Resource Services

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Georgia Recycling Survey 1995

Georgia Department of Community Affairs

Georgia Association of Recycling Industries

Printed on recycled content paper

6690 Roswell Rd, Suite 310-237
Atlanta, Georgia 30328
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Summary - Recycling in Georgia - 1995

2.97%	Old Newspaper (ONP)	140,744.1			
13.88%	Corrugated (OCC)	658,211.3			
10.26%	High Grade Paper	486,783.5			
2.85%	Mixed Paper	134,951.9	Total Paper	1,420,690.8	30.0%
0.14%	Plastic Bottles	6,777.7			
2.25%	Plastic - Other	106,896.0	Total Plastic	113,673.7	2.4%
1.63%	AL Cans	77,320.8			
5.01%	Other Non-ferrous	237,754.5			
0.05%	Lead/Acid Batteries	2,427.5	Total Non-ferrous	317,502.8	6.7%
0.07%	Steel Cans	3,407.0			
0.77%	White Goods	36,578.0			
40.11%	Other Ferrous (excluding autos)	1,902,350.7	Total Ferrous less Autos	1,942,335.7	41.0%
1.20%	Glass			56,932.3	
1.63%	Rubber			77,417.9	
1.36%	Textiles			64,396.0	
15.80%	Other*			749,525.0	

Total Tons Recycled (not including Auto Scrap)	4,742,474.2
Total Tons Disposed (per GA EPD)	9,824,592.2

Recycling Rate (Not Including Auto Scrap) 32.6%

Total Capital Investment in Georgia $1,984,073,377

Total Georgia Employees 13,339

*"Other" includes: oil, contaminated soil, restaurant grease, biodegradable materials, wood waste, and yard trimmings, pallets, antifreeze and solvents/paints, refrigerants, concrete, and polyurethane foam

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October 21, 1996

Mr. Leamon Scott
Georgia Department of Community Affairs
60 Executive Park South
Atlanta, Georgia 30329-2231

Dear Leamon:

We herewith deliver the final report of the 1995 recycling rate survey which you commissioned. This project was a joint effort of the Department of Community Affairs, the Georgia Association of Recycling Industries (GARI) and the Southeastern Chapter of the Institute of Scrap Recycling Industries (ISRI).

Methodology

Resource Services developed a one page survey form, based on our experience with similar projects in the states of Florida and Tennessee. The form was reviewed and modified by the Department, with input from Ross King of the Association County Commissioners of Georgia, Dr. Jim Kundell of the Vinson Institute of Government at the University of Georgia, and several recycling industry members. The form was designed to be simple, and to obtain updated data regarding the name, location, capital investment, employment, and types of materials recycled by individual companies in Georgia, as well as the amounts and types of materials recycled during calendar year 1995.

The survey was designed to have "dealer/processors" report only the tons of materials which they recycled and shipped out of the State of Georgia, and for "end users" to report only on the tons which they received from within the State of Georgia. This was done in an effort to prevent "double counting" of materials which are transferred (often several times) within the State.

The survey assured confidentiality to respondents, with all mailing and final compilation of results conducted by the national CPA firm of Shore and Azimov, P.C. (See attached letter).

The survey, with a cover letter signed by both GARI President Larry Plant, and DCA Commissioner Jim Higdon, was sent to a list of 740 recyclers, compiled from sources including the previous DCA Recyclers directory, computer databases, and telephone yellow pages directories. Several weeks after the first mailing, non-respondents were sent a second notice. All mailings included a stamped return envelope addressed to Shore and Azimov. Subsequent to the second mailing, a list of non-respondents was reviewed by the Executive Committee of GARI and the Department, and several large or significant recyclers were personally called to elicit their response. All responses were received and authenticated by Shore and Azimov, P.C. Finally, Resource Services reviewed the results for anomalies e.g. where it was obvious based on our experience that a response was in pounds (or gallons) rather than in tons and requested corrections from several respondents. Changes were then made to the database based on these corrections and finally verified by Shore & Azimov, P.C.

A point of controversy over studies such as this is the inclusion of scrap automobiles in the recycling numbers. Per your instructions, we developed a methodology to determine the amount of automotive scrap which would be expected to be included within the reported ferrous scrap recycled. The Institute of Scrap Recycling Industries estimates that approximately 10 million cars were recycled nationally in 1995, with an average weight of 2,000 pounds. Of that 2,000 pounds, approximately 25% is either nonferrous metals or non-metallics - in either case, not ferrous scrap. Therefore, 10 million recycled autos in 1995, would yield 6.7 gross tons (2240 pounds per gross ton) of ferrous scrap. During the same period, the total amount of ferrous scrap recycled from the United States (domestic scrap consumption plus scrap exports minus scrap imports) equaled 64.4 million gross tons. From this, we conclude that approximately 10.4 percent of all ferrous scrap recycled nationally is from the recycling of automobiles. From the total reported ferrous of 2,167,785.3 tons, 10.4 percent (225,449.6 tons) was subtracted from the total yielding a total ferrous recycling tonnage of 1,942,335.7 tons. Per your instructions, **the reported recycling rate below is based on the ferrous recycled less the approximation of automotive scrap,** although several other states include this material in their calculations.

Results

Of the 740 surveys originally mailed, 139 were returned by the U.S. Postal Service with invalid addresses. Others were returned with address corrections, which were changed in the database and remailed to the corrected address. 201 surveys were completed and returned to Shore and Azimov. Upon review, we determined that of the 740 facilities on the original list, less the 139 invalid addresses, there were 33 duplicate listings, 62 multiple locations for facilities on the list, 32 facilities clearly identified as being engaged in auto parts salvage (but included in the original list due to a phone book listing under "recycling"), and 12 facilities which should clearly not be included (such as insurance companies and trucking firms who were "associate members" of the Georgia Association of Recycling Industries. These facilities plus the invalid addresses total 278 which are deducted from the survey population. Additionally, since 21 of those listed above did send back a survey form (often to indicate their ineligibility) the 201 responses are also reduced by 21, yielding 180 valid responses. Therefore,

the survey had a response rate (180/462) of 39 percent. This should not however, be considered to be directly proportional to the total tons recycled, due to vast variances in size of individual companies and facilities.

The total tons reported recycled (not including scrap automobiles) from within the State was 4,742,474.2, as detailed on the enclosed summary page. Total tons of municipal solid waste disposed in Georgia during calendar year 1995, per the Environmental Protection Division of the Department of Natural Resources, was 9,824,592 tons. The recycling rate was calculated as follows:

$$\frac{\text{Tons Recycled}}{\text{(Tons Recycled + Tons Disposed)}}.$$

This calculation results in a reported recycling rate of 32.6 percent.[1] This rate is based solely on the responses received and includes no extrapolation of data. Therefore, the reported rate is conservative, with the actual amount of materials recycled in (and originating from within) Georgia being greater than the amount indicated by this survey. However, the majority of the major recyclers in Georgia did respond and their tonnage is included in this calculation.

It should be noted that while the total reported tons includes 749,525 tons from the category of "other" materials, which included used oil, solvents/paints, refrigerants, polyurethane foam, wood, concrete, yard trimmings, antifreeze and other biodegradable materials. The disposal of such materials is included in EPD's disposal figures (particularly as they included total tonnage disposed of all materials at construction and demolition debris landfills), and are therefore proper for inclusion in this calculation.

Those responding (86 of 225) to the question on total capital investment reported a **total of $1,984,073,377 invested in their facilities and 127 respondents reported employing 13,339 in Georgia.**

After reviewing the list of respondents and non-respondents, it is our opinion that double counting, while not completely eliminated, is negligible, and that the tonnage recycled and the resulting recycling rate for Georgia in 1995, is a conservative estimate of the total recycling activity in the State.

Recommendations

We recommend that while we consider the results of this first effort to be less than optimal, that the survey be conducted again in 1997 to determine recycling activity during 1996, correcting problems which we identified during the first survey. Prior to that next survey, we suggest that a peer review group be brought together to review the form, instructions, and methodology, and based on our experience this year, implement changes to further increase the potential response rate and accuracy. We

[1] If we had not subtracted the apparent automotive scrap from the total tons recycled, the total tons recycled would be 4,967,923.9, yielding a recycling rate of 33.6% - an increase of only 1% over the rate not including scrap automobiles.

particularly note that changes should be made with regards to the category of "other" materials, as this seemed to contain the most potential errors and confusion.

We recommend that the Department mail a summary of this study to all recyclers in the database (both respondents and non-respondents) to indicate the results and to urge their support of future surveys.

Respectfully submitted,
Resource Services, By

Steven L. Levetan, Principal

Contents:

Tab 1 - Letter and summary report - Shore and Azimov, P.C.

Tab 2 - Sample survey form and cover letter

Tab 3 - List - Respondents and materials handled

Tab 4 - List - Invalid addresses

Tab 5 - List - Non-respondents (note - some listed are facilities included in consolidated reports of respondents); location multiples; auto parts/salvage; duplicates; and not-applicable to this survey

Georgia Recovered Materials Reporting Form

January 1 through December 31, 1995

NOTE - ALL INFORMATION REPORTED IS CONFIDENTIAL AND WILL ONLY BE REPORTED AS AGGREGATE NUMBERS - THESE FORMS WILL BE TABULATED AND THEN DESTROYED BY AN INDEPENDENT CPA FIRM

INSTRUCTIONS:

1. Please fill out one form per company - aggregate if multiple locations.
2. For **Question 12 - DEALER/PROCESSORS** handling more than 1,200 net tons per year of recovered materials, **report only the tons of those materials listed which you shipped OUT OF THE STATE for recycling.**
3. For **Question 12 - END USERS** handling more than 1,200 net tons per year of recovered materials, **report only the tons of those materials listed which you RECEIVED FROM WITHIN THE STATE** for recycling.

Report all quantities in NET TONS (2,000 pounds per ton)

1. Company Name _____
2. Address _____
   Address _____
3. City _____
4. County _____
5. Phone _____ Fax _____
6. Contact Person _____
7. E-Mail Address _____
8. ☐ **Dealer/Processor** ☐ **End User / Consumer of recovered materials**
9. Approximate total capital investment in Georgia _____
10. Approximate total Georgia employees _____
11. **This facility handles more than 1200 net tons of recovered materials (recyclables) per year.**
    ☐ **Yes - Please complete the following section (question 12)** →
    ☐ **No - Please skip next section and return form with above items completed**

REPORT TONS HANDLED DURING CALENDAR YEAR 1995

	12. RECOVERED MATERIALS		TOTAL TONS *
Paper	Old Newspapers (ONP)		
	Old Corrugated Containers (OCC)		
	High Grades / Office Paper		
	Mixed Paper		
		Subtotal Paper	
Plastic	Plastic Bottles		
	All Other Plastic		
		Subtotal Plastic	
Metals	Aluminum Cans		
	Other Non-Ferrous		
	Lead Acid Batteries		
		Subtotal Non-Fe	
	Steel Cans		
	White Goods (appliances)		
	Other Ferrous		
		Subtotal Ferrous	
Glass	Glass Containers		
Rubber	Rubber (include tires)		
Textiles	Textiles		
Other	*Specify*		
	13. REPORTED TONS OF RECOVERED MATERIALS		

Effects of Including Automotive Ferrous Scrap in Georgia 1995 Recycling Rate Calculations

Total Autos (ISRI Estimate)	10,000,000
Lbs per auto	2,000
% Loss (ASR + Non Fe)	25%
Net Lbs per Auto	1,500
Total Auto Fe Scrap (GT)	**6,696,429**
1995 Domestic Fe Scrap Consumption (in GT)	57,000,000
1995 Fe Exports	10,400,000
1995 Fe Imports	3,000,000
Total 1995 US Fe Scrap Recycled	**64,400,000**
Percent Auto Fe scrap vs total Fe Scrap	**10.40%**
GA Example	
GA Total "other Fe" recycled	1,761,776
GA Auto Fe Scrap	183,193
GA 1995 Total Recycled	4,133,380
Percent of Total GA Recycling attributable to Auto Fe	4.43%

Effect on Total GA Recycling Rate

	With Auto Scrap		Without Auto Scrap
Total tons recycled	4,133,380		3,950,187
Total tons disposed	9,824,592		9,824,592
Recycling Rate	**29.61%**		**28.68%**
		Difference	0.94%

Prepared by Resource Services / Steven L. Levetan 9/17/96

Effects of Including Construction and Demolition Debris Disposal and "Other" Recycling in Georgia 1995 Recycling Rate Calculations

	Including C&D disposal and "other" recycling	Not including C&D disposal and "other" recycling	"other"** recycling tons
Disposal*	9,824,592.22	7,804,376.65	
Recycling	4,133,379.87	3,383,854.87	749,525.00
Total Disposal + Recycling	13,957,972.09	11,188,231.52	
Recycling Rate	**29.61%**	**30.24%**	

*1995 Calendar Year per GA EPD

** "Other" includes oil, contaminated soil, restaurant grease, boidegradable, wood waste, and yard trimmings, pallets, antifreeze and solvents/paints, refrigerents, concrete, and polyurethane foam

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Georgia 1995 Recycling Survey

Georgia Department of Community Affairs

Georgia Association of Recycling Industries

Purpose

- **Determine approximate rate of recycling of recovered materials in Georgia**
  - Not for State Solid Waste Reduction Goal
- **Determine approximate economic impact from recycling in Georgia**
  - Employees
  - Capital Investment
- **Data Base of Recyclers in Georgia**

Methodology

- **Keep it Simple - one page**
- **Encourage Participation**
  - DCA and GARI co-sponsorship
- **Confidential - use CPA**
- **Avoid "double-counting"**
  - Count at last possible point
    - shipped out of Georgia or
    - consumed from within Georgia
- **Review for "anomalies"**

Results

- **Recycling Rate =**

  $$\frac{\text{Tons Recycled}}{\text{Tons Recycled + Tons Disposed}}$$

4,742,474 tons recycled (excluding autos)
9,824,592 tons disposed (per GA EPD)

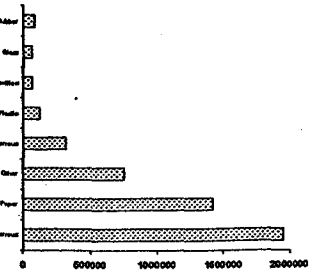
- **Recycling Rate = 32.6%**

Automotive Scrap

- **Nationally, auto scrap = 10.4% of total ferrous scrap recycled**
  - 10 million autos recycled 1995 with 1,500 pounds of Fe per car = 6.7 million Gross Tons
  - 64.4 million Gross Tons total Fe recycled from U.S. in 1995
- **10.4% of 2,167,785 total reported GA Fe tons = 225,450 ton auto scrap**

Results - Recycling by Material

- **Rubber - 77,418**
- **Glass - 56,932**
- **Textiles - 64,396**
- **Plastic - 113,674**
- **Nonferrous 317,503**
- **Other - 749,525**
- **Paper - 1,420,691**
- **Ferrous - 1,942,336 (excluding autos)**



Economic Impacts of Recycling in Georgia

- **Employees** **13,339**
  - 127 respondents out of 180
- **Capital Investment** **$1.98 Billion**
  - 86 respondents out of 180
- **Total Tons Recycled** **4.72 million**

Conclusions

- **There's a lot of recycling in Georgia**
  - Results are conservative - no extrapolation
- **Recycling industry is major employer**
- **Recycling industry has invested significant capital in Georgia**
- **These numbers should not be used for comparisons, but if they are, Georgia compares favorably**