methane gas please see Solid Waste Cash Management Audit Report (dated August 15, 2013)

General Highlights and Statistics

Pricing

The county, through the Purchasing Department, takes bids for most materials quarterly. Mulch is sold directly to the public and to businesses. The practice of quarterly bidding began in fiscal year 2009. In the past Solid Waste would occasionally stockpile recycled goods in order to hold out for better pricing. Since trending for prices is negative, quarterly bidding seems to fit the current needs of the county. IA obtained historical pricing beginning in March 2011:

Bid Date	Per Pound				Per Ton			
	PET (Plastic Bottles)	HDPE Natural (Plastic Containers)	HDPE Color (Plastic Containers)	Aluminum Cans	Bimetal Cans	Bulk Metal	Cardboard	Newspaper
03/24/11	\$ 0.3475	\$ 0.3900	\$ 0.3100	\$ 0.8850	\$ 330.00	\$ 224.00	\$ 157.50	\$ 160.00
04/01/12	\$ 0.2611	\$ 0.3750	\$ 0.3125	\$ 0.7200	\$ 325.00	\$ 266.20	\$ 152.50	\$ 75.00
03/01/13	\$ 0.1800	\$ 0.3200	\$ 0.2750	\$ 0.7550	\$ 215.00	\$ 260.00	\$ 120.00	N/A
04/17/13	\$ 0.1950	\$ 0.4000	\$ 0.2625	\$ 0.6400	\$ 235.00	\$ 240.00	\$ 107.00	\$ 57.00
12/04/13	\$ 0.1425	\$ 0.3790	\$ 0.2729	\$ 0.6000	\$ 250.00	\$ 240.00	\$ 105.00	\$ 72.00
04/17/14	\$ 0.1950	\$ 0.4000	\$ 0.2625	\$ 0.6400	\$ 235.00	\$ 240.00	\$ 107.00	\$ 57.00

IA calculated changes in pricing from 3/24/2011 to 4/17/2014 for selected commodities as follows:

	Aluminum Cans	Cardboard	Glass ³	Bulk Metal	Newspaper	Plastic Bottles	Bimetal Cans
Change in price 2011-2014	-28%	-32%	0%	7%	-64%	-44%	-29%

We see a significant decrease in prices over the period with the exception of a slight increase for bulk metal.

Volume

The other piece of the commodity revenue equation for the landfill is volume. Tonnage transferred out according to county records for calendar years 2011 to 2013 is as follows:

Calendar Year	Aluminum Cans	Cardboard	Glass	Bulk Metal	Newspaper	Plastic	Bimetal Cans	Total
2011	16.81	351.01	435.80	384.79	1,058.29	119.63	21.99	2,388.32
2012	-	586.63	273.02	150.02	513.52	87.96	22.25	1,633.40
2013	35.17	623.53	225.51	947.08	696.78	129.11	47.93	2,705.11
							Total	6,726.83

IA calculated the change in tonnage over the period as a percentage:

Calendar Year	Aluminum Cans	Cardboard	Glass	Bulk Metal	Newspaper	Plastic Bottles	Bimetal Cans
Change in volume 2011-2013	109%	78%	-48%	146%	-34%	8%	118%

³ Please note that the county received no bids for glass over the period

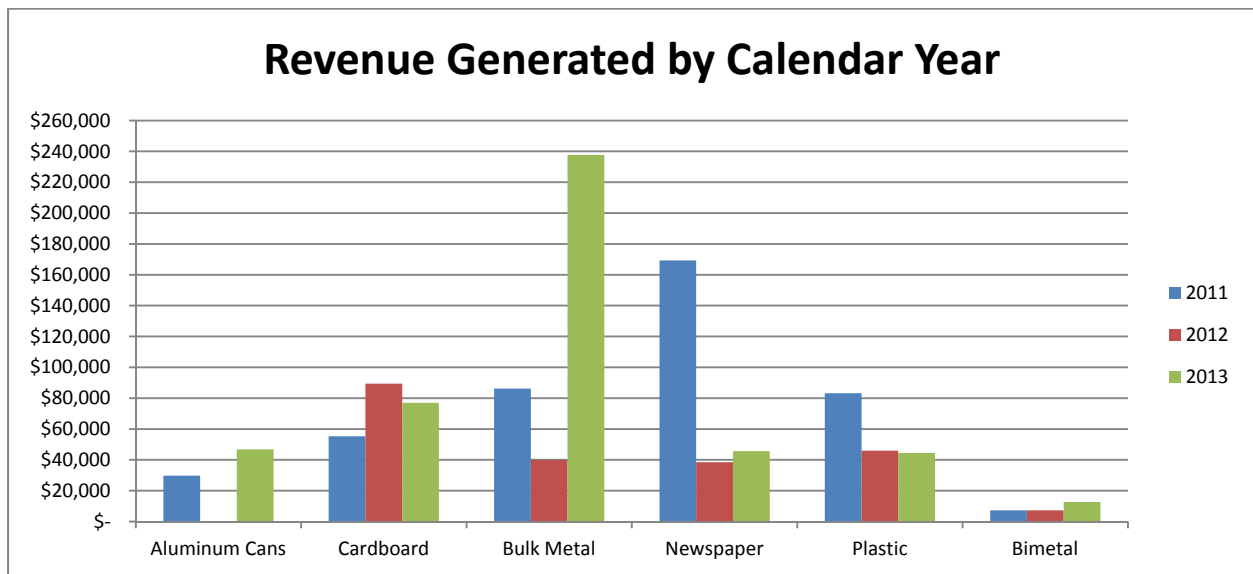
This chart shows significant increase in volume over the period with the exception of a decrease in newspaper volume and little change for plastic bottles. As mentioned in a prior footnote, the county has not obtained any bids for glass.

Revenue

We compiled the revenue figures from county records for calendar years 2011 to 2013 for selected commodities:

Calendar Year	Aluminum Cans	Cardboard	Bulk Metal	Newspaper	Plastic	Bimetal Cans	Total
2011	\$ 29,754	\$ 55,284	\$ 86,193	\$ 169,326	\$ 83,143	\$ 7,257	\$ 430,957
2012	\$ -	\$ 89,461	\$ 39,935	\$ 38,514	\$ 45,933	\$ 7,231	\$ 221,074
2013	\$ 46,776	\$ 76,937	\$ 237,675	\$ 45,639	\$ 44,543	\$ 12,675	\$ 464,245
Total	\$ 76,530	\$ 221,682	\$ 363,803	\$ 253,479	\$ 173,619	\$ 27,163	\$ 1,116,276

Additionally, IA compiled a graphical representation of revenue by selected commodities for the calendar years 2011 to 2013:



Cans (both aluminum and bimetal) are dwarfed by other commodities on the chart as a source of revenue for the Landfill. Newspaper and plastic revenue fell off significantly from 2011 levels due to falling prices. Additionally, bulk metal led the way for calendar year 2013 mainly due to a massive cleanup effort at Public Works that led to the elimination (recycling) of a vast accumulation of obsolete parts and equipment that were unsuitable for auction coupled with increased pricing for metal.

Conclusion

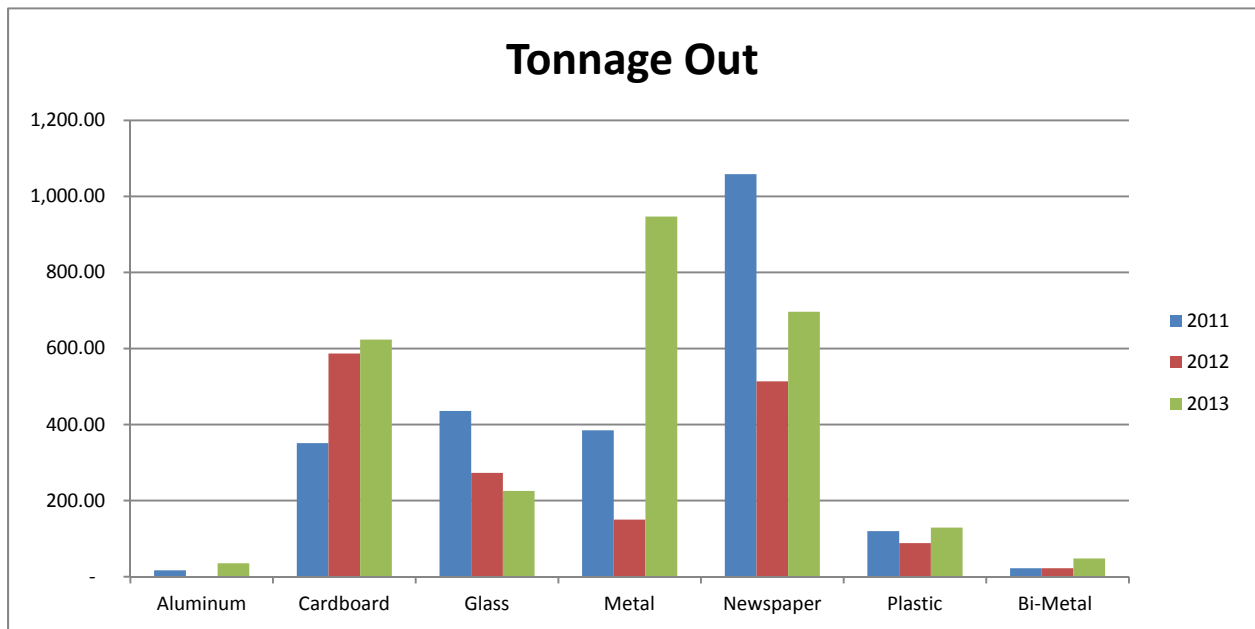
Based upon evidence gathered along with observations and interviews, we determine that recordkeeping (accounting) for commodity sales, internal control over handling of cash from commodity sales and adherence to internal controls are at levels satisfactory⁴ to their stated purposes.

Schedule of Findings and Recommendations/Management Response

The findings listed below represent some key issues that warrant discussion as an added feature to the audit process. The audit revealed no evidence of material weakness or significant deficiency in the areas tested. These findings are both positive and negative and do not rise to the level of concern that material weakness or significant deficiency would garner.

Tonnage Trend Analysis

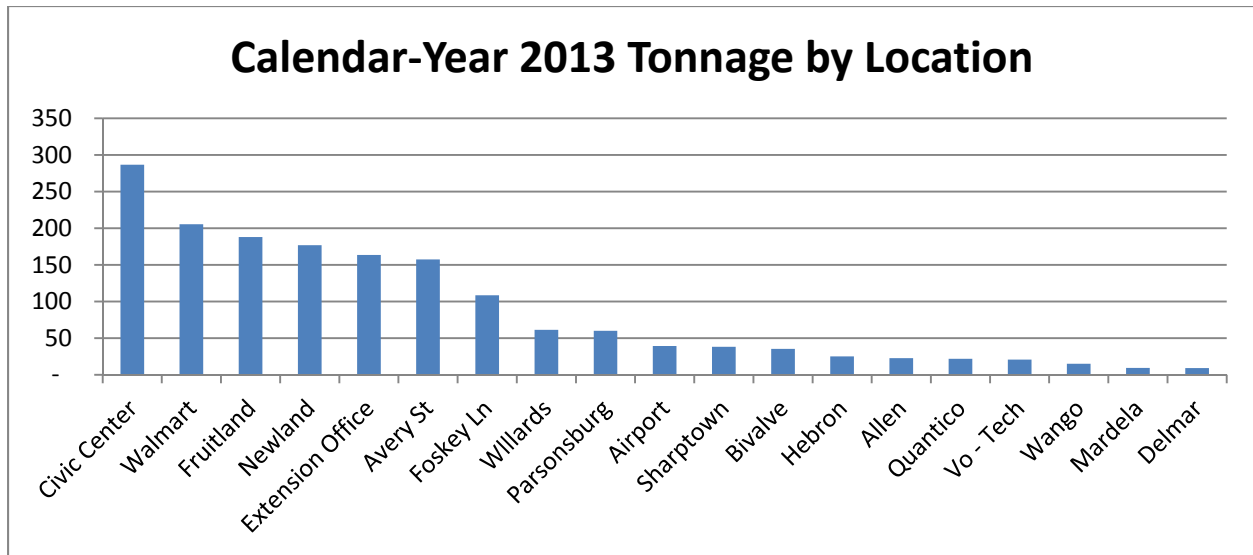
According to Landfill records, the average annual tonnage out of the landfill for aluminum and bimetals cans, cardboard, newspaper, plastic, glass and bulk metal was 2,242 tons over the three-year period beginning January 1, 2011. The data for the three full calendar years under review does not show a discernible trend. That is, total tonnage remains relatively flat overall. Graphical analysis of tonnage out by selected category is as follows:



The graph shows a steady increase for cardboard, decrease for glass, and a 2013 spike in bulk metal tonnage caused by the aforementioned Public Works project to eliminate obsolete equipment.

⁴ For the purposes of this audit, IA uses a three-tier grading system recommended by the International Professional Practices Framework (IPPF) as expressed by the IPPF Practice Guide issued March 2009. The three tiers are Inadequate System of Internal Control, Adequate System of Internal Control, and Satisfactory System of Internal Control. Satisfactory findings indicate that overall controls are satisfactory, although some enhancements may be recommended. It is the highest rating on the scale.

Additionally, we evaluated the calendar-year 2013 tonnage for the Convenience Centers:



Delmar, Mardela, and Wango showed little activity while the Civic Center and Wal-Mart locations lead the way.

Inventory

Although Solid Waste maintains an inventory of commodities awaiting disposition, they maintain no formal recorded perpetual inventory. IA reviewed several reasons for not maintaining an inventory with management:

- The sorting process separates foreign material from the recyclables that must be sent to the landfill
- It is extremely difficult to estimate the weight of products stockpiled awaiting the bailing process
- The cost of maintaining a perpetual inventory requires additional personnel and likely outweighs the benefit

During the walkthrough, management took an informal count of bailed commodities. IA calculated the value of the recyclables (excluding bulk metal) at \$50,756. Public Works secures the storage area with a security fence and motion cameras. IA agrees that the cost of maintaining a perpetual inventory under current conditions likely outweighs the benefits.

MDE Considerations

As mentioned in the Background section of this report, the Maryland Department of the Environment (MDE), through its waste division bureaucratic subsidiaries, governs Solid Waste in Maryland. It issues a publication entitled “Maryland Solid Waste Management and Diversion Report”⁵ annually. IA reviewed the 2013 report that is based on calendar-year 2012 data. The 49-page report describes, in detail, the types, and amounts of waste in the state of Maryland along with comments on the state of the industry and environmental issues including climate change.

Additionally, the MDE issued its Tonnage Reporting Survey Guidelines (designed for landfill and similar operations) for calendar year 2013 on February 18, 2014. The 17-page document clearly outlines the procedures for filling out

⁵ The publication may be found on the web:
[http://www.mde.state.md.us/programs/Land/RecyclingandOperationsprogram/StateAgencyRecycling/Documents/'11%20MS WMDR.pdf](http://www.mde.state.md.us/programs/Land/RecyclingandOperationsprogram/StateAgencyRecycling/Documents/'11%20MS%20WMDR.pdf)

a required 5-page report. The report calculates the diversion rate for the county. MDE clearly outlines the types of materials eligible for recycling by categories. Additionally, it provides guidelines for single-stream recycling⁶ and other considerations. Wicomico County must report all material recycled in the county whether it occurs at the landfill or elsewhere. Management provided IA with a list of approximately 100 county businesses that potentially recycle their own commodities. Maryland State law requires the businesses to report each year. There is no evidence of any auditing or other obvious formal accountability and the county must depend upon outside businesses' accurate reporting to calculate the county diversion rate.

Software

The Landfill employs a software program to measure the tonnage and perform billing for the landfill. Readings come directly from the scale house to a single computer located in the Landfill office. IA observed the month-end closing process and found it to be satisfactory. We suggest, however, that management may want to have Internet Technology provide the computer in the accounting office access to the data to boost internal control.

Management Response

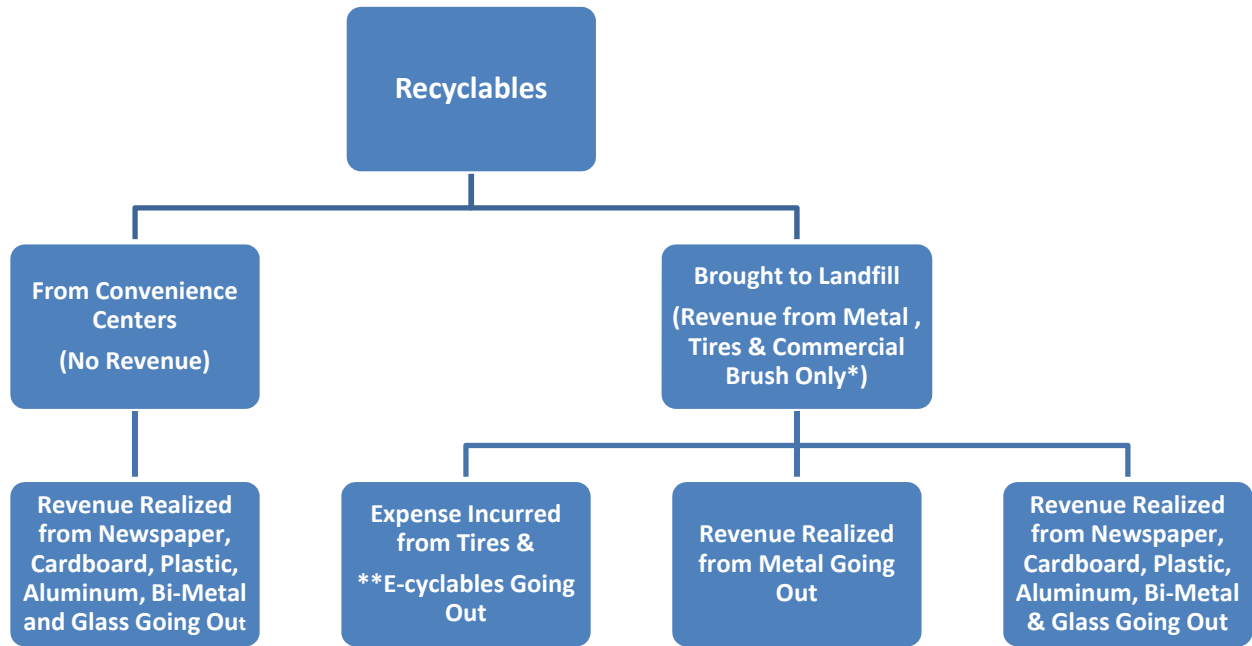
As outlined by this report, the current method of recyclable processing by Solid Waste has a limited future with commodity prices continuing to decline. Management has investigated solutions that will continue to provide a cost effective recycling program to County residents while meeting the State of Maryland recycling requirements. To that end, Public Works is developing a plan to outsource the existing processing operation so recyclables can be collected comingled or "single stream" then sent to a processing facility capable of handling comingled material. Outsourcing the processing operation will reduce staff and inmate labor needed down to 1.5 Full Time Equivalent (FTE) employees from 4 FTE and 10 inmates. Additional savings come from operation and maintenance costs of in-house processing equipment that will be taken off line. The business plan will be presented to County Council in the next few months.

Auditor's Closing Remark

The Wicomico County Office of the Internal Auditor would like to thank management and staff from Wicomico County Department of Public Works Solid Waste Division for their timely cooperation and assistance during the audit. Special thanks go to Solid Waste recycling management and personnel for their prompt attention to requests for information and their availability.

⁶ According to Bill Chameides, Dean of Duke University's Nicholas School of the Environment, single-stream recycling does not require separation by consumers or the landfill. It is shipped in bulk to a facility designed to automate separation. Proponents claim that it encourages more recycling and cuts costs.

Appendix I – Wicomico County Solid Waste Recycling Flow Chart⁷



*Metal from residents without a permit = \$60/ton

*Tires = \$2 on rim, \$5 off rim, \$20 if left on landfill

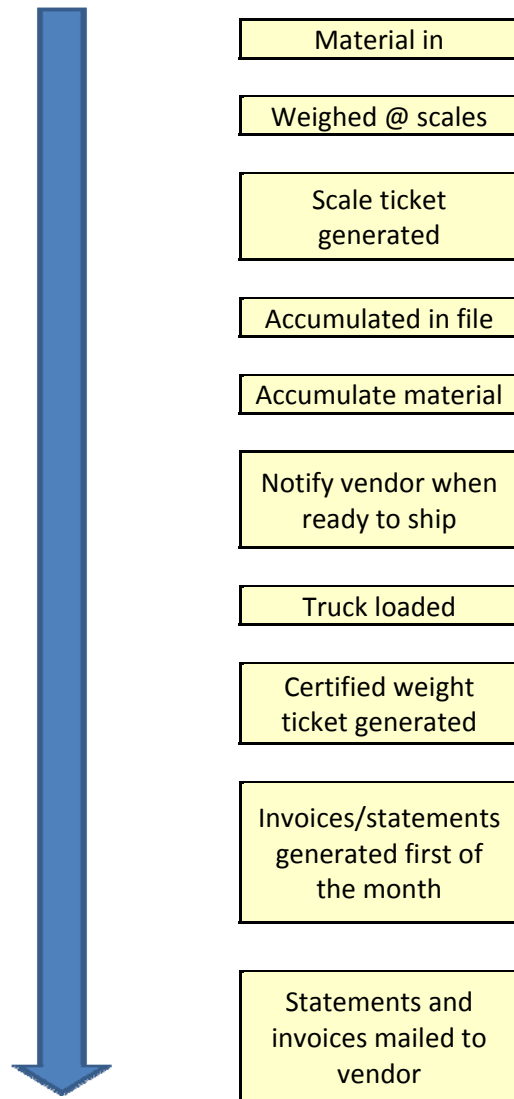
*Commercial brush = \$30/ton

**E-cyclables = electronics: televisions, monitors, computers, etc.

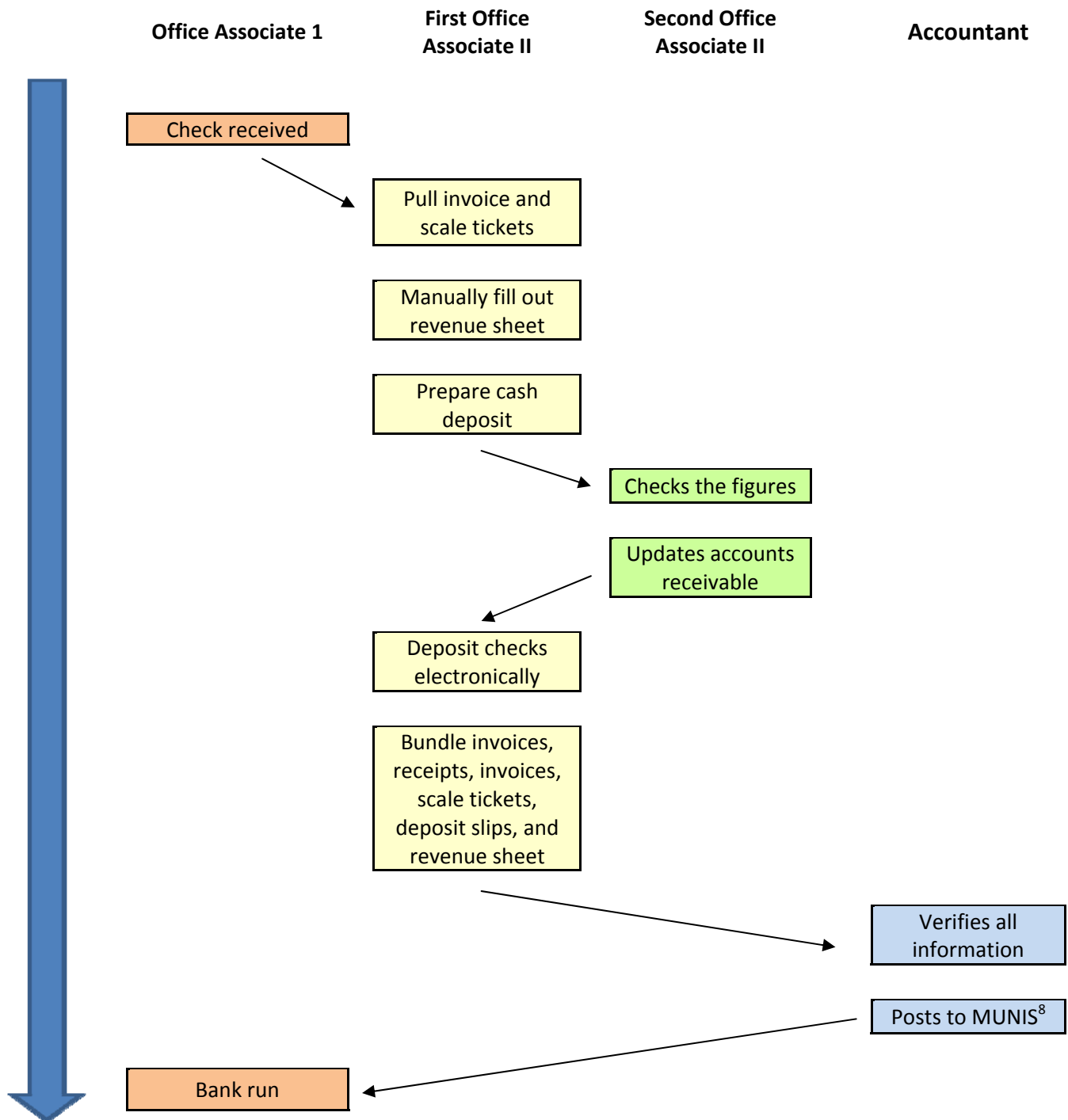
Note: no tires or e-cyclables accepted at Convenience Centers

⁷ Prepared by Solid Waste accounting (slightly modified)

Appendix II – Sales Process Flow Chart



Appendix III – Cash Flow Chart



⁸ MUNIS is an acronym for the accounting software employed by the county