



2017 - 2018 Jefferson County Litter Health Impact Assessment



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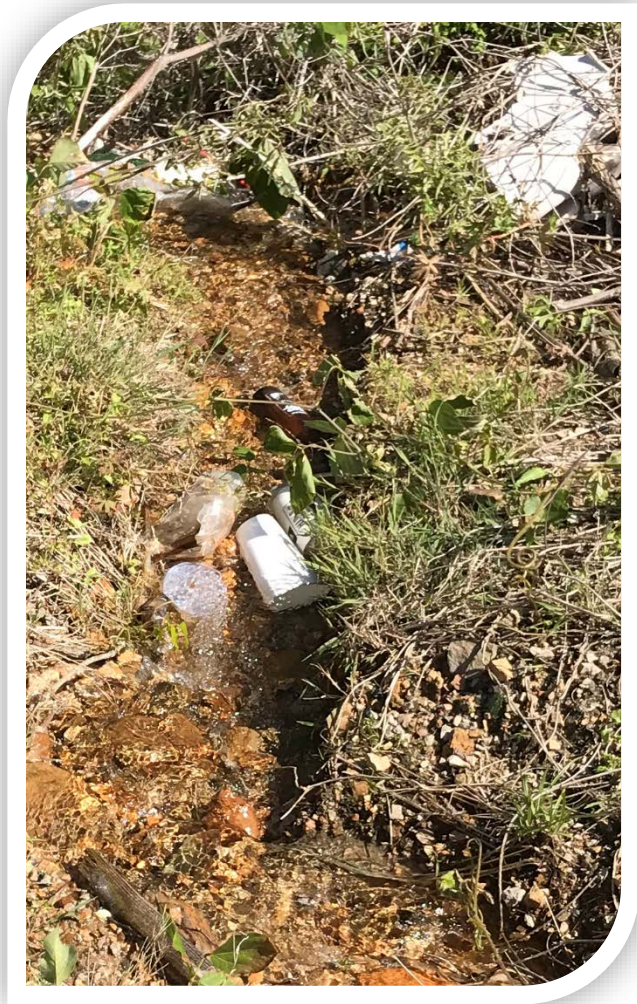
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SCREENING AND SCOPING

“When environments are untidy, the health department is usually blamed, even though policing the environment may not be its responsibility.” This quote from Mr. Homer Calver, one of the founders of Keep America Beautiful, Inc., and a former secretary of the American Public Health Association, was published in the *Journal of Public Health* dated May 1959.

In response to the problem of roadside litter in Jefferson County, the Environmental Quality Committee formed under the Jefferson County Health Action Partnership and began working to promote environmental stewardship. One of the Committee’s endeavors was to bring awareness to the blight of litter in the County. The Committee elected to address this environmental concern through removal efforts, education, and promotion of recycling.



For initial assessment in 2006, litter was collected at twenty-six (26) sites along roads dispersed throughout the county and maintained by the Jefferson County Roads and Transportation Division, plus two sites located within the city limits of Birmingham and one site along the I-20/59 interstate. In 2011, the survey was repeated using the original twenty-six (26) sites, plus one additional site within the county and two sites within Birmingham City limits.

For this survey, the Community Assessment Division of Environmental Health Services at the Jefferson County Department of Health (JCDH) collected litter along a total of thirty-two (32) roadways in Jefferson County. The sites selected were located in municipalities that have current National Pollution Discharge Elimination System (NPDES) Stormwater permits issued by Alabama Department of Environmental Management (ADEM) and the United States Environmental Protection Agency’s (EPA) Title 40 Code of Federal Regulations Part 122, and are under contract for stormwater management with the Watershed Protection Program at JCDH. Each municipality provides roadway maintenance for their respective sites.

ASSESSMENT

- Research methodology adapted from other studies, specifically the 2004 Ohio Statewide Litter Study conducted by Davey Resource Group for the State of Ohio Conservation and Resource Department
- Evaluate possible sites for collection
- Select sites and map
- Devise strategy for collection
- Research equipment and purchase
- Enlist personnel
- Collect litter samples
- Evaluate composition
- Record data
- Prepare detailed report
- Evaluate results
- Provide recommendations



ASSESSMENT

SITE EVALUATION

- Thirty-two (32) sites were selected in municipalities with current stormwater permits.
- Each municipality submitted possible roadways for collection, and each roadway was evaluated using a matrix for location, shoulder width, traffic speed, and litter volume. Two (2) sites were selected for each municipality based on scores from this matrix. (The city of Brookside did not submit any suggestions. Sites were selected for this city by observed litter volume.)
- Site location, a street map for each site, and data recording sheets were created and maintained for each site.
- Wherever possible, sample sites were marked 500 feet along both sides of the roadway. The sampling depth was ten (10) feet if possible. In several instances, 1000 feet of roadway was marked along one side. Sampling depth remained at ten (10) feet. Anomalies are noted on the data recording sheets for individual sites.
- Global Positioning System (GPS) latitude and longitude readings were determined with the “My GPS Coordinates” application for Apple iPhone on a JCDH-issued cell phone. This facilitated the plotting of locations on a map using Geographic Information Systems (GIS) technology software by Environmental Systems Research Institute (ESRI).

COLLECTION

- Litter was collected by JCDH employees.
- Bags were tagged with pre-printed labels and returned to JCDH for weighing, sorting, and counting.
- Each bag was weighed (exceptions are noted in data charts) and the weight recorded on labels and data recording sheets.
- Items were sorted into nine (9) main categories, then further sorted into sub-categories.
- The number of items in each category and sub-category was recorded.
- Cigarette butts (including cigarillo/little cigar butts) were counted on site with hand-held counters, but were not collected.
- Plastic bottles and metal cans were delivered to the Alabama Environmental Council (AEC) Recycling Center after processing. (Glass is not currently accepted.)

DATA

- Data was compiled and input into Excel spreadsheets
- GPS readings were input and a map of site locations using MyMaps.US website. For detailed map information, see the following link:
<https://mymaps.us/?map=5b4f49e149dac03610731593dc8b> .

REPORTING

See Appendix for Data and Graphs

HIGHLIGHTS

- A total of 325,500 square feet of roadway was sampled
- A total of 6.01 linear miles of roadway was sampled
- The total weight of litter collected was 332 pounds
- The calculated average weight of litter collected was 55 pounds per linear mile
- The total number of items collected was 5,325
- The calculated average number of items collected was 886 per linear mile
- The total number of cigarette butts counted was 9,199
- The calculated average number of cigarette butts counted was 1531 per linear mile
- For individual category results see Appendix



RECOMMENDATIONS

In order to address the ongoing litter problem within Jefferson County, cooperative efforts must be initiated by both governmental and private agencies. Analysis of the results reveals that most of the litter collected was related to fast food consumption or convenience store purchases (68%). Citizens must become aware of the detrimental effects of litter on the environment and the economy. Individual responsibility would be an effective deterrent to the accumulation of roadside litter. If citizens do not exercise this type of responsibility, other means of deterrence must be implemented. These measures may include:



- Public Service Announcements (PSAs) for litter prevention using various media and social media outlets
- Legislation regarding fees for food purchased at fast food restaurants and convenience stores
- More stringent enforcement of existing ordinances
- Increased public work time used for clean-up efforts
- Local public education efforts
- Assign-a-RoadSide Programs
- Bottle deposit legislation

JEFFERSON COUNTY 2017-2018 LITTER SURVEY DATA OVERVIEW

2017-2018	
Square footage (ft ²)	325,500
Linear miles	6.01
Total weight (lbs)	332
Avg weight per mile (lbs)	55
Total # of items	5,325
Avg # of items per mile	886
Total # of cigarette butts	9,199
Avg # of cigarette butts per mile	1531
Food and beverage packaging (%)	68



JEFFERSON COUNTY 2011 LITTER SURVEY DATA & SUMMARY

COLLECTION

- Twenty-nine (29) sites along roads in Jefferson County were sampled
- Litter from each site was bagged and labeled
- Litter was sorted into nine (9) main categories and each category was weighed
- Items were then sorted into sub-categories, then counted and the number recorded
- Aluminum cans, plastic bottles, and glass items were delivered to the AEC for recycling



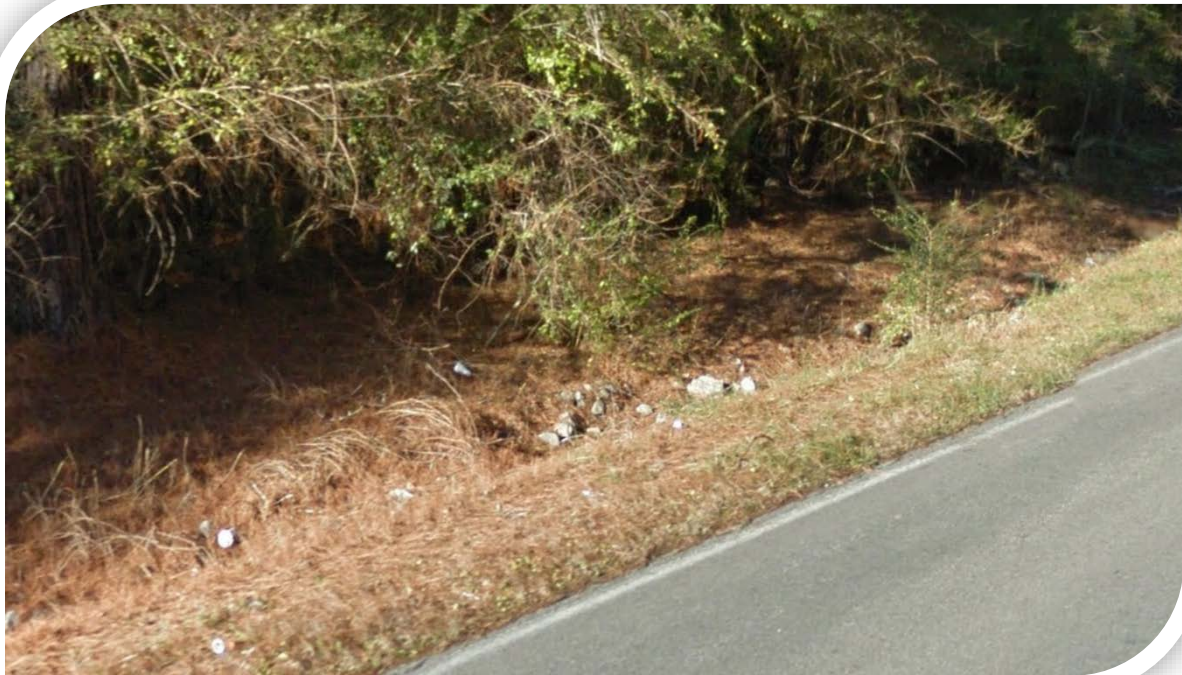
DATA & RESULTS

- A total of 351,225 square feet of roadway was sampled
- A total of 6.14 linear miles of roadway was sampled
- The total weight of litter collected was 766 pounds
- The calculated average weight of litter collected was 125 pounds per linear mile
- The total number of items collected was 6,116
- The calculated average number of items collected was 996 per linear mile
- 2,191,200 items would be collected from county maintained roadways in a single visit based on survey data
- The total number of cigarette butts counted was 8,648
- The calculated average number of cigarette butts counted was 1,408 per linear mile
- Seventy-eight percent (78%) of litter collected was food or beverage packaging

JEFFERSON COUNTY 2006 LITTER SURVEY DATA & SUMMARY

COLLECTION

- Twenty-nine (29) sites along roads in Jefferson County were sampled
- Litter from each site was bagged and labeled
- Litter was sorted into nine (9) main categories and each category was weighed
- Items were then sorted into sub-categories, then counted and the number recorded
- Aluminum cans, plastic bottles, and glass items were delivered to the AEC for recycling



DATA & RESULTS

- A total of 351,225 square feet of roadway was sampled
- A total of 6.14 linear miles of roadway was sampled
- The total weight of litter collected was 720 pounds
- The calculated average weight of litter collected was 117 pounds per linear mile
- The total number of items collected was 6,824
- The calculated average number of items collected was 1,137 per linear mile
- 2,501,400 items would be collected from county maintained roadways in a single visit based on survey data
- The total number of cigarette butts counted was 12,098
- The calculated average number of cigarette butts counted was 2,016 per linear mile
- Seventy-eight percent (78%) of litter collected was food or beverage packaging

JEFFERSON COUNTY 2006 & 2011 LITTER SURVEY DATA COMPARISON

	2011	2006
Square footage (ft ²)	351,225	351,225
Linear miles	6.14	6.14
Total weight (lbs)	766	720
Avg weight per mile (lbs)	125	117
Total # of items	6,116	6,824
Avg # of items per mile	996	1,137
Total # of cigarette butts	8,648	12,098
Avg # of cigarette butts per mile	1,408	2,016
Food and beverage packaging (%)	78	78



ANALYSIS

The 2006 and 2011, Litter Surveys were conducted predominately on Jefferson County roads that were maintained by the Jefferson County Public Works Department. Two of the roads surveyed were maintained by the City of Birmingham, and one was a portion of I-20/59 Southbound which was maintained by Sweeping Corporation of America. The 2006 and 2011 studies were conducted in partnership with the Environmental Protection Department of the Jefferson County Commission.

The 2017-2018 Litter Study was conducted on municipally maintained roads. This litter study used the same collection and analysis protocol as the earlier studies and will be utilized as a baseline for subsequent studies of the selected roads. Results will help the municipalities determine interventions and evidence based strategies to reduce roadway litter. Preventing litter on roadways helps protect adjacent waterways, save road maintenance costs, and preserve community property values.



Figure 1

ROADWAY DECISION MATRIX

Municipality Options: Suggested Sites		Location	Shoulder Width	Traffic Speed	Observed Litter Volume	Total
		25%	35%	15%	25%	100%
	Raw					
	Wt	0.25	0.35	0.15	0.25	1
Comments:						
	Raw					
	Wt	0.25	0.35	0.15	0.25	1
Comments:						
	Raw					
	Wt	0.25	0.35	0.15	0.25	1
Comments:						
	Raw					
	Wt	0.25	0.35	0.15	0.25	1
Comments:						
	Raw					
	Wt	0.25	0.35	0.15	0.25	1
Comments:						
	Raw					
	Wt	0.25	0.35	0.15	0.25	1
Comments:						
	Raw					
	Wt	0.25	0.35	0.15	0.25	1
Comments:						
	Raw					
	Wt	0.25	0.35	0.15	0.25	1
Comments:						

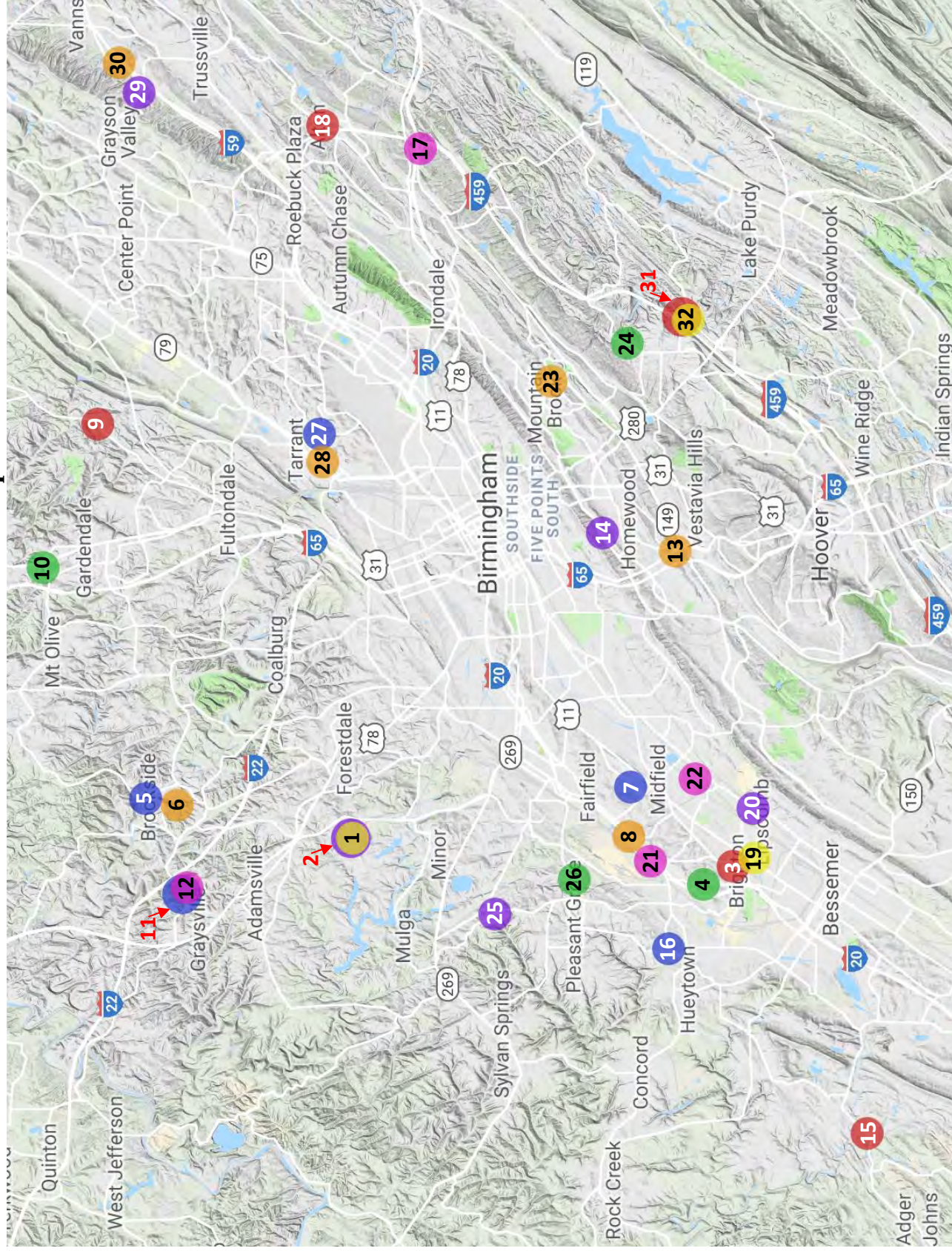
Litter Collection Sites

Table 1

Site #	Main Road	Cross Road	Municipality	Latitude	Longitude
1	Oakwood Dr	Poplar Lane	Adamsville	33.567655	-86.933100
2	Poplar Lane	Oakwood Dr	Adamsville	33.567345	-86.933245
3	Huntsville Ave	Lewis St	Brighton	33.435643	-86.945225
4	Jaybird Rd	Edwards St	Brighton	33.445532	-86.952855
5	Market St	Main St	Brookside	33.638904	-86.916909
6	Mississippi St	Bivens-Brookside Rd	Brookside	33.627923	-86.919670
7	MLK Blvd	66th Place	Fairfield	33.470740	-86.911836
8	Valley Rd	Polymer Coil Coaters, 7001 Valley Rd	Fairfield	33.471509	-86.932905
9	New Castle Rd	Willow Dr	Gardendale	33.655158	-86.761384
10	Mt Olive Blvd	Hwy 31	Gardendale	33.673915	-86.820584
11	1st Ave SE	Glasgow Hollow Rd	Graysville	33.625998	-86.956722
12	Glasgow Hollow Rd	1st Ave SE & Cherry Ave	Graysville	33.624216	-86.954226
13	Greensprings Hwy	Columbiana Rd	Homewood	33.455718	-86.814298
14	Valley Ave	Elder Oaks Way	Homewood	33.480920	-86.806508
15	Johns Rd	Valley Creek	Hueytown	33.388854	-87.056471
16	Red Farmer Rd	Knight Rd	Hueytown	33.457816	-86.979715
17	Grantswood Rd	Batavia Rd	Irondale	33.543596	-86.646554
18	Queenstown Rd	Balco Rd	Irondale	33.577173	-86.637135
19	5th St N	Bessemer Super Hwy	Lipscomb	33.428206	-86.941896
20	Avenue H	11th St S	Lipscomb	33.428539	-86.921170
21	Allison Bonnet Mem Dr	9th St	Midfield	33.463883	-86.942873
22	Industrial Blvd	RR Tracks	Midfield	33.448794	-86.909057
23	Old Leeds Rd	Glencoe Rd	Mt Brook	33.498373	-86.743052
24	Overton Rd	Overton Trail	Mt Brook	33.472132	-86.727367
25	East Pleasant Grove Rd	Pleasant Grove Rd N	Pleasant Grove	33.518023	-86.964709
26	Park Rd East	Ridge Way	Pleasant Grove	33.490516	-86.950488
27	East Lake Blvd	Birmingham St	Tarrant	33.578552	-86.765166
28	Jackson Blvd	Hall St	Tarrant	33.577695	-86.776690
29	N Chalkville Rd	Frank Johnston Dr	Trussville	33.640721	-86.623045
30	Service Rd	Kidron Dr	Trussville	33.647970	-86.611008
31	Cahaba Heights Rd	Access Rd	Vestavia Hills	33.453416	-86.716187
32	Sicard Hollow Rd	Blue Lake Dr/Cahaba Hts Rd	Vestavia Hills	33.450737	-86.718040

Figure 2

Litter Collection Site Map



<https://mymaps.us/?map=5b4f49e149dac03610731593dc8b>

Table 2

Weight & Item Totals Per Site

Site #	Approx. Location	Main Road	Cross Road	Wt (lbs)	Items	Cig. Butts
1	Adamsville	Oakwood Dr	Poplar Lane	7.16	58	65
2	Adamsville	Poplar Lane	Oakwood Dr	13.22	228	106
3	Brighton	Huntsville Ave	Lewis St	5.5	257	152
4	Brighton	Jaybird Rd	Howard Ave	11.66	141	351
5	Brookside	Market St	Main St	1.22	45	15
6	Brookside	Mississippi St	Price St/Bivens-Brookside Rd	19.62	181	19
7	Fairfield	MLK Blvd	66th Place	12.18	383	371
8	Fairfield	Valley Rd	Polymer Coil Coaters, 7001 Valley Rd	18.55	418	117
9	Gardendale	New Castle Rd	Willow Dr	48.48	651	1381
10	Gardendale	Mt Olive Blvd	Hwy 31	0.5	10	1386
11	Graysville	1st Ave SE	Glasgow Hollow Rd	5.4	128	180
12	Graysville	Glasgow Hollow Rd	1st Ave SE & Cherry Ave	19.62	259	44
13	Homewood	Greensprings Hwy	Columbiana Rd	1.66	55	345
14	Homewood	Valley Ave	none; see latitude & longitude	1.76	57	140
15	Hueytown	Johns Rd	Valley Creek	3.64	84	114
16	Hueytown	Red Farmer Dr	Knight Rd	5.3	163	300
17	Irondale	Grantstown Rd	Batavia Ave	2.66	42	127
18	Irondale	Queenstown Rd	Balco Rd	50.66	348	824
19	Lipscomb	5th St N	Bessemer Super Hwy	26.05	118	174
20	Lipscomb	Avenue H	11th St S	5.19	124	110
21	Midfield	Allison Bonnet Mem Dr	9th St	1.66	24	95
22	Midfield	Industrial Blvd	RR Tracks	8.92	104	144
23	Mt Brook	Old Leeds Rd	Glencoe Rd	7.38	66	63
24	Mt Brook	Overton Rd	Overton Trail	4.18*	65	160
25	Pleasant Grove	East Pleasant Grove Rd	Pleasant Grove Rd	18.3	297	168
26	Pleasant Grove	Park Rd East	Mini Warehouse	8.6	132	479
27	Tarrant	East Lake Blvd	Birmingham St	forgot	107	17
28	Tarrant	Jackson Blvd	Hall St	8.28	144	23
29	Trussville	N Chalkville Rd	none; see latitude & longitude	4.18	96	824
30	Trussville	Service Rd	Kidron Dr	4.08	190	138
31	Vestavia Hills	Cahaba Heights Rd	Access Rd	5.74*	170	507
32	Vestavia Hills	Sicard Hollow Rd	Blue Lake Dr/Cahaba Hts Rd	10.31	180	260
TOTAL				331.74	5325	9199

Total Number of Items Per Site

Table 3

Site #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Totals
1. Paper (# of Items)	9	51	##	33	7	38	##	##	193	2	52	##	21	17	23	70	13	##	23	55	7	54	16	16	74	47	35	55	31	61	40	40	1771
1.1 Fast food beverage	0	8	8	2	0	9	5	5	18	0	5	5	0	0	0	0	1	14	0	2	0	2	0	1	3	2	4	2	0	5	6	4	111
1.2 Fast food container	1	0	40	6	4	6	31	14	75	0	12	26	2	1	2	7	3	41	4	10	3	5	11	8	28	7	5	20	13	20	4	7	416
1.3 Other food	7	32	19	3	0	12	32	30	36	0	15	30	7	6	0	9	8	22	10	9	0	24	1	1	15	3	6	29	13	17	16	20	432
1.4 Non-food	0	0	37	9	0	2	77	60	20	0	10	43	0	0	19	47	0	1	2	24	4	16	0	5	7	5	19	4	3	11	14	5	444
1.5 Other cardboard	0	0	0	1	0	0	1	8	5	0	1	1	1	1	0	1	0	5	0	4	0	1	2	0	0	0	0	0	1	0	0	0	33
1.6 Paper bags	0	0	5	4	0	2	14	8	5	0	0	6	0	0	1	2	0	1	3	1	0	3	0	0	0	0	0	0	0	0	0	1	56
1.7 Newspaper & magazines	0	0	0	3	1	0	1	1	4	0	3	1	0	0	0	0	0	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0	18
1.8 Other paper	0	2	0	3	0	0	5	6	0	2	0	0	9	5	0	0	0	40	2	0	0	0	0	0	0	27	0	0	0	0	0	0	101
1.9 Cigarette packs	1	9	9	2	2	7	9	5	30	0	6	3	2	4	1	4	1	19	0	5	0	2	1	1	21	3	1	0	1	8	0	3	160
2. Plastic	25	##	87	62	24	##	##	##	300	4	39	88	26	23	38	73	14	##	47	44	7	24	14	38	##	56	52	57	43	67	69	83	2220
2.1 Beverage containers, alc	0	12	1	2	0	0	0	20	3	32	0	0	1	1	2	0	1	0	2	2	0	0	0	8	2	4	0	0	0	0	0	19	112
2.1 Beverage containers, non-alc	9	54	16	15	11	58	5	19	174	0	18	19	2	5	7	13	1	47	2	10	1	9	2	5	61	12	0	13	9	19	11	18	645
2.2 Fast food	4	15	22	7	3	22	49	62	32	4	3	36	0	4	8	18	13	32	12	10	3	0	7	2	34	17	14	11	15	16	4	14	493
2.3 Other food	4	10	29	13	9	10	36	37	32	0	8	14	7	0	2	5	0	22	16	11	2	1	1	13	15	7	17	15	8	12	18	9	383
2.4 Non-food	0	0	0	3	1	0	14	7	0	0	5	0	11	0	17	25	0	0	1	4	1	12	0	1	4	1	16	10	8	7	19	20	187
2.5 Plastic bags & film	7	15	8	14	0	9	13	27	21	0	2	14	2	2	0	3	0	9	4	3	0	0	4	9	7	6	4	6	1	9	5	2	206
2.6 Automotive parts	0	2	0	2	0	0	2	1	6	0	1	2	0	0	0	1	0	1	3	0	0	2	0	0	0	0	1	2	0	3	9	1	39
2.7 Other plastic	1	13	5	1	0	4	4	4	3	0	2	1	3	10	0	0	0	16	4	3	0	0	0	0	5	8	0	0	2	1	3	0	93
2.8 Tobacco	0	2	6	5	0	1	23	4	0	0	0	1	0	0	4	7	0	0	3	3	0	0	0	2	1	0	0	0	0	0	0	0	62
3. Glass	8	3	4	19	2	15	5	30	20	0	1	23	3	4	1	2	1	10	13	6	0	1	12	0	22	7	1	9	0	6	9	7	244
3.1 Beverage Alcohol	8	3	4	12	2	14	5	19	14	0	1	13	1	3	1	2	1	9	12	6	0	1	7	0	11	7	1	8	0	6	5	6	182
3.2 Beverage Non-Alcoholic	0	0	0	7	0	1	0	8	2	0	0	2	1	0	0	0	0	0	0	0	0	0	5	0	10	0	0	1	0	0	4	0	41
3.3 Other food	0	0	0	0	0	0	0	1	3	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
3.4 Non-food	0	0	0	0	0	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	6
3.5 Automotive parts	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	5
3.6 Other glass	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4. Metal	5	31	31	8	4	11	8	16	50	2	30	20	0	5	15	12	10	28	20	4	4	9	13	8	34	17	10	9	11	42	25	29	521
4.1 Cans Alcoholic	4	9	24	2	2	9	0	4	33	1	23	9	0	2	6	9	4	8	14	1	2	4	5	6	21	2	2	4	2	29	8	19	268
4.2 Cans Non-Alcoholic	1	20	3	0	2	2	2	6	6	0	5	11	0	0	8	0	4	3	3	0	1	3	8	2	12	8	0	3	1	11	15	7	147
4.3 Other food	0	2	2	3	0	0	4	3	4	1	1	0	0	3	1	0	0	2	2	0	0	2	0	0	1	7	0	1	1	1	0	0	41
4.4 Non-food	0	0	2	0	0	0	1	2	6	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	0	1	0	0	0	16
4.5 Automotive parts	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	3	0	15	1	0	0	0	0	0	0	0	3	0	1	1	0	3	29
4.6 Other metal	0	0	0	2	0	0	1	1	0	0	0	0	0	0	0	0	2	0	0	3	0	0	0	0	0	0	0	1	5	0	2	0	17
4.7 Tobacco	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	3
5. Styrofoam	2	9	11	15	2	11	20	22	78	0	3	11	2	6	7	3	3	29	8	11	4	6	7	3	28	3	7	10	0	12	19	21	373
5.1 Beverage	1	5	8	9	2	8	14	10	68	0	3	9	1	5	7	3	2	24	6	10	4	3	1	3	23	1	5	8	0	10	11	7	271
5.2 Food	1	4	3	5	0	3	3	8	10	0	0	2	0	0	0	0	1	4	2	1	0	3	6	0	5	0	1	2	0	1	4	0	69
5.3 Other	0	0	0	1	0	0	3	4	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	2	1	0	1	4	14	33

Total Number of Items Per Site

Table 3, page 2

Site #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Totals
6. Construction & Demo Litter	1	1	0	0	0	0	3	20	1	0	0	0	0	0	0	0	1	0	0	0	0	7	0	0	3	0	0	0	0	0	5	0	42
6.1 Wood/lumber practical	1	0	0	0	0	0	3	6	0	0	0	0	0	0	0	0	1	0	0	0	0	7	0	0	3	0	0	0	0	4	0	25	
6.2 Mineral Aggregates	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6.3 Roofing	0	1	0	0	0	0	0	12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	
6.4 Insulation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6.5 Drywall	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6.6 Other Constr & Demo Litter	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	
7. Hazardous Materials	0	0	2	0	0	0	1	7	3	1	1	0	1	0	0	0	0	0	4	0	0	0	3	0	0	0	1	0	0	0	0	24	
7.1 Latex paint	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7.2 Oil -based paint	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7.3 Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7.4 Batteries	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7.5 Flammable gas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7.6 Flammable liquids	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7.7 Explosives	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7.8 Pesticides/herbicides	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7.9 Cleaners/hazardous	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7.10 Medical wastes	0	0	2	0	0	0	0	4	3	1	1	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	16	
7.11 Other hazardous	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
7.12 Dead Animals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4	
8. Other Materials	8	10	4	4	6	2	5	22	6	1	2	2	2	2	0	3	0	9	3	4	2	3	1	0	6	2	2	3	11	2	3	0	130
8.1 Textiles & leather	1	5	2	1	2	0	2	1	3	0	1	2	2	0	0	0	0	4	0	2	0	0	0	0	4	2	0	2	1	1	1	0	39
8.2 Carpet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8.3 Furniture	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
8.4 Tires	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8.5 Auto rubber products	2	2	1	2	1	2	0	20	1	1	1	0	0	1	0	3	0	5	1	1	0	3	1	0	0	0	1	0	10	0	1	0	60
8.6 Rubber and latex toiletries	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	
8.7 Other rubber or latex	0	0	0	1	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
8.8 Ceramics/porcelain	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
8.9 Toys/sporting goods	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	4	
8.10 Miscellaneous materials	4	0	1	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	1	0	0	1	0	0	0	14	
8.11 Hygienic products	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
9. Miscellaneous Debris (grass, leaves, dirt, stones, etc)	0	0	0	3	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
Total Pieces of Litter	58	228	257	141	45	181	383	418	651	10	128	259	55	57	84	163	42	348	118	124	24	104	66	65	297	132	107	144	96	190	170	180	5325
Cigarette Butts	65	106	152	351	15	19	371	117	1381	180	44	345	140	114	300	127	824	174	110	95	144	63	160	168	479	17	23	824	138	507	260	9199	
Recycled Material Items	22	98	48	38	17	84	32	59	261	1	47	55	5	12	22	25	10	69	33	17	4	17	27	21	117	33	3	29	12	65	43	1395	
Food and Beverage Packaging	40	174	179	86	35	154	206	229	539	6	94	182	22	31	42	67	38	230	85	70	16	57	54	49	241	77	55	117	62	147	106	130	3620

Table 4

Weight, Item Numbers, and Area Totals

Totals	Average
Weight Totals (Ounces)	883.17
Weight Totals (Pounds)	55.20
Total # Items Collected	886
# Cigarette Butts	1531
Site Areas Linear Total (Ft.)	6.01
Site Areas Total (Sq. Ft.)	0.01

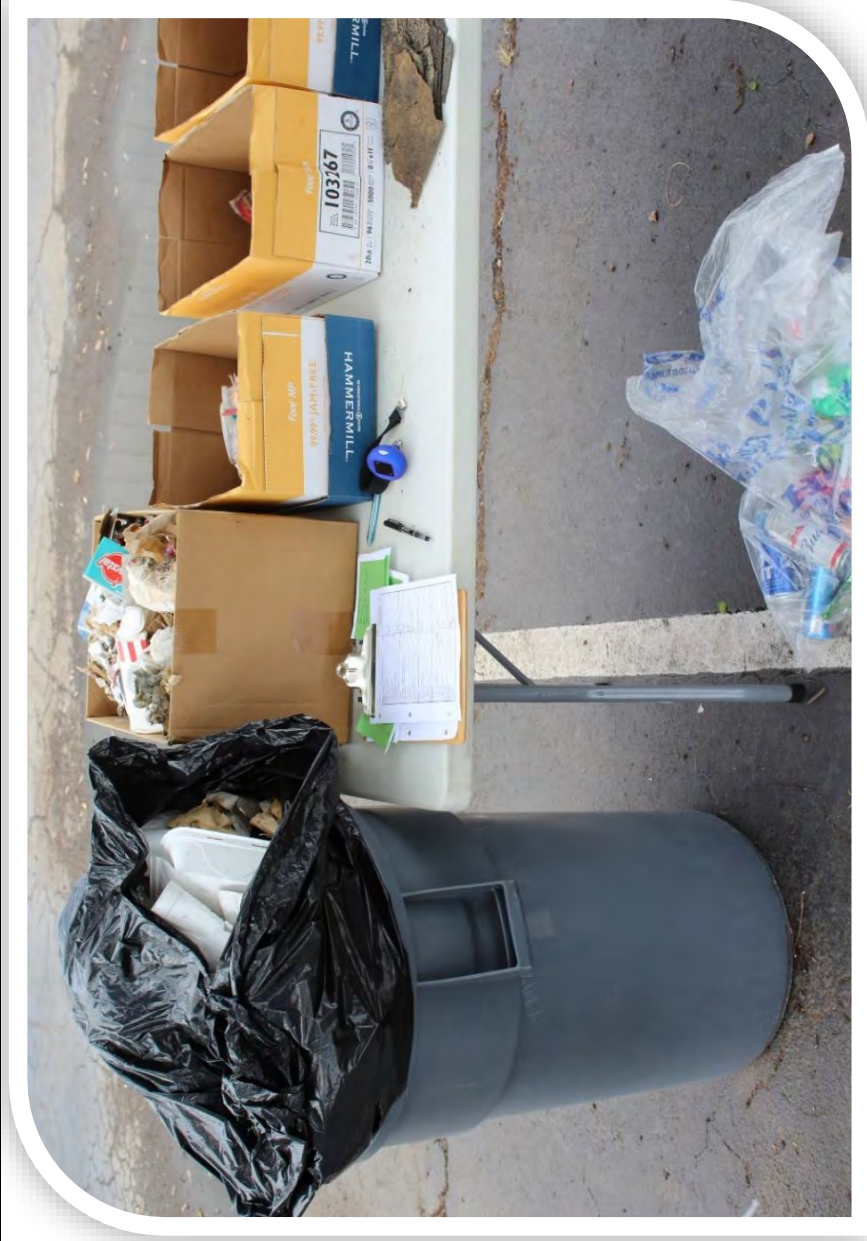


Figure 3

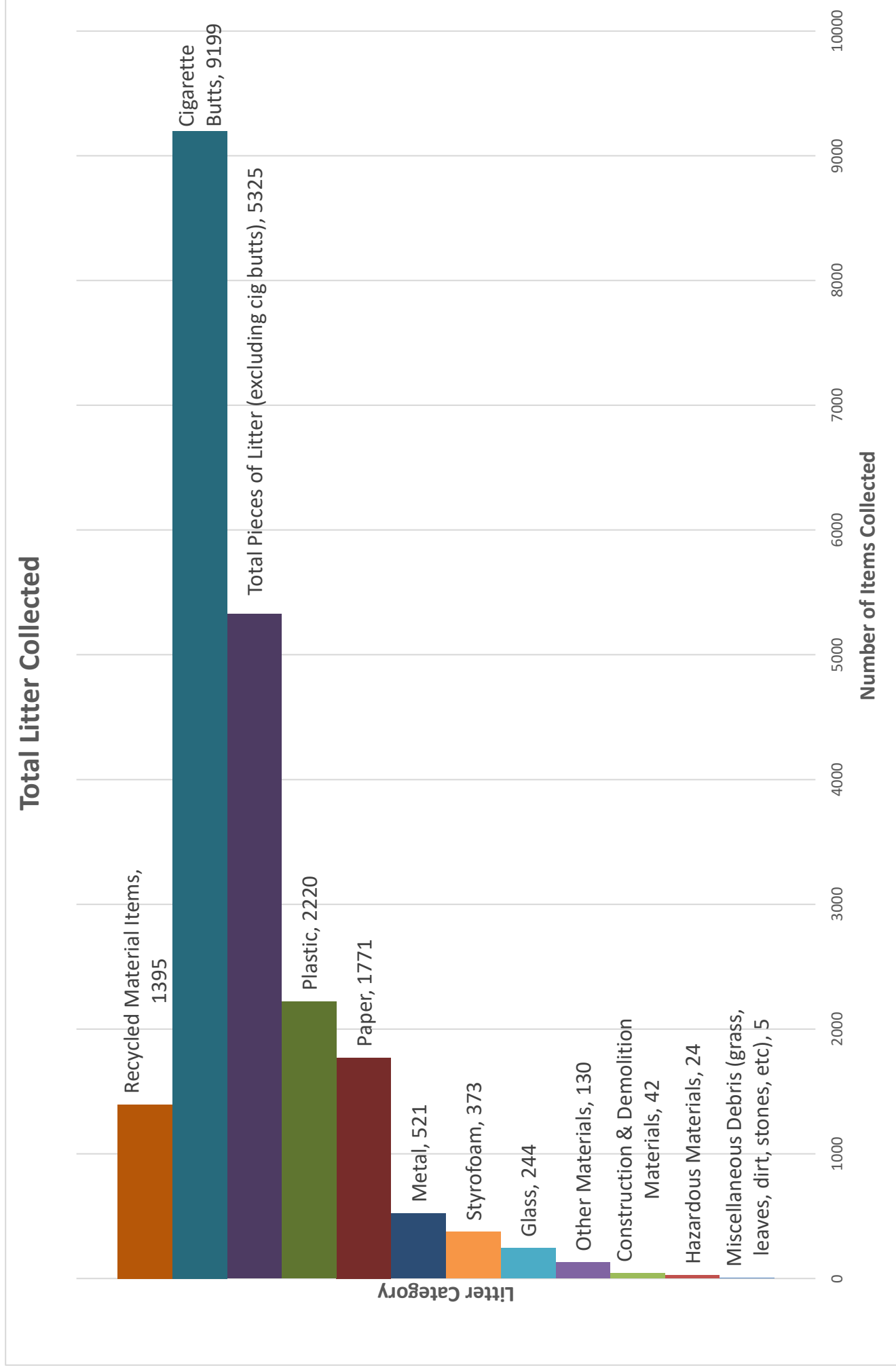


Figure 4

**CIGARETTE BUTTS VS ALL OTHER LITTER; # OF ITEMS; % OF TOTAL;
14,524 TOTAL ITEMS**

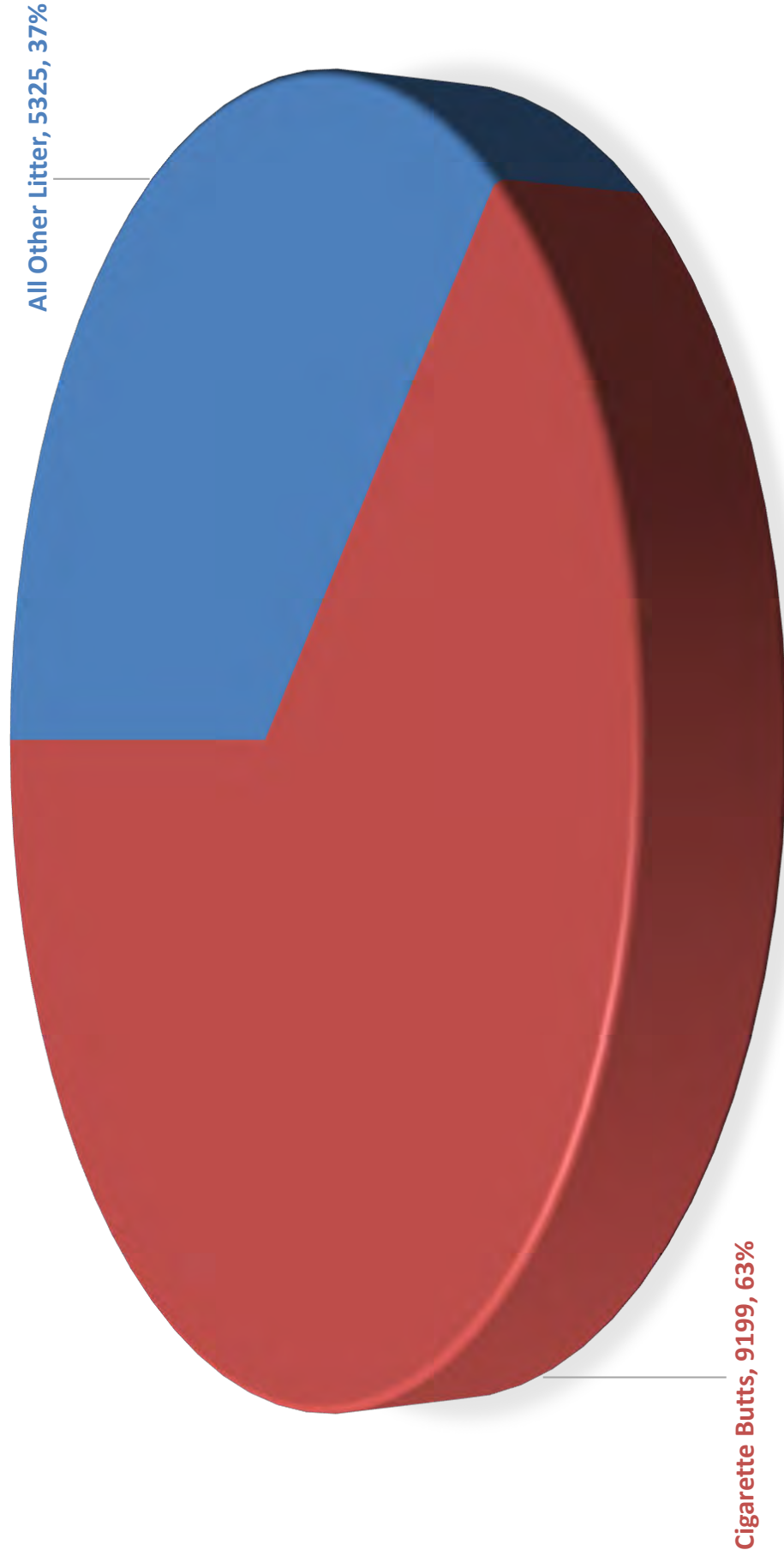


Figure 5

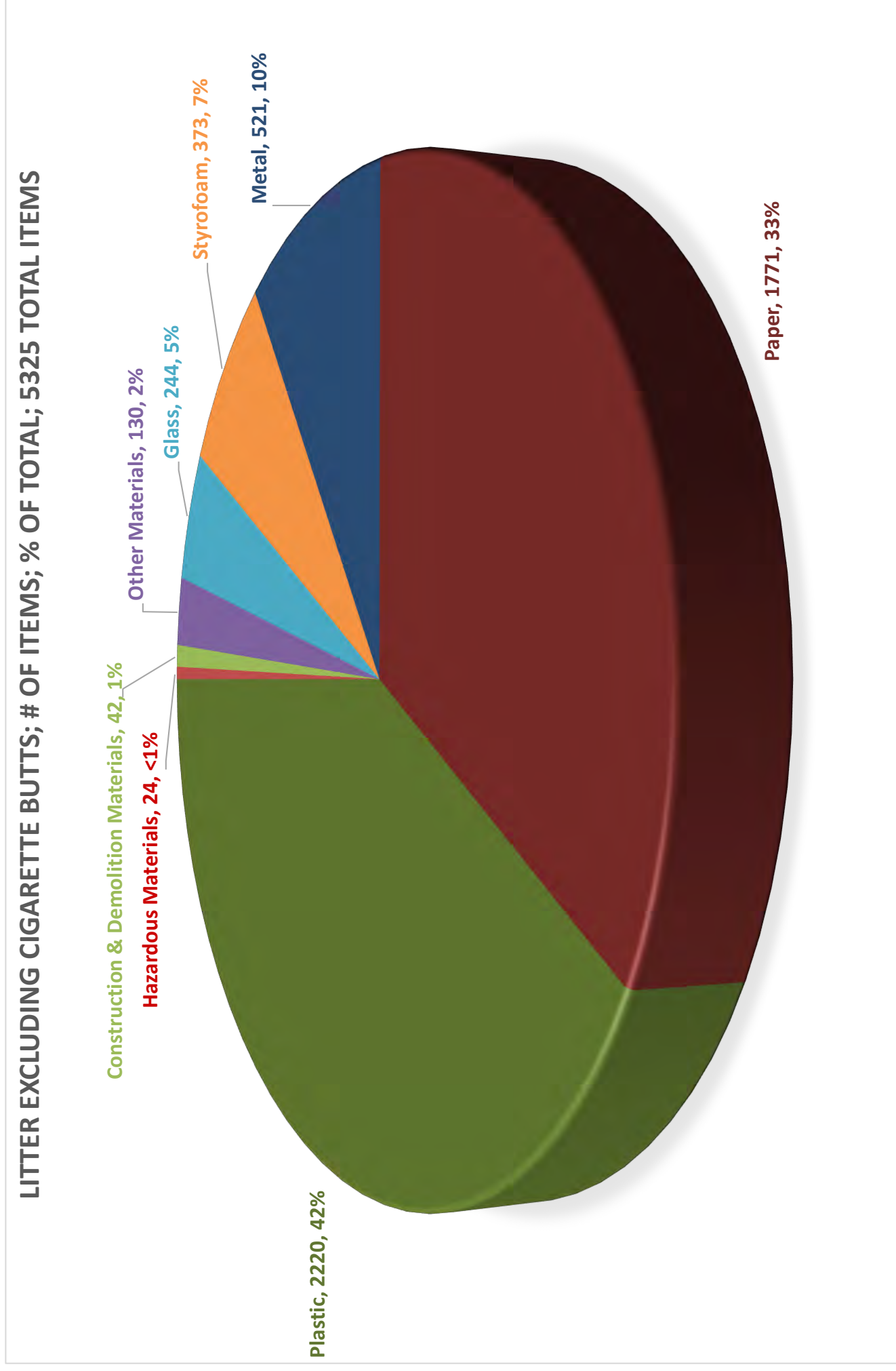


Figure 6

**FOOD & BEVERAGE LITTER; # OF ITEMS; % OF TOTAL;
5325 TOTAL ITEMS**

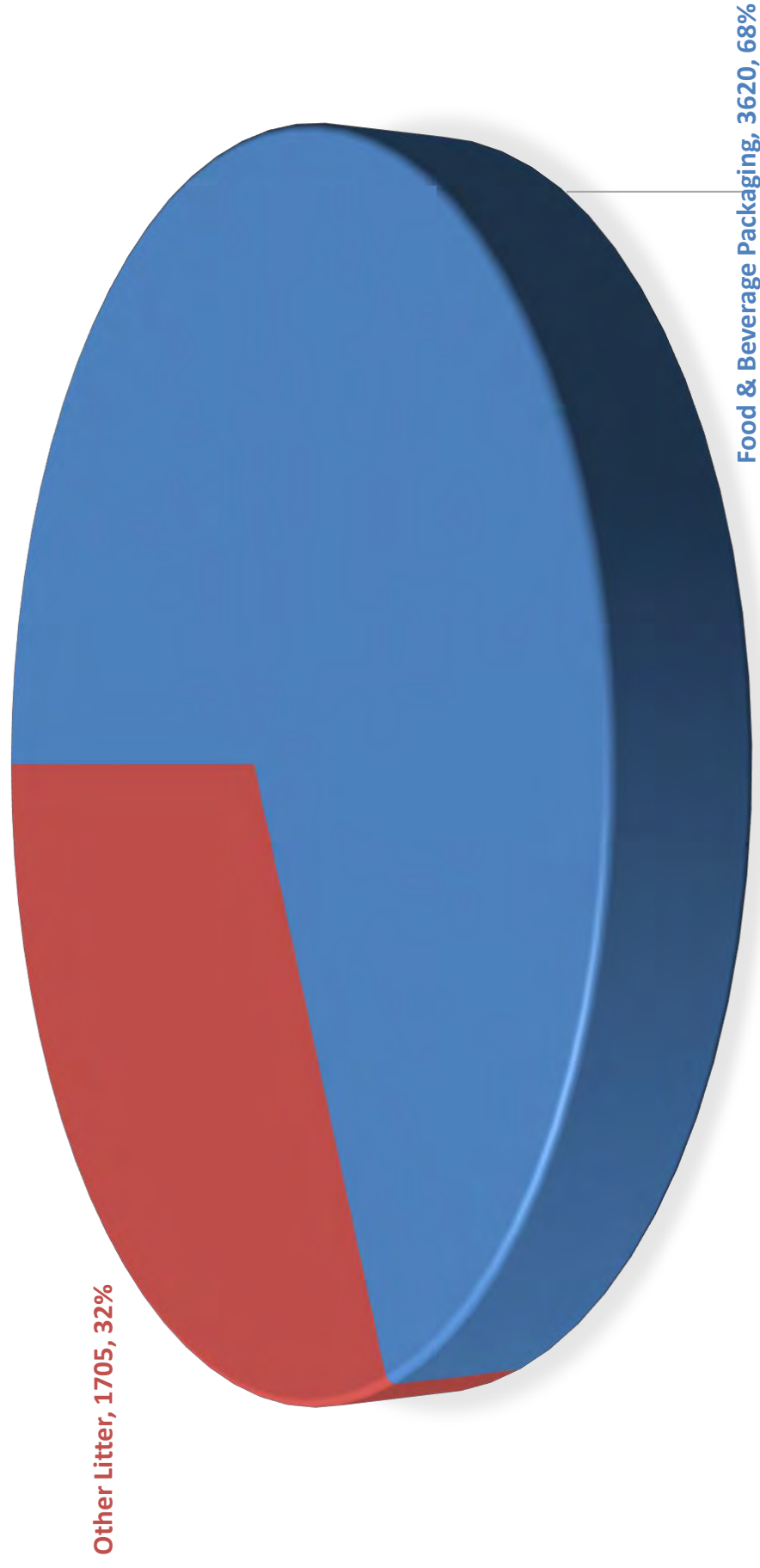


Figure 7

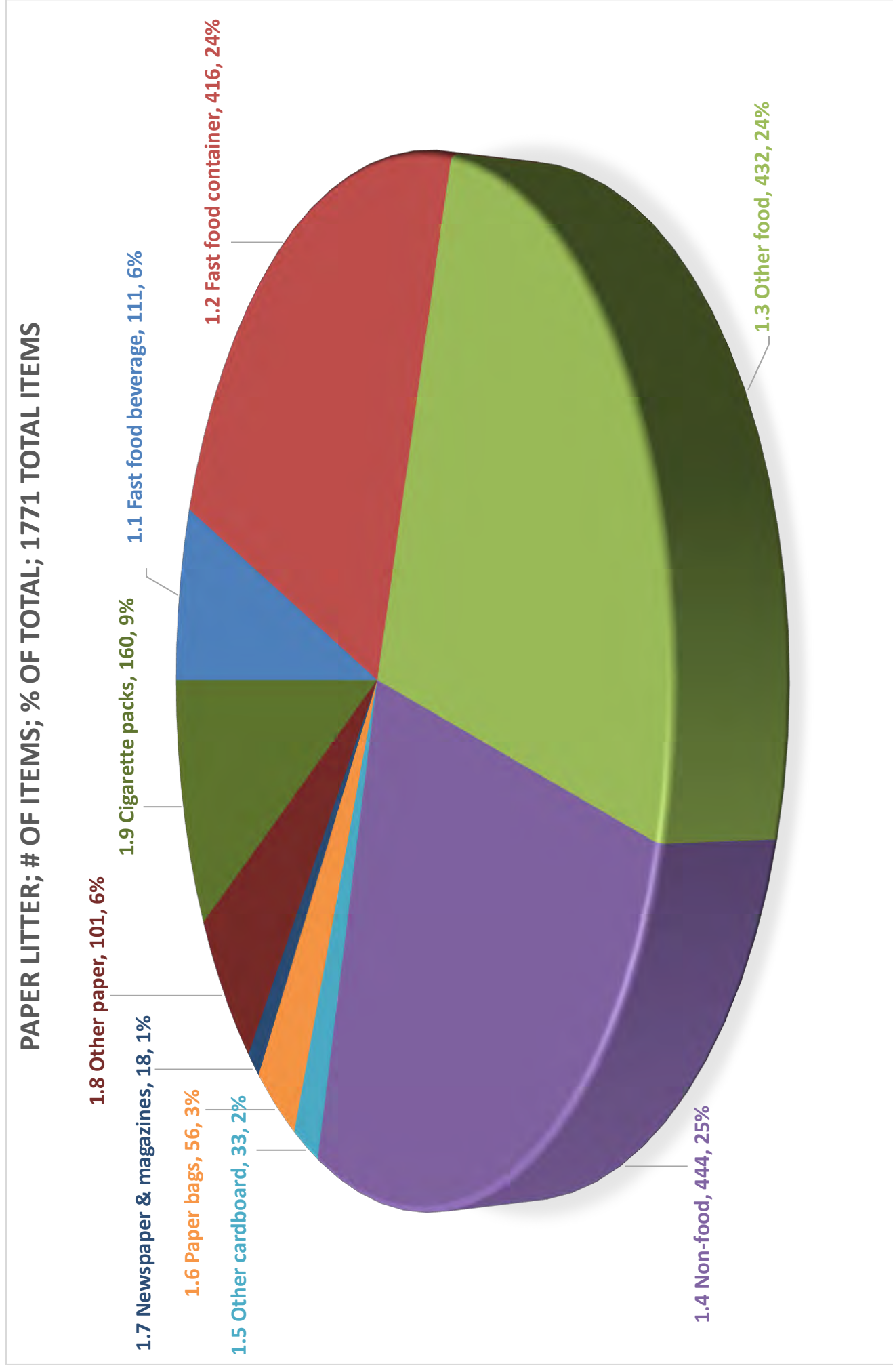


Figure 8

PLASTIC LITTER; # OF ITEMS; % OF TOTAL; 2220 TOTAL ITEMS

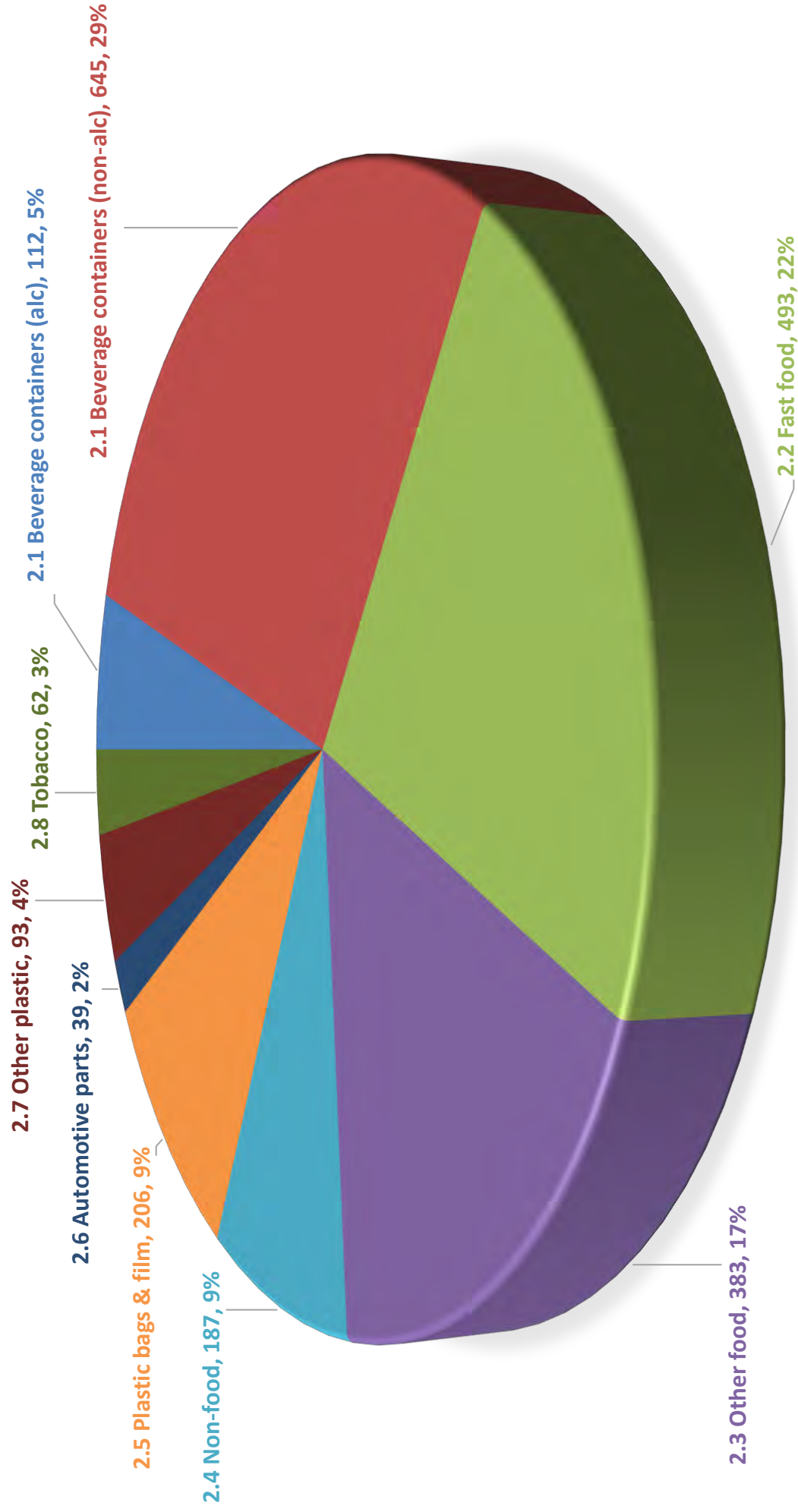


Figure 9

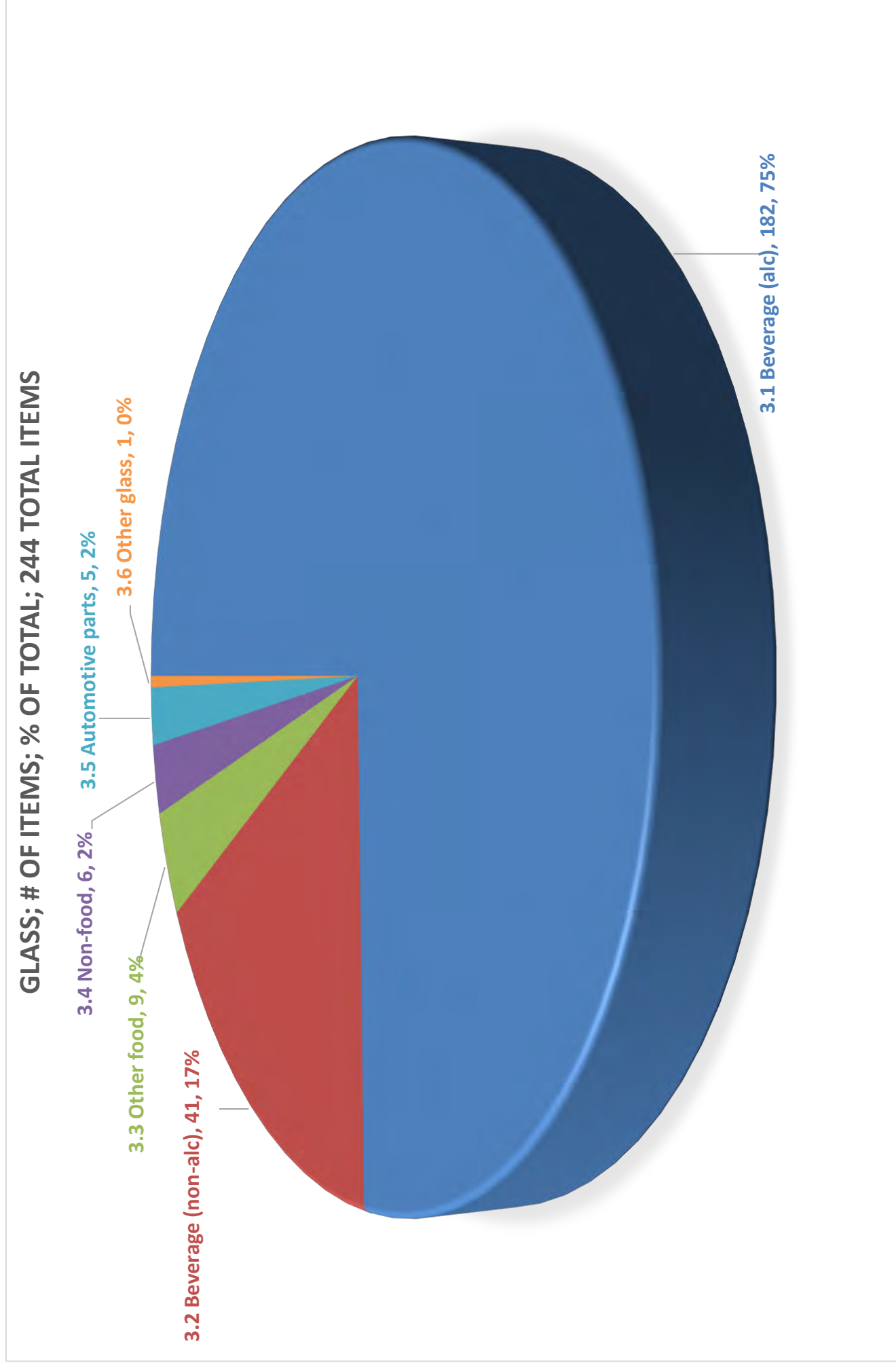


Figure 10

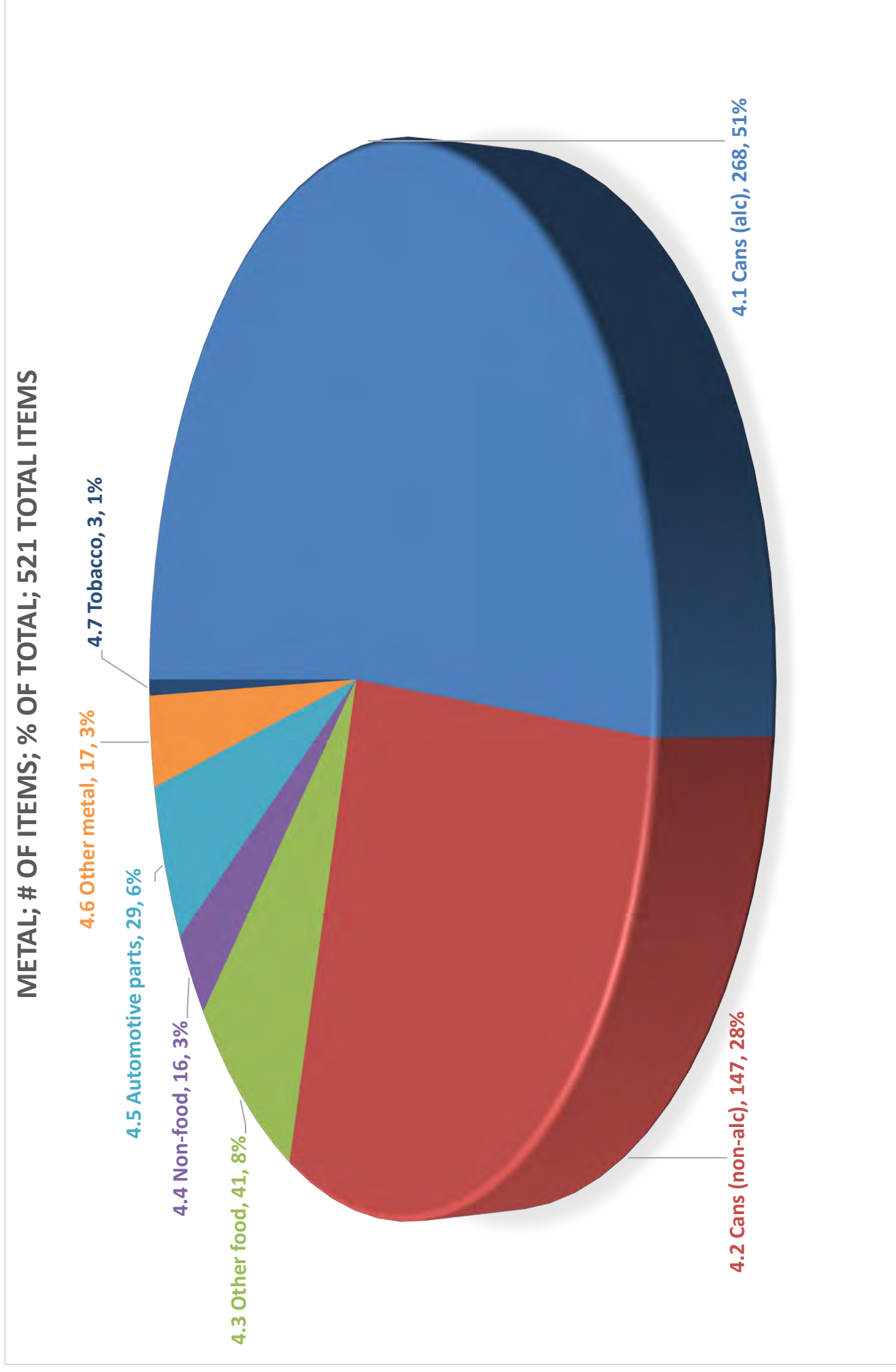


Figure 11

STYROFOAM; # OF ITEMS; % OF TOTAL; 373 TOTAL ITEMS

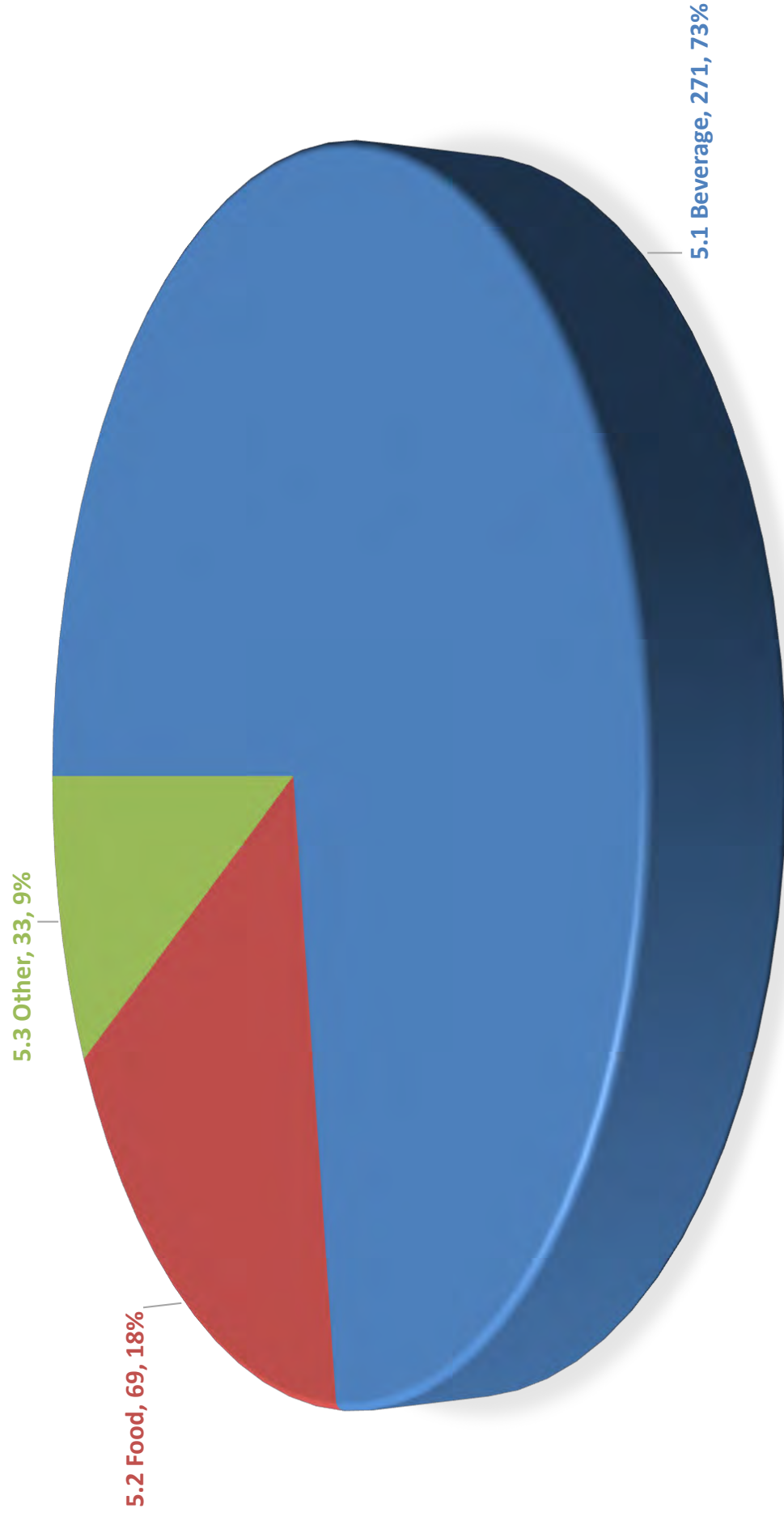


Figure 12

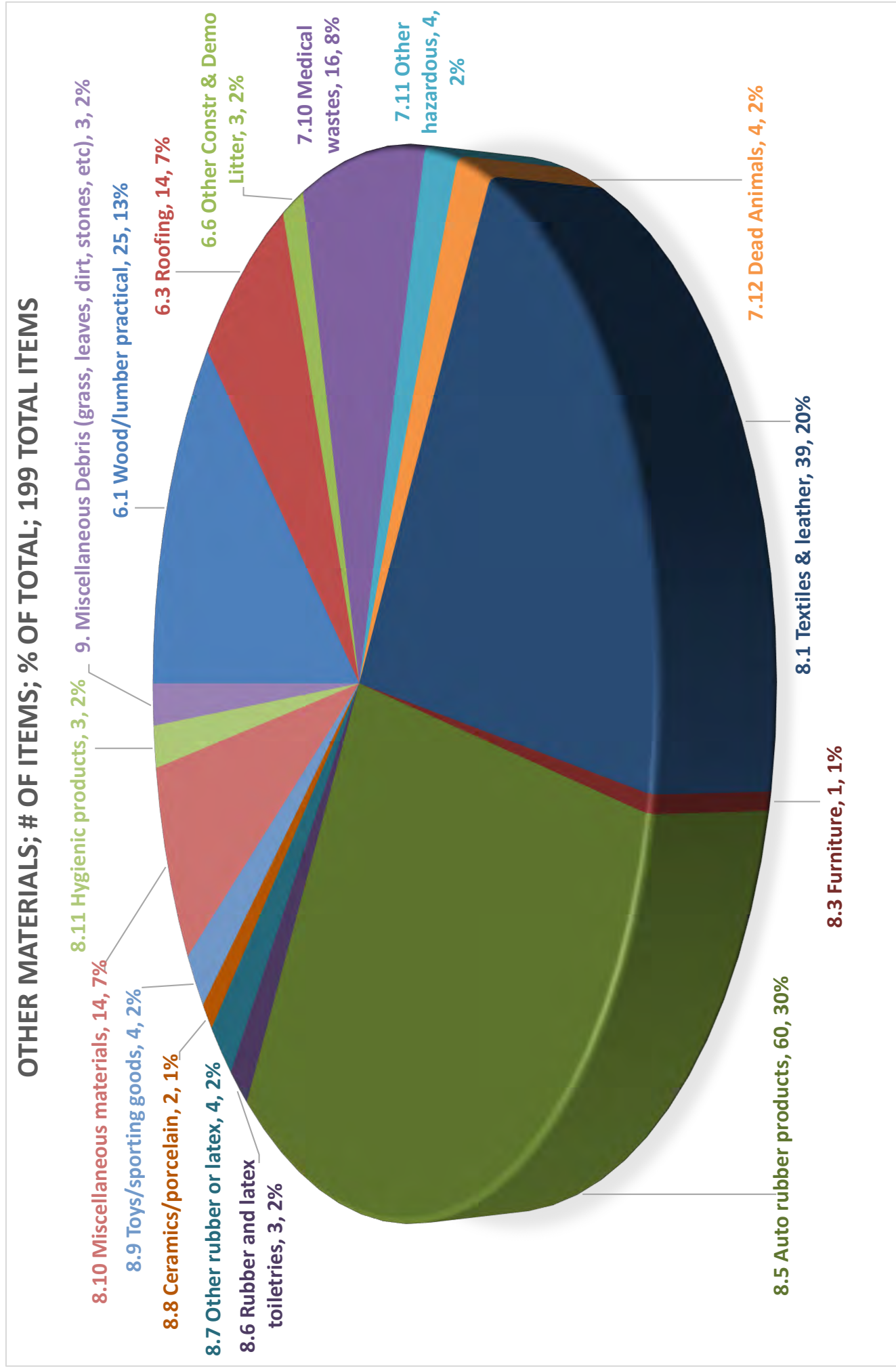


Figure 13

**RECYCLABLE VS NON-RECYCLABLE MATERIALS, # OF ITEMS, % OF TOTAL;
5325 TOTAL ITEMS**

