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ROADSIDE LITTER
STUDY

Technical Paper 79-10

October 1979

MAINE DEPARTMENT OF TRANSPORTATION

Study No. BP-80(923)

Prepared by

Kenneth M. Jacobs

00026

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STATE OFFICE BUILDING

AUGUSTA, MAINE

04333



mdot

ROGER L. MALLAR
Commissioner

ADDRESS REPLY TO: MATERIALS & RESEARCH DIVISION
BOX 1208, BANGOR, MAINE 04402

October 1979

Re: ROADSIDE LITTER STUDY REPORT

This report, authored by Kenneth M. Jacobs, describes a study which commenced in 1977. The Legislature of the State of Maine passed the so-called "Bottle Bill", (MRSA Title 32, Ch. 28), which was an effort to control roadside litter by requiring that certain beverage containers be returnable. Therefore, the Maine Department of Transportation decided to obtain data on the amount and composition of roadside litter before and after the Bill became law. It was found that the law evidently did have an impact on refuse accumulation along the roadway.

A tabulation of the information obtained in the study is included in this report. If, after receiving the report the reader has further questions, the Department will be happy to answer them.

Sincerely yours,

Wilbur J. Dunphy, Jr.
Research Engineer

WJD/par

MAINE DEPARTMENT OF TRANSPORTATION



**MATERIALS AND RESEARCH
DIVISION**

PREPARED BY KENNETH JACOBS

ROADSIDE LITTER STUDY

MATERIALS AND RESEARCH DIVISION TECHNICAL PAPER 79-10 OCTOBER 1979

TABLE OF CONTENTS

	<u>Page</u>
ABSTRACT.....	1
INTRODUCTION.....	2
SCOPE.....	2
METHODOLOGY.....	2
ANALYSIS OF DATA.....	3
Reliability of Data.....	3
Results of Roadside Sampling.....	3
Paper Category.....	4
Plastic Category.....	4
Can Category.....	5
Bottle Category.....	5
Miscellaneous Category.....	5
DISCUSSION OF RESULTS.....	6
CONCLUSIONS.....	6
APPENDIX.....	7

ABSTRACT

The study entailed the sampling of roadside litter in the fall of 1977, 1978 and 1979 to determine if the so-called "Bottle Bill" had any effect on the amount of litter being disposed of on the roadsides. There were eleven sections selected throughout the State of Maine for sampling. The litter collected from these sections was divided into five categories. Results from the eleven sections showed the roadside litter had been reduced in four of the five categories in 1978 and three of the five categories in 1979 and that the total litter also decreased.

The two categories which the "Bottle Bill" directly effected were "Bottles" and "Cans". For these combined categories the reduction was 55% in 1978 and 56% in 1979.

INTRODUCTION

This study was initiated in order to determine if the so-called "Bottle Bill" (MRSA Title 32, Ch. 28) was effective in reducing the amount of roadside litter. Various groups have claimed that the no deposit-no return containers contributed greatly to the amount of litter found along various streets and highways. Also, other groups have claimed the no deposit-no return had little or no effect on the total amount of litter deposited. Thus, it was believed a study of this type would help answer the question of whether the "Bottle Bill" had any effect on the amount of litter found along the highway systems.

SCOPE

The litter composition was broken down into five categories; that is, paper, plastics, cans, bottles and jars and miscellaneous items. These categories were further subdivided into items such as shown in Figure 1 in the Appendix, which is a reproduction of the litter data form used by the Maintenance Personnel when making the litter pickups.

METHODOLOGY

Sections of highway were randomly selected for the collection of litter. The eleven locations where litter was collected were sections of highway two-tenths (0.2) of a mile in length. These locations were on various types of highway systems, such as interstate highways, primary highways, State highways, rural highways and urban highways. The various sample sections were located in the counties of Androscoggin, Aroostook, Cumberland, Franklin, Sagadahoc, Somerset, Washington and York (See Figure 2).

The Highway Maintenance personnel completed the first year's sampling in the fall of 1977 (after Labor Day), prior to the enactment of the so-called "Bottle Bill". The first litter pickup consisted of completely cleaning the eleven selected sections of all accumulated litter. Approximately 30 days later the same procedure was repeated and the amount and type of litter pickup was recorded. Sampling of these same eleven sections using the same procedures in approximately the same time frames was again repeated in the fall of 1978 and 1979. The results from these three samplings are shown in Table I.

ANALYSIS OF DATA

The analyses of data for the roadside litter were made for the five categories: Paper, Plastic, Cans, Bottles and Miscellaneous, as well as for the items within the categories. The amount of litter collected for each section is shown in Table I and that data adjusted to a 30-day base in Table II. The data in Table II provided the basis for the statistical analysis in Table III.

Reliability of Data

Confidence limits of 95 percent for the mean values were used, that is, unless a one in 20 chance has occurred in sampling, the means were within the values shown under Columns \bar{X} and E in Table III.

Results of Roadside Sampling

The percent of change in the amount of litter for each item collected from the eleven sections is shown in Table III. The total amounts of litter collected for the 30-day periods in 1978 and 1979 were less than that collected in a 30-day period in 1977 (See Table III). A category that had an increase in roadside litter in both 1978 and 1979 was the "Paper category".

Paper Category

In the "Total Paper Items" category the 30-day base increased from 358 in 1977 to 400 in 1978 and 438 in 1979. This large increase was from Section IV-3 where the count for "Other Paper Items" collected in 1978 was 375. However, when this item was tested statistically for outliers it was found that there was only 1 chance in 200 that this would occur.⁽¹⁾ For example, the dumping of a box of loose papers within the sampling section would not normally constitute what would be found in the area. Thus, the "Other Paper Items" in this one section were probably an anomaly and the values 46, 375 and 81 from the three samplings were deleted from the data. It may be well to note that in many instances, paper items are bio-degradable.

Plastic Category

There were reductions of 12 and 46 percent in 1978 and 1979 for the "Total Plastic Items", although "Other Plastic Items" showed a small increase in 1978.

1

Test For Outliers

$$Z = \frac{X_i - \bar{X}}{\sigma}$$

$$Z = \frac{375 - 59.4}{112.8} = 2.80$$

$$df = 10 \quad n = 11$$

∴ Area Under a Normal Curve = 98.49%

∴ 1 chance in 200

The Z value of 2.80 at 10 degrees of freedom means that a value as large as 375 could occur by chance about 1 time in 200, thus it is very probable that this was not a representative count and there is justification for deleting it.

Considering totals for all categories, a Z value of 2.59 at 10 degrees of freedom was found. This means that a value as large as 381 could occur by chance about 1 time in 70. Thus, it is again very probable that this value for Other Paper Items is not a representative count and there is justification for deleting it.

Can Category

There were reductions of 43 and 72 percent percent in 1978 and 1979 for the "Total Can Items", although there were increases for some of the other can items. The item "Beer Cans" showed the greatest reduction. These reductions were 60 percent in 1978 and 90 percent in 1979.

Bottle Category

The reductions for the "Total Bottle and Jar Items" were approximately 62 percent in 1978 and 45 percent in 1979. A bottle item that did show a relatively large increase both in 1978 and 1979 was "Returnable Beer Bottles". These bottles for all practical purposes were not sold in Maine in 1977, thus this would explain the reason for the large relative increase.

Miscellaneous Category

The "Total Miscellaneous Items" showed a reduction of 21 percent in 1978 with an increase of 19 percent in 1979.

In the Section II-3, Unclassified Items, the value 123 in 1978 was found to be an outlier, thus the values from the three samplings in 1977, 1978 and 1979 were deleted from the data. ⁽²⁾

2

Test For Outliers

$$Z = \frac{123 - 11.7}{36.9} = 3.01$$

df = 10

n = 11

∴ Area Under a
Normal Curve

∴ 1 chance in 400

The Z value of 3.01 at 10 degrees of freedom means that a value as large as 123 could occur by chance about 1 time in 400. Thus, it is very probable that this was not a representative count and there is justification for deleting it.

DISCUSSION OF RESULTS

The total reduction in roadside litter for all five categories was found to be 15% in 1978 and 10% in 1979.

The two categories, "Cans" and "Bottles" which the "Bottle Bill" directly effects, showed reductions of 43 and 62 percent respectively in 1979 giving a combined reduction for both of 55% and 56% respectively for 1978 and 1979. When the litter attributed to bottles and cans was compared with total litter for the year 1977, bottles and cans were 28 percent of the litter. In 1978 the percent was reduced to 15 percent and in 1979 was further reduced to 14 percent. Thus, these data appear to confirm that there has been a reduction in roadside litter which is very substantial, at least for these two categories.

CONCLUSIONS

The results of this study indicated the "Bottle Bill" has had the following effects on roadside litter:

1. The total roadside litter for the years 1978 and 1979 was reduced.
2. The roadside litter attributed to bottles was reduced 62 percent in 1978 and 45 percent in 1979, when compared to 1977 base data.
3. The roadside litter attributed to cans was reduced 43 percent in 1978 and 72 percent in 1979, when compared to 1977 data base.
4. The roadside litter attributed to the combined bottles and cans categories was reduced 55% in 1978 and 56% in 1979.

APPENDIX

<u>Figure No.</u>		<u>Page</u>
1	Litter Data Form	8
2	Location of Roadside Litter Sampling Section	10

<u>Table No.</u>		<u>Page</u>
I	ROADSIDE LITTER DATA (RAW DATA)	11
II	ROADSIDE LITTER DATA (ADJUSTED DATA)	12
III	ANALYSIS OF ROADSIDE LITTER	13

LITTER DATA

LINE

1. STATE: _____
2. COUNTY: _____
3. ROUTE DESIGNATIONS:
 (Main) _____
 (Other) _____
4. LOG NOTATION: _____

5. HWY CLASS: _____

6. HWY USE: _____

7. LANES & MEDIAN: _____

8. ACCESS CONTROL: _____

9. ADT: _____
10. LENGTH: _____
11. RIGHT-OF-WAY: AVE. WIDTH _____ WIDTH RANGE _____
12. PAVEMENT NOTES: _____
13. ROADSIDE FEATURES: _____

14. PICKUP DATE	FIRST PICKUP	SECOND PICKUP
15. ROADSIDE COVER STATUS		
16. REMARKS (Use Back Side For Continuation)		
17. DATA SUBMITTED BY (Name & Title)		
18. DATE SUBMITTED		

Figure 1. Litter Data Form

LITTER DATA

LINE	LITTER COMPOSITION	FIRST PICKUP DATA	SECOND PICKUP DATA
19-22	19. Newspapers or Magazines		
PAPER	20. Paper Packages or Containers		
	21. Other Paper Items		
	22. Total Number of Paper Items (Sum of Lines 19-22)		
23-25	23. Plastic Packages or Containers		
PLASTIC	24. Other Plastic Items		
	25. Total Number of Plastic Items (Sum of Lines 23-24)		
26-30	26. Beer Cans		
CANS	27. Soft Drink Cans		
	28. Food Cans		
	29. Other Cans		
	30. Total Number of Cans (Sum of Lines 26-29)		
31-38	31. Returnable Beer Bottles		
BOTTLES	32. Nonreturnable Beer Bottles		
AND	33. Returnable Soft Drink Bottles		
JARS	34. Nonreturnable Soft Drink Bottles		
	35. Wine or Liquor Bottles		
	36. Food Bottles or Jars		
	37. Other Bottles or Jars		
	38. Total Number of Bottles and Jars (Sum of Lines 31-37)		
39-44	39. Auto Parts and Accessories (Not Tires)		
MISCEL-	40. Tires (or Tire Pieces)		
LANEOUS	41. Lumber or Construction Items		
ITEMS	42. Unclassified Items		
	43. Total Number of Miscellaneous Items (Sum of Lines 39-42)		
	44. List of Special Interest Items (Already Counted in Line 43)		
45.	Total Item Count		
46.	Total Litter Volume		
47.	Date of Litter Pickup		
48.	Days of Accumulation Since Previous Pickup		
49.	Data Verification	First	
	By (Name & Title)	Pickup	
		Second	
		Pickup	

Figure 1. Continued Litter Data Form

<u>Section No.</u>	<u>Maintenance Divisions</u>	<u>County</u>	<u>City or Town</u>	<u>FAP Route No.</u>	<u>U.S./Me. Route No.</u>
I-1	6	York	Sanford	#8	202 & 11
I-2	1	Aroostook	Macwahoc	#1	2A
I-3	6	Cumberland	Gorham	#12	25
II-1	5	Sagadahoc	Topsham	#17	196
II-2	6	Androscoggin	Mechanic Falls	#17	11 & 121
II-3	6	Cumberland	Gray	#15	202
III-1	4	Franklin	New Sharon	#32	27
IV-1	2	Washington	Perry	#44	1
IV-3	2	Washington	Baring	#46	1
V-1	4	Somerset	Fairfield	#95	I-95
V-2	1	Aroostook	Island Falls	#95	I-95

Figure 2. Location of Roadside Litter Sampling Sections

TABLE I ROADSIDE LITTER DATA (Raw Data For Approximately 30 Days)

DAYS	28	30	16	30	30	29	28	39	13	39	39	39	28	30	13	28	35	14	31	15	30	29	32	28	30	32	28	31	30	30	34	29				
SECTION	I-1			I-2			I-3			II-1			II-2			II-3			III-1			IV-1			IV-3			V-1			V-2					
YEAR	77	78	79	77	78	79	77	78	79	77	78	79	77	78	79	77	78	79	77	78	79	77	78	79	77	78	79	77	78	79	77	78	79	77	78	79

ROADSIDE LITTER ITEM

Newspapers, etc	3	0	7	0	0	0	1	1	0	0	0	4	1	0	0	4	2	2	0	1	1	0	0	0	0	0	0	1	2	2	0	0	2	
Paper Packages, etc.	15	0	18	7	3	29	16	1	17	20	0	140	9	55	1	31	21	1	4	5	5	3	3	0	0	0	0	6	4	3	2	0	4	
Other Paper Items	7	27	4	2	60	0	123	0	31	19	45	101	0	0	15	0	34	20	25	0	5	15	150	50	46	400	81	19	2	0	20	6	28	
TOTAL PAPER ITEMS	25	27	29	9	63	29	140	2	48	39	45	245	10	55	16	35	57	23	29	6	11	18	153	50	46	400	81	26	8	5	22	6	34	
Plastic Packages	4	1	3	3	2	10	15	9	0	11	3	18	1	0	0	5	7	0	0	3	0	1	0	0	0	0	14	6	4	0	4	2		
Other Plastic Items	2	0	0	0	0	4	11	0	0	5	10	33	0	10	0	5	12	0	3	5	0	0	0	0	0	10	8	3	1	5	6	0		
TOTAL PLASTIC ITEMS	6	1	3	3	2	14	26	9	0	16	13	51	1	10	0	10	19	0	3	8	0	1	0	0	0	10	22	9	5	5	10	2		
Beer Cans	10	0	0	1	0	0	8	0	0	6	3	2	7	2	0	5	0	0	4	3	0	0	0	2	0	4	0	10	8	3	2	0	1	
Soft Drink Cans	2	0	0	0	0	0	1	1	0	3	2	3	1	2	0	3	3	0	0	1	1	0	0	0	0	1	2	6	4	2	4	1	1	
Food Cans	1	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	3	1	1	0	0	1		
Other Cans	0	0	0	0	0	0	0	0	0	0	0	2	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	2	
TOTAL CAN ITEMS	13	0	2	1	0	0	9	1	0	9	5	7	8	8	0	8	4	0	5	4	1	0	0	2	0	5	2	19	14	7	6	1	5	
Returnable Beer Bottles	2	1	4	0	0	2	0	0	0	0	2	3	0	0	2	0	2	2	0	3	5	0	5	0	0	0	0	0	3	2	0	0	0	
Nonreturnable Beer Bottles	15	0	4	0	1	2	12	3	0	10	0	0	4	3	0	9	1	0	11	0	1	6	2	0	2	0	0	13	2	1	5	0	0	
Returnable Soft Drink Bottles	2	0	0	0	1	2	0	0	0	0	0	0	0	3	0	0	2	0	1	1	0	0	0	3	0	0	0	2	1	0	0	0	0	
Nonreturnable Soft Drink Bottles	3	0	0	1	2	0	3	0	0	1	0	0	4	2	0	4	0	0	1	0	0	3	0	0	0	0	4	2	1	2	0	0	0	
Wine or Liquor Bottles	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	
Food Bottles or Jars	1	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	
Other Bottles or Jars	0	0	1	0	0	0	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	
TOTAL BOTTLES & JAR ITEMS	24	1	13	1	4	6	16	3	0	14	2	3	8	6	5	14	3	4	12	4	7	9	7	0	5	1	0	17	14	9	7	0	0	
Auto Parts & Acces.	3	3	0	0	4	0	1	0	2	0	0	1	0	0	1	3	3	0	1	1	1	0	0	0	0	0	2	4	0	1	0	0	0	
Tires or Tire Pieces	0	0	1	3	2	1	4	0	0	3	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	10	10	10	0	2	13	0	0
Lumber & Construction Items	0	1	2	1	15	2	16	1	1	4	0	6	0	9	0	5	0	0	0	0	0	0	0	0	0	1	4	2	2	0	0	10	0	0
Unclassified Items	0	0	0	0	0	3	1	0	4	15	0	6	3	0	0	3	143	0	0	0	2	0	0	0	0	0	0	3	3	0	0	0	0	0
TOTAL MISCELLANEOUS ITEMS	3	4	3	4	21	12	22	1	7	22	0	13	3	9	1	12	147	6	1	1	4	0	0	0	0	3	19	15	16	0	2	23	0	0

TABLE II ROADSIDE LITTER DATA ADJUSTED TO A 30-DAY BASE

SECTION	I-1			I-2			I-3			II-1			II-2			II-3			III-1			IV-1			IV-3			V-1			V-2			TOTAL		
	77	78	79	77	78	79	77	78	79	77	78	79	77	78	79	77	78	79	77	78	79	77	78	79	77	78	79	77	78	79	77	78	79	77	78	79
ROADSIDE LITTER ITEM																																				
Newspapers, etc.	3	0	13	0	0	0	1	1	0	0	0	1	1	0	0	4	2	4	0	2	1	0	0	0	0	0	0	1	2	2	0	0	2	10	7	23
Paper Packages, etc.	16	0	34	7	3	30	17	1	39	15	0	30	10	35	2	33	18	2	4	10	5	3	3	0	0	0	6	4	3	2	0	4	113	94	149	
Other Paper Items	8	27	8	2	60	0	132	0	71	15	35	22	0	0	34	0	29	43	24	0	5	16	141	54	46 [†]	375 [†]	67 [†]	18	2	0	20	5	29	235	290	266
TOTAL PAPER ITEMS	27	27	55	9	63	30	150	2	110	30	35	53	11	35	36	37	49	49	28	12	11	19	144	54	0[†]	0[†]	0[†]	25	8	5	22	5	35	358	400	438
Plastic Packages	4	1	6	3	2	10	16	7	0	8	2	4	1	0	0	5	6	0	0	6	0	1	0	0	0	0	0	14	6	4	0	4	2	52	34	26
Other Plastic Items	2	0	0	0	0	4	12	0	0	4	8	7	0	10	0	5	10	0	3	10	0	0	0	0	0	0	11	8	3	1	5	5	0	39	46	23
TOTAL PLASTIC ITEMS	6	1	6	3	2	14	28	7	0	12	10	11	1	10	0	10	16	0	3	16	0	1	0	0	0	0	11	22	9	5	5	9	2	91	80	49
Beer Cans	11	0	0	1	0	0	9	0	0	5	2	0	8	2	0	5	0	0	4	6	0	0	0	2	0	4	0	10	8	3	2	0	1	55	22	6
Soft Drink Cans	2	0	0	0	0	0	1	1	0	2	2	1	1	2	0	3	3	0	0	2	1	0	0	0	0	1	2	6	4	2	4	1	1	19	16	7
Food Cans	1	0	4	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3	1	1	0	0	1	4	3	6
Other Cans	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	2	1	4	3
TOTAL CAN ITEMS	14	0	4	1	0	0	10	1	0	7	4	1	9	8	0	8	4	0	5	8	1	0	0	2	0	5	2	19	14	7	6	1	5	79	45	22
Returnable Beer Bottles	2	1	8	0	0	2	0	0	0	0	2	1	0	0	5	0	2	4	0	6	5	0	5	0	0	0	0	3	2	0	0	0	2	19	27	
Nonreturnable Beer Bottles	16	0	8	0	1	2	13	2	0	8	0	0	4	3	0	10	1	0	11	0	1	6	2	0	2	0	0	13	2	1	5	0	0	88	11	12
Returnable Soft Drink Bottles	2	0	0	0	1	2	0	0	0	0	0	0	0	0	7	0	0	4	0	2	1	0	0	0	3	0	0	0	2	1	0	0	0	5	5	15
Nonreturnable Soft Drink Bottles	3	0	0	1	2	0	3	0	0	1	0	0	4	2	0	4	0	0	1	0	0	3	0	0	0	0	0	4	2	1	2	0	0	26	6	1
Wine or Liquor Bottles	1	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	2	0	0	0	2	2	4	
Food Bottles or Jars	1	0	6	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	7	
Other Bottles or Jars	0	0	2	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	2	5	3	
TOTAL BOTTLES & JAR ITEMS	25	1	26	1	4	6	17	2	0	11	2	1	8	6	12	15	3	8	12	8	7	9	7	0	5	1	0	17	14	9	7	0	0	127	48	69
Auto Parts & Acces.	3	3	0	0	4	0	1	0	5	0	0	0	0	0	3	3	6	1	2	1	0	0	0	0	0	2	4	0	1	0	0	0	12	12	9	
Tires or Tire Pieces	0	0	2	3	2	1	4	0	0	2	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	10	10	10	0	2	12	20	15	26	
Lumber & Construction Items	0	1	4	1	15	8	17	1	2	3	0	1	0	9	0	5	0	0	0	0	0	0	0	0	0	1	4	2	2	0	0	10	30	28	28	
Unclassified Items	0	0	0	0	0	3	1	0	9	12	0	1	2	0	0	3 [†]	123 [†]	0 [†]	0	0	2	0	0	0	0	0	0	0	3	3	0	0	0	15	3	18
TOTAL MISCELLANEOUS ITEMS	3	4	6	4	21	12	23	1	16	17	0	2	2	9	0	9[†]	4[†]	0[†]	1	2	4	0	0	0	0	0	3	18	15	16	0	2	22	77	58	81
TOTAL FOR ALL CATEGORIES	75	33	97	18	90	62	228	13	126	77	51	68	31	88	48	79[†]	76[†]	57[†]	49	46	23	29	151	56	5[†]	6[†]	16[†]	101	80	42	40	17	64	732	631	655

* DELETED OUTLIERS

† DELETED FROM STATISTICAL COMPUTATION BECAUSE OF THE EFFECTS OF OUTLIERS

TABLE III - ANALYSES OF ROADSIDE LITTER
(E based on 95 percent confidence limits)

CATEGORY ITEM	\bar{X}	$\frac{1977}{E}$ ±	S_x	\bar{X}	$\frac{1978}{E}$ ±	S_x	\bar{X}	$\frac{1979}{E}$ ±	S_x	n	Percent Change 1977 to 1978	Percent Change 1977 to 1979
Paper												
Newspapers, etc.	0.9	0.9	1.4	0.6	0.6	0.9	2.1	2.6	3.8	11	-33	+133
Paper Packages	10.3	6.4	9.6	8.5	11.0	16.4	13.5	10.7	15.9	11	-17	+31
Other Paper	23.5	28.0	39.1	29.9*	31.4*	43.9*	26.6	17.4	24.3	10	+16	+13
Paper Category	35.8	29.3	41.0	40.0*	30.5*	42.6*	43.8	20.8	29.1	10	+12	+22
Plastic												
Plastic Packages or Containers	4.7	3.8	5.7	3.1	1.9	2.8	2.4	2.2	3.3	11	-34	-49
Other Plastic Items	3.5	2.6	3.9	4.2	3.0	4.5	2.1	2.5	3.7	11	+20	-40
Plastic Category	8.3	6.2	9.2	7.3	4.0	5.9	4.5	3.6	5.3	11	-12	-46
Cans												
Beer Cans	5.0	2.7	4.0	2.0	1.9	2.8	0.5	0.7	1.0	11	-60	-90
Soft Drink Cans	1.7	1.3	2.0	1.5	0.9	1.3	0.6	0.5	0.8	11	-12	-65
Food Cans	0.4	0.6	0.9	0.3	0.3	0.5	0.5	0.8	1.2	11	-25	+25
Other Cans	0.1	0.2	0.3	0.4	0.6	0.9	0.3	0.4	0.6	11	+300	+200
Can Category	7.2	3.9	5.9	4.1	3.0	4.5	2.0	1.6	2.4	11	-43	-72
Bottles												
Returnable Beer Bottles	0.2	0.4	0.6	1.7	1.4	2.1	2.5	1.8	2.7	11	+750	+1150
Nonreturnable Beer Bottles	8.0	3.4	5.1	1.0	0.7	1.1	1.1	1.6	2.4	11	-88	-86
Returnable Soft Drink Bottles	0.5	0.7	1.0	0.5	0.6	0.8	1.4	1.5	2.2	11	0	+180
Nonreturnable Soft Drink Bottles	2.4	1.0	1.4	0.5	0.6	0.9	0.1	0.2	0.3	11	-79	-96
Wine or Liquor Bottles	0.2	0.3	0.4	0.2	0.3	0.4	0.4	0.5	0.8	11	0	+100
Food Bottles or Jars	0.2	0.3	0.4	0.0	0.0	0.0	0.6	1.2	1.8	11	-100	+200
Other Bottles	0.2	0.4	0.6	0.5	0.8	1.2	0.3	0.4	0.6	11	+150	+50
Bottle Category	11.5	4.5	6.7	4.4	2.8	4.1	6.3	5.3	7.9	11	-62	-45
Miscellaneous												
Auto Parts & Accessories	1.1	1.0	1.5	1.1	1.1	1.6	0.8	1.0	1.5	11	0	-27
Tires or Tire Pieces	1.8	2.1	3.1	1.4	2.0	3.0	2.4	2.9	4.3	11	-22	+33
Lumber or Construction Items	2.7	3.4	5.1	2.5	3.3	4.9	2.5	2.3	3.4	11	-7	-7
Unclassified	1.5	2.7	3.7	0.3*	0.7*	0.9*	1.8	2.0	2.8	10	-80	+20
Miscellaneous Category	8.6	6.4	8.9	5.4*	5.2*	7.3*	8.1	5.6	7.8	10	-21	+19
All Five Categories	72.0	48.6	64.4	61.0*	32.7*	43.3*	65.1	23.5	30.5	9	-15	-10

* See footnotes on Pages 4 and 5.