North Carolina

SOLID WASTE MANAGEMENT

Annual Report

JULY 1, 2002 - JUNE 30, 2003

State of North Carolina
Michael F. Easley, Governor

Department of Environment and Natural Resources
William G. Ross Jr., Secretary

Reduce--Reuse--Recycle

Acknowledgements

This is the thirteenth annual status report prepared by the Solid Waste Section, Division of Waste Management and the Business and Community Assistance Section, Division of Pollution Prevention and Environmental Assistance. This report could not have been completed without staff assistance. Special thanks go to the following staff for providing data and information for this annual report:

Jim Coffey, Solid Waste Section, Chief
Paul Crissman, Solid Waste Section, Branch Head
Mark Fry, Solid Waste Section
Cheryl Hannah, Solid Waste Section
Jim Hickman, Pollution Prevention & Environmental Assistance
Brian Ketchem, Department of Transportation
Dexter Matthews, Division of Waste Management, Director
Pam Moore, Solid Waste Section
Scott Mouw, Community & Business Section, Chief
Bill Patrakis, Solid Waste Section
Percy Richardson, Department of Administration
Brent Rockett, Solid Waste Section
Rebecca Sluder, Solid Waste Section

The Solid Waste Section would like to thank the county managers, solid waste directors and recycling coordinators that provided much of the information used in this report. We would also like to thank two interns, Erin Rainny of North Carolina State University and Roxanne Thomas of Duke University.

For information on specific programs, contact:

North Carolina Department of Administration
1301 Mail Service Center
Raleigh, N.C. 27699-1301
(919) 807-2425
http://www.doa.state.nc.us

North Carolina Department of Environment and Natural Resources
Division of Waste Management
Solid Waste Section
1646 Mail Service Center
Raleigh, N.C. 27699-1646
(919) 733-0692
http://wastenotnc.org

North Carolina Department of Environment and Natural Resources
Division of Pollution Prevention & Environmental Assistance
1639 Mail Service Center
Raleigh, N.C. 27699-1639
(919) 715-6500
http://www.p2pays.org

North Carolina Department of Transportation
1591 Mail Service Center
Raleigh, N.C. 27699-1591
(919) 250-4128
http://www.doh.dot.state.nc.us

250 copies of this public document were printed at a cost of $830.91 or $3.32 per copy.
PRINTED ON RECYCLED PAPER

TABLE OF CONTENTS
N.C. SOLID WASTE MANAGEMENT ANNUAL REPORT
FISCAL YEAR 2002-2003

CHAPTER 1
PAST, PRESENT AND FUTURE:
SOLID WASTE FINDINGS AND RECOMMENDATIONS

This Consolidated Annual Report is required by the North Carolina General Assembly in G.S. 130A-309.06, as amended in 2001. The information presented is from 521 (100 county and 421 municipal) local government annual reports, 310 (including 12 out-of-state) permitted solid waste management facilities and 191 state agencies, institutions and schools. These reports represent activities related to the management of solid waste for the period July 1, 2002 through June 30, 2003.

This report combines several annual reports that were once issued separately by the Department of Environment and Natural Resources. The reports were the Comprehensive Solid Waste Management Report, the Scrap Tire Disposal Account Report, the White Goods Management Report and the Solid Waste Management trust fund Report. This report also includes information from the Department of Transportation regarding its use of recycled materials in contracts and data from the Department of Administration on bid procedures, the purchase of materials with recycled content and a summary of items purchased with recycled content.

Key Findings

- The state per capita disposal rate was 1.23 tons per person per year, a 1 percent increase over the 1.22 rate from last fiscal year or an increase of 14 percent from the base year of FY 91-92.
- North Carolina disposed of 10,236,960 tons of waste in North Carolina and out-of-state facilities. This represents an increase of 237,676 tons from the previous fiscal year.
- A total of 9,399,418 tons of solid waste was received at North Carolina permitted solid waste management landfills during FY 02-03. Almost 133,145 tons originated from other states, an increase of 15,164 import tons over the previous period. South Carolina and Virginia accounted for all imported waste.
- Ten North Carolina counties accounted for 49 percent of the solid waste disposed in the state. Sixty-one counties exported waste to landfills in Virginia, South Carolina, Tennessee and Georgia.
- Major materials recovered by North Carolina local governments during FY 02-03 were paper (57%), metals (23%) and glass (11%).

Recommendations

Once again, most North Carolina counties have not halted the trend of increased waste generation and disposal. The state has moved forward with improvements to the state's solid waste management methods. Gains include better record keeping, the ability to calculate landfill capacity, enhanced public participation and more strategic planning. However, no overall progress has been made toward the primary goal of decreasing per capita waste disposal. For this reason, the recommendations in this report are the same as those in last year's report. These goals must be achieved to decrease future waste disposal.

- Increase source reduction, municipal solid waste recycling and source-separated composting of organics to reduce the need for additional municipal solid waste disposal capacity as the population grows and predicted per capita disposal amounts increase.
- Enhance infrastructure and markets to increase source reduction and both MSW and special waste recycling to reduce the need for additional disposal capacity.
- Reissue and enforce Executive Order 156 [http://www.p2pays.org/ref/03/02221.pdf], which first passed in July 1999.

Solid Waste Disposal

This past year, the amount of waste disposed in North Carolina increased as it has for the past nine years. Despite the long trend, the increase was surprising because waste disposal amounts typically

decrease during economic recessions. This did not happen. Both the total amount of waste disposed and the amount disposed on a per capita basis increased.

The state measures changes in waste disposal rates by comparing the current per capita waste disposal base year (FY 91-92) per capita rate. (**Formula: Total Tons Disposed ÷ Population = Per Capita Disposal Rate**). Negative numbers indicate a decrease in the per capita disposal rate; positive numbers an increase. Changes from year to year are no longer measured as waste reduction, but as a change from the base year. As seen in the following table, North Carolina continues to increase the absolute amount of waste disposed. The per capita increases have continued for *seven consecutive years*.

Fiscal Year	Tons Disposed	Population	Per Capita Disposal Rate	Change from 1991-1992
2002-2003	10,236,960	8,323,375	1.23	14 %
2001-2002	9,999,284	8,188,008	1.22	13 %
2000-2001	9,752,510	8,049,313	1.21	12 %
1999-2000	(adjusted*) 9,937,355	7,938,062	1.26	16 %
1999-2000	10,267,137	7,938,062	1.30	20 %
1998-1999	9,214,323	7,797,501	1.19	10 %
1997-1998	8,607,578	7,645,512	1.13	5 %
1996-1997	(adjusted*) 8,041,734	7,490,812	1.08	0 %
1996-1997	8,741,727	7,490,812	1.17	8 %
1995-1996	7,722,795	7,336,228	1.06	-2 %
1994-1995	7,624,144	7,180,525	1.07	-1 %
1993-1994	7,038,505	7,036,927	1.00	-7 %
1992-1993	6,890,818	6,892,673	1.00	-7 %
1991-1992	(managed**) 7,257,428	6,781,321	(Base Year Rate) 1.08	
1991-1992	6,822,890	6,781,321	1.01	
1990-1991	7,161,455	6,632,448	1.08	

*The 1996-1997 and 1999-2000 fiscal years are adjusted by subtracting the tonnage estimated to be a result of Hurricanes Bertha, Fran (1996-1997), and Floyd (1999-2000).

**The tons managed figure was determined by adding the total amount of municipal solid waste disposed in landfills and incinerators to the amount of waste managed through local governments' recycling, composting and mulching efforts in FY 91-92. Recycling, composting and mulching were added to the tons disposed in recognition of the fact that some local governments had begun waste reduction before 1991.

Statewide solid waste disposal reporting began in FY 90-91. The state made slight reductions in per capita waste rates in the early 1990s. Several factors caused this reduction. Tipping fees were established and the additional cost created an incentive to explore alternatives to municipal solid waste or construction and demolition landfills. Strong public and private interest helped local governments start recycling and waste reduction programs in response to state mandates and a perceived disposal crisis. During the early part of the decade, the state and country were in recession. Many waste professionals cite the depressed economy as the primary cause of the waste reduction.

In the mid 1990s, state waste disposal rates increased significantly. Even when allowances for two natural disasters were factored in, the disposal increase was considerable. The rebounding economy was one cause, but when both the state and nation entered a recession the expected waste reduction did not occur. The reporting period that ended on June 30, 2003 closed with a 238,000-ton increase over the previous period. The recession analysis model no longer appears useful when analyzing waste management changes.

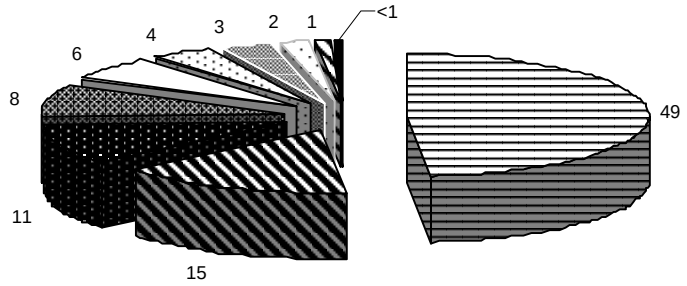
The estimated amount of waste attributed to Hurricane Fran in FY 96-97 was based upon past waste and per capita disposal trends. Counties reported actual totals following Hurricane Floyd in FY 99-00, so the figure is more precise. Hurricane Isabel debris data will appear in the next Annual Report because landfall occurred in September 2003.

In FY 99-00, a total of 329,782 tons of disaster debris was reported. After reviewing 13 years of waste disposal data, the adjusted figures for FY 99-00 still remain higher than expected. The discrepancy is probably due to under-reporting of hurricane-related disposal amounts.

No discernible pattern appeared when individual counties' year-to-year trends were analyzed. In FY 02-03, the 10 North Carolina counties that hold 41 percent of the state's population produced nearly 49 percent of the waste. These large counties dramatically impact North Carolina disposal totals.

Four counties disposed of less waste this reporting period than last. Cumberland was close to a 20 percent decrease. The decrease is attributed to an 80,000 ton drop in construction and demolition material from military base renovations and a substantial military deployment.

North Carolina Waste Distribution by County FY 2002-2003



Counties grouped into 10 county increments by descending order of waste disposal

Ten Largest Waste Producing Counties Ranked by Volume

County	Tons Disposed FY 00-01	Tons Disposed FY 01-02	Tons Disposed FY 02-03	Percent N.C. Waste FY 02-03	Cumulative Percent FY 02-03	Change From FY 01-02	Percent Change
MECKLENBURG	1,233,824	1,279,090	1,278,129	12.49%	12.49%	(961.16)	-0.1%
WAKE	926,504	880,136	856,043	8.36%	20.85%	(24,093.20)	-2.8%
GUILFORD	730,012	758,566	709,579	6.93%	27.78%	(48,986.94)	-6.9%
FORSYTH	465,134	447,508	501,034	4.89%	32.68%	53,526.58	10.7%
CUMBERLAND	351,620	403,476	337,375	3.30%	35.97%	(66,101.53)	-19.6%
DURHAM	238,894	260,680	298,420	2.92%	38.89%	37,740.13	12.6%
BUNCOMBE	251,472	247,830	255,112	2.49%	41.38%	7,282.25	2.9%
NEW HANOVER	259,305	241,951	250,327	2.45%	43.83%	8,375.90	3.3%
CABARRUS	187,508	203,981	250,162	2.44%	46.27%	46,181.50	18.5%
GASTON	215,226	214,185	216,267	2.11%	48.38%	2,081.99	1.0%
TOTAL	4,859,499	4,937,403	4,952,448	48.38%	48.38%	15,045.52	
TOTAL N.C. COUNTIES	**9,752,510**	**9,999,284**	**10,236,960**	**100.00%**	**100.00%**	**237,676.00**	

Landfill Capacity Needs

North Carolina has 41 operational MSW landfills. The total capacity of all North Carolina landfills measures approximately 206 million cubic yards with room for approximately 118 million tons of MSW waste. The estimate was obtained using the state's average utilization factor of .57 tons of waste per cubic yard of air space. The estimate does not include waste exported to other states.

If North Carolina's rate of landfill use remains steady at last year's rate of 605,000/tons per month, one might assume the state has 16 years of landfill capacity. However, the capacity figure is misleading. (Please see the next table) Much of the state's capacity is not widely available due to permit conditions, franchise arrangements, political decisions and distance.

Limiting factors include the fact that the Camp Lejeune landfill is for Marine Corps base use only; the Alamance County landfill is permitted to accept only Alamance County waste; and the Upper Piedmont landfill is permitted for a maximum 600 tons per day. Many landfills' franchise agreements only allow them to accept waste from a particular distance around the landfill; other landfills chose not to accept waste from other jurisdictions, although their permit and franchise allow it. Additionally, landfill owner/operators may elect not to construct or use all of their permitted space.

The primary limiting factor is accessibility. In North Carolina the maximum distance that waste travels averages just under 100 miles one-way. Minor exceptions exist, but the average is supported by an examination of "waste sheds" or service areas that was developed from 2001-2002 data.

Clearly, the concept of statewide capacity does not translate into statewide access. Regions of the state have limited capacity. If out-of-state capacity is eliminated, the capacity numbers shrink further. At present, statewide capacity does not appear to be a problem. However, regions may experience disruptions and additional costs as facilities close, open, change jurisdictions or alter the average distance waste is transferred.

The last "new" landfills permitted by the state *that are still in operation* received permits in 2000. They are located in Anson, Sampson and Mecklenburg Counties. One landfill that was permitted in 2003 is under construction in Lenoir County. No other landfill permits issued since 2000 have resulted in a landfill being constructed and becoming operational.

Total MSW Landfill Capacity Analysis for North Carolina

Volume Airspace Used (yd^3)	83,439,238.00
Tons Disposed	47,936,314.57
2002-2003 Tons Disposed	7,258,143.68
Months of Operation	
Utilization Factor (tons/yd^3)	0.57
Lifetime Ave. Tons Disposed Per Month	537,311.92
2002-2003 Ave. Tons Disposed Per Month	604,845.31

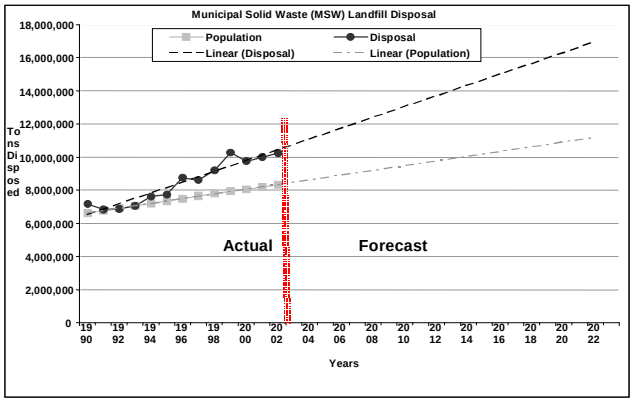
	Permitted	***Total***
Original Available Airspace (yd^3)	125,748,044.00	289,211,652.00
Remaining Airspace (yd^3)	42,308,806.00	205,772,414.00
Remaining Capacity for Tonnage (tons)	24,306,648.55	118,217,416.69
Remaining Capacity in Months	40.19	195.45
Remaining Capacity in Years	3.35	16.29

Includes data from the forty-one active MSW landfills in the state

Calculations

- Avg. Tons Disposed Per Month = Tons Disposed / Months of Operation
- 2002-2003 Avg. Tons Disposed Per Month = 2002-2003 Tons Disposed / 12 months
- Utilization Factor = Tons Disposed / Volume of Airspace Used
- Remaining Airspace = Original Available Airspace – Volume of Airspace Used
- Remaining Capacity for Tonnage = Remaining Airspace x Utilization Factor
- Remaining Capacity in Months = Remaining Capacity for Tonnage / 02-03 Avg. Tons Disposed Per Mo.
- Remaining Capacity in Years = Remaining Capacity in Months / 12 months

Note: See capacity analysis for state and each MSW landfill at end of this report.

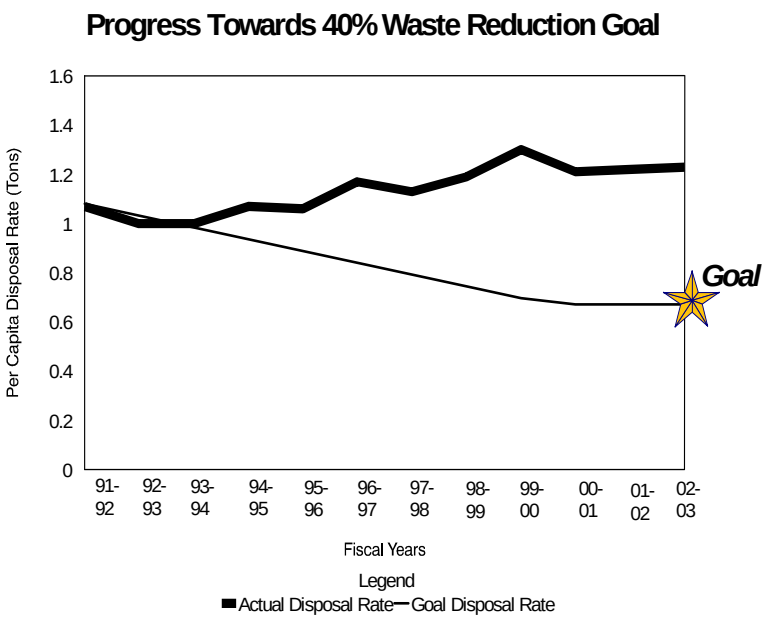


Future Waste Disposal Needs

Future waste disposal forecasts are created by regression analysis. In other words, historical trends are used to predict future amounts. When absolute population growth is factored in, North Carolina is predicted to dispose of approximately 14 million tons in 10 years and close to 18 million in 20 years. This amount equals nearly a ton and a half of waste for every resident by 2012. The forecast does not include the impact of natural disasters, such as hurricanes. The obvious implication of this trend is that demand for landfill space will increase with time.

State Waste Reduction Goal

The 1991 amendment to the Solid Waste Management Act of 1989 (Senate Bill 111), established a statewide goal to reduce the amount of waste landfilled 40 percent by 2001. This reduction was to be measured on a per capita basis from FY 91-92. Since then, *waste disposal has increased 14 percent - from 1.08 to 1.23 tons per person per year*. The statewide goal was not met and the state per capita rate continues to increase, although several counties achieved the state's waste reduction goal.



Alleghany, Cleveland, Martin and Orange counties all recorded 40 percent or better reductions from the base year of FY 91-92. Orange County's reduction is remarkable because its population numbers over 100,000, the area is part of the rapidly growing Research Triangle Park, and it has achieved large waste reductions over a long period of time. This county, and the municipalities in the county, have very aggressive, long-standing recycling and waste reduction programs that divert a variety of materials. Some innovative programs include providing local bars and restaurants with a recycling service, salvaging construction and demolition waste, banning non-residential corrugated cardboard from the landfill and a food waste diversion program. The other counties that reached the goal do not appear to have aggressive programs, but they have experienced decreased economic activity. In the absence of aggressive recycling programs, the goal may have been attained through reduced economic activity or the counties' base year data may not be accurate.

Statewide, the reasons for not achieving the goal are complex and interrelated. Three fundamental reasons that contributed to the failure are: changes in the dynamics of waste disposal, a lack of commitment to waste diversion, and economics.

Waste management dynamics changed dramatically after the goal was established. Alternative technologies, such as incineration and mixed waste composting, did not develop as anticipated. Despite a great deal of interest and significant investment in these technologies, they did not impact landfill disposal as expected. Additionally, the U.S. Supreme Court overturned legislation on flow control and prohibited local governments from directing waste to certain disposal facilities. Waste is legally considered a commodity and must be allowed free movement.

The commitment to reduce waste has waned over the years. The 40 percent goal came to be perceived as "just a goal" and not a mandate. Funding and resources for waste reduction activities never occurred at the levels required or anticipated for waste reduction success. Also, anticipated landfill bans did not get enacted. Other environmental issues took center stage as the "solid waste crisis" of the late 1980s appeared to be solved.

The economics of landfill disposal have changed since the goal was adopted. As more private landfill owners competed for tonnages, tipping fees remained low. Landfills did not become as expensive to operate as initially projected. Landfill customers readily adapted to the tip fees and did not pursue waste reduction as a way to control costs. The combination of the strong state and national economies of the early 90s, coupled with moderate disposal costs, reduced the motivation to divert materials from landfills. Surprisingly, the recent economic downturn did not result in a statewide waste disposal decrease.

Landfills Remain Difficult to Site

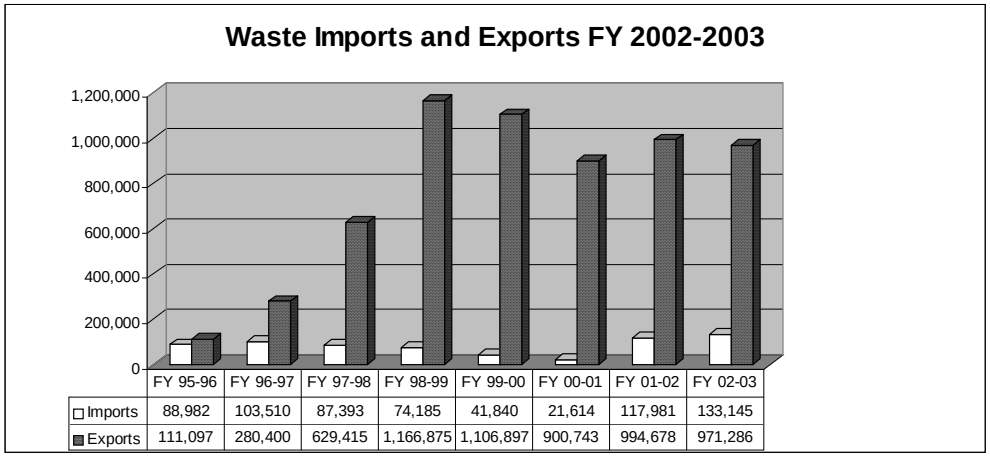
Efforts to gain local government approval to site or expand landfills continue to be difficult. Despite the fact that landfills are an essential component of any comprehensive program that safely and economically manages solid waste, recent decisions for new MSW landfills have been challenged under various legal procedures. For many years, North Carolina's landfills were mostly county owned and operated. These facilities primarily served the county where they were located. Today, most of North Carolina's municipal solid waste goes to regional landfills located inside or outside of the state. These regional landfills may be owned by local governments, private waste management companies, or a combination of the two. Compared to local landfills, they serve much larger geographic areas.

Current requirements to obtain a landfill permit require local governments to certify to the state that they have jurisdiction over the proposed location and that they have given approval for the facility. The local approval process includes a number of opportunities for public participation. The state permit review process, which follows local approval, considers the local government approval process. The state also conducts additional review procedures. These review considerations make up a significant portion of the legal challenges.

Public response to landfills is intensely negative, especially from citizens who would neighbor proposed sites. The response is consistent and applies equally to regional facilities and "local" facilities that only serve the county where they are located. Most local, elected officials cite negative public response as their primary reason for denying approval for proposed landfills.

The Solid Waste Section has initiated a program to offer residents - especially those impacted by a potential landfill permit decision - more opportunities to participate in the permitting process. After the section receives a site suitability application or a request to modify an existing permit, it holds a series of public meetings. The process has two steps. The first meeting is open to residents and businesses that neighbor the landfill. The goal is to reduce the large crowds that commonly attend public meetings so that neighbors can ask questions and engage in dialogue with permitting staff. The second, larger meeting targets the entire county. Where necessary, concerns expressed in the meetings are forwarded to the appropriate government or non-government agency.

Imports & Exports



	FY 95-96	FY 96-97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	FY 02-03
Imports	88,982	103,510	87,393	74,185	41,840	21,614	117,981	133,145
Exports	111,097	280,400	629,415	1,166,875	1,106,897	900,743	994,678	971,286

North Carolina continues to export more waste than it imports. Approximately 9.5 percent, or a total of 971,286 tons of the total waste disposed in FY 02-03, was exported. This 23,000 ton drop compared to FY 01-02 represents a minor decrease.

In FY 95-96, North Carolina exported waste to one South Carolina landfill. Now, sixty-one North Carolina counties export waste to eleven out-of-state landfills and two transfer stations. Back and forth movement - where waste leaves the state only to re-enter it - has continued for the second consecutive year. A transfer station in South Carolina received 77,217 tons of waste from Mecklenburg County, then sent the waste back to North Carolina for disposal. For this reason, the amount has not been included in the report's import or export totals. Imports continued to increase because some North Carolina landfills are located near state borders. In FY 95-96 only one landfill located in Forsyth County received imported waste. Currently nine landfills in North Carolina receive some out-of-state waste. North Carolina transfer station reports and voluntary reports from out-of-state facilities provide the data used to track imports.

CHAPTER 2
GOVERNMENT WASTE REDUCTION ACTIVITIES

Local governments provide annual reports on source reduction, reuse, recycling and composting activities statewide. They also provide data on other aspects of solid waste management. The data are used to determine the scope and effectiveness of North Carolina's waste reduction efforts. It also helps planners spot trends in program implementation.

Source Reduction and Reuse Programs

The number of local governments with source reduction and/or reuse programs increased slightly from 109 to 112. The minor increase is probably due to fluctuations in reporting methods. The stagnation shows reduction and reuse programs continue to be overlooked by most governments as cost-effective components of a comprehensive waste reduction program.

On a more positive note, the number of swap shop programs in North Carolina has grown consistently over the past six years, although the FY 02-03 total dropped by one. Again, the fluctuation is probably due to inaccurate reporting. One government reported adding a swap shop program, but the Division of Pollution Prevention and Environmental Assistance found two local governments had improperly reported operating swap shop programs.

Currently, 33 local government programs host 69 swap shops. These swap shops account for almost 1,400 tons of cost-effective reuse each year. Although the number of swap shop programs has been steady in recent years, a new DPPEA grant round should increase the number of programs over the next few years.

Source Reduction and Reuse Programs Operated By Local Governments

Program Type	FY 96-97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	FY 02-03
Source Reduction Programs							
Backyard Composting	82	81	53	59	64	67	69
Grass Cycling	41	43	41	36	35	29	38
Xeriscaping	11	13	12	11	8	8	11
Junk Mail Reduction	56	55	57	64	64	61	65
Enviroshopping	36	35	35	32	31	27	32
Promotion of Non-toxics	39	35	30	31	33	27	27
Other	9	1	5	6	3	4	2
Reuse Programs							
Swap Shops	10	17	22	23	28	34	33
Paint Exchange	28	25	27	23	19	19	19
Waste Exchange	11	14	8	8	4	3	4
Pallet Exchange	N/A	N/A	7	7	9	6	5
Other	4	6	15	10	8	9	11
Local Governments Programs	104	116	123	110	117	109	112

Local Government Recovery Programs

Despite a drop in the number of curbside and drop-off recycling programs, material recovery grew 23.6 percent in FY 02-03. Most growth is related to increased yard waste recovery, but the non-yard waste category grew almost 6 percent compared to population growth of 1.65 percent. The bulk of the non-yard waste increase was due to more pallets being ground for boiler fuel. The two ice storms in the last fiscal year had a significant impact. Organic material recovery rose over 220,000 tons. Yard waste, which includes ice storm debris, and pallets are reported under the organics category.

Paper product recovery grew by roughly 2.5 percent in FY 02-03. With five years of continued growth, paper is definitely the bellwether commodity of local government programs. The strong market infrastructure for paper commodities should allow continued growth at a similar rate.

Metal recovery decreased slightly. White goods stockpiled during 2000 appear to have been processed during FY 01-02, which created an artificial spike. Metal recovery returned to more normal levels in FY 02-03. Plastics and other recyclable were the only other two categories to decline in FY 02-03.

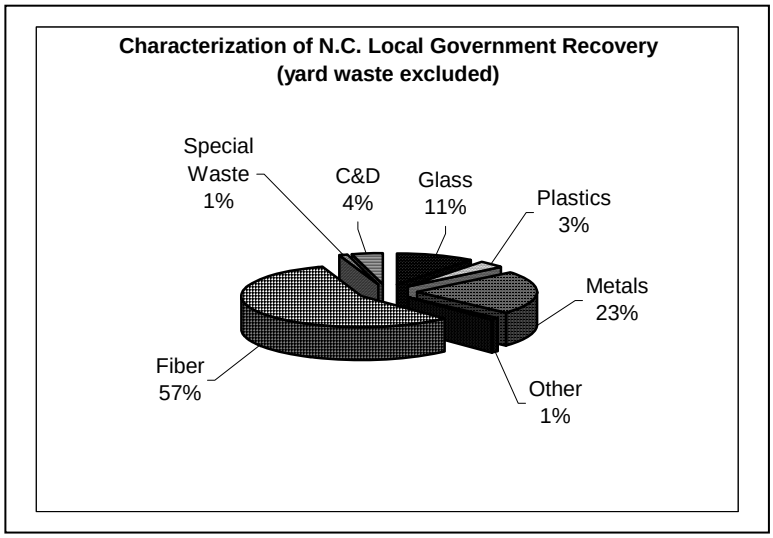
Local Government Recovery (Tons) and Performance Measures

Material	FY 93-94	FY 94-95	FY 95-96	FY 96-97	FY 97-98
Total Paper	164,806	185,270	212,577	228,025	216,121
Total Glass	37,537	38,088	49,601	44,978	43,449
Total Plastics	9,797	12,339	16,253	13,699	14,399
Total Metal*	51,468	59,483	65,977	77,252	81,262
Total Organics**	350,142	495,034	498,583	640,410	504,554
Special Wastes***	2,106	2,466	3,212	3,230	3,527
C & D Debris	N/A	N/A	N/A	N/A	N/A
Other	16,387	5,987	333	12,762	35,977
Totals	**632,243**	**798,667**	**846,536**	**1,020,356**	**899,290**
Per Capita Recovery (lbs.)	**182.00**	**226.19**	**235.59**	**279.19**	**242.03**
Recovery Ratio (Recycling:Disposal)	**0.09**	**0.10**	**0.11**	**0.13**	**0.11**

Material	FY 98-99	FY 99-00	FY 00-01	FY 01-02	FY 02-03
Total Paper	233,339	241,859	263,365	267,840	275,538
Total Glass	41,623	41,826	46,936	49,891	51,433
Total Plastics	14,835	14,474	15,062	17,269	16,807
Total Metal*	77,564	86,480	92,634	114,786	109,723
Total Organics**	525,033	638,757	540,582	468,901	689,027
Special Wastes***	3,817	4,907	4,947	5,426	5,926
C & D Debris	N/A	59,598	15,406	17,648	20,002
Other	63,794	5,329	6,120	5,896	4,626
Totals	**960,005**	**1,093,032**	**985,052**	**947,657**	**1,173,082**
Per Capita Recovery (lbs.)	**254.40**	**285.61**	**243.66**	**231.47**	**281.88**
Recovery Ratio (Recycling:Disposal)	**0.10**	**0.11**	**0.10**	**0.10**	**0.11**

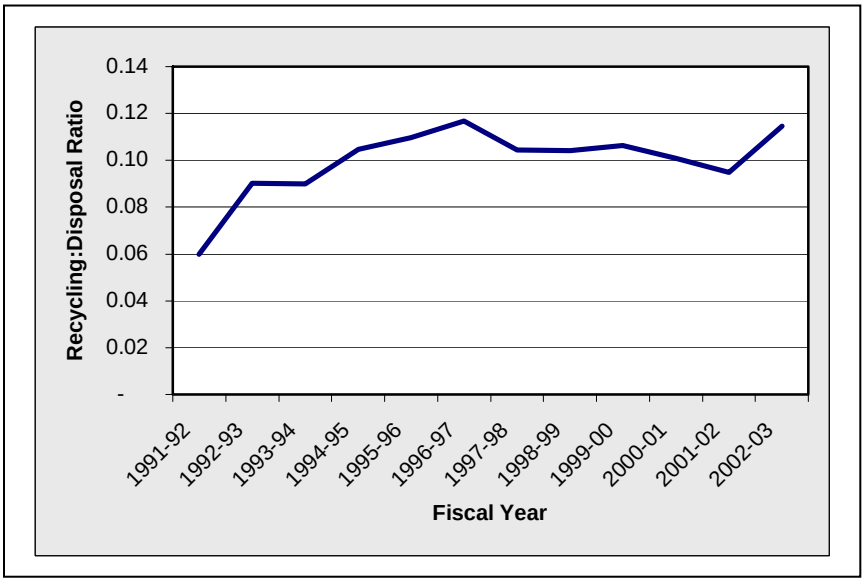
* Includes white goods, aluminum cans, steel cans and other metals.
** Includes yard waste, pallets and wood waste.
*** Includes electronics, used oil, oil filters, antifreeze and batteries.

For a breakdown of materials recovered by local governments during FY 02-03, excluding yard waste, see the following figure. Fiber (paper products) makes up 57 percent of the material recovered by local governments. Metals comprise about 23 percent of the mix. The metals category includes white goods, which account for more than 65 percent of local government metal recovery. The third largest category is glass, followed by construction & demolition, plastics, special wastes - like electronics and used oil – and other wastes.



The ratio of recycling to disposal increased this year to slightly more than 0.11. An increasing slope in the figure below indicates that recycling grew more than disposal on a percentage basis. The sharp increase in this year's ratio is due to the high quantities of yard waste managed after two ice storms. A similar spike occurred in 1996-97 following Hurricane Fran.

Ratio of Recycling to Disposal – FY 91-92 to FY 02-03



North Carolina's top 10 waste producing counties continued to represent almost half of all waste disposed in the state. Although recycling dropped slightly, these counties represent 44.6 percent of all local government recycling. Of the top 10, only Guilford, Durham and Buncombe counties contributed a greater percentage of state's recycled tonnage than their share of the disposed tonnage, in part because of excellent municipal programs in those counties.

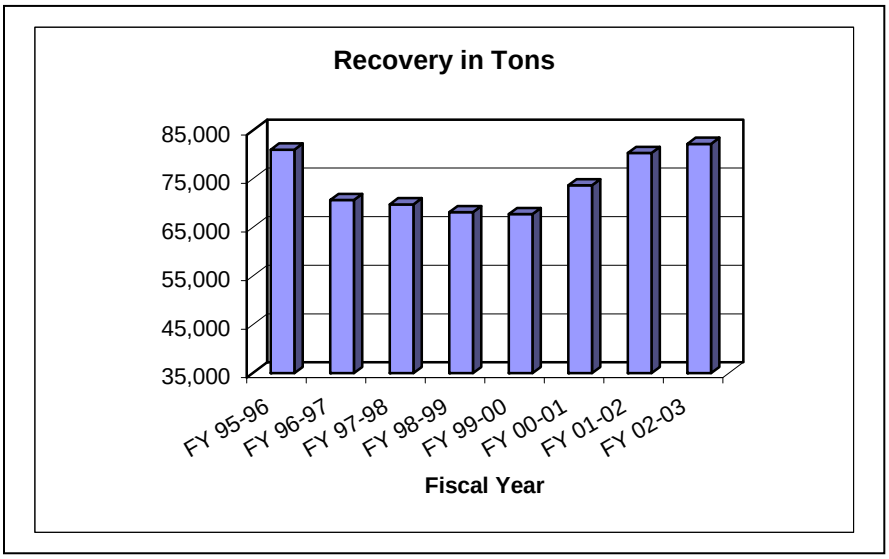
Disposal vs. Recycling in Ten Largest Waste Producing Counties FY 02-03

County	Disposal	Recycling	Contribution to Disposal	Contribution to Recycling*
Mecklenburg	1,278,129	52,084	12.5 %	10.0 %
Wake	856,043	39,612	8.4 %	7.6 %
Guilford	709,579	45,828	6.9 %	8.8 %
Forsyth	501,034	19,193	4.9 %	3.7 %
Cumberland	337,375	2,675	3.3 %	0.5 %
Durham	298,420	18,673	2.9 %	3.6 %
Buncombe	255,112	35,310	2.5 %	6.8 %
New Hanover	250,327	8,655	2.4 %	1.7 %
Cabarrus	250,162	5,336	2.4 %	1.0 %
Gaston	216,267	4,813	2.1 %	0.9 %
Total	**4,952,448**	**232,179**	**48.4 %**	**44.6 %**

*Includes recovery from county and municipal sources. Yard waste and special waste (e.g., used oil) recycling are excluded.

Recovery of Traditional Materials

Container recovery (glass, plastic and metal) grew by more than two percent in FY 02-03. This represents the third consecutive year of growth in this category and indicates good program participation. At 82,210 tons, container recovery finally surpassed the all-time high reported in FY 95-96. Despite this positive trend, recovery rates closely matched population growth. This indicates that population growth, instead of increased recovery, is the most likely reason for the increase.



Despite positive trends in the recovery of traditional materials, there is significant concern that falling participation rates have seriously hurt local government recovery efforts. Statewide, the average participation rate for curbside recycling programs is 56.3 percent. An increase to 70 or 75 percent would greatly improve recovery and local programs' cost-effectiveness.

Local Government Recycling Program Management

Citing continued fiscal concerns, 15 local governments dropped curbside recycling programs in FY 02-03. Seven local governments discontinued drop-off location programs. The programs account for almost 2,000 tons of material that might have been recovered if the programs were operating.

Contributions from curbside and drop-off recycling programs changed slightly during FY 02-03. After years of steady numbers, overall contribution to recycling by curbside programs dropped from 42 to 38 percent, but drop-off contributions to recycling tonnages increased from 40 to 44 percent. This change is likely due to the decrease in curbside recycling programs and improved white goods recycling reports. The amounts recovered by other programs (17 percent) and mixed waste processing (1percent) stayed steady.

Counties continue to rely on publicly operated drop-off collection systems and municipalities routinely use curbside collection programs. Of the 94 reported county drop-off programs, 50 percent were publicly operated, 33 percent contracted operations and 17 percent were a hybrid of public and contracted operations. Most municipal curbside programs (77 percent) are operated by contractors.

Local recovery fluctuations were minimal during FY 02-03. Fifty-eight percent of local governments with recycling programs collected roughly the same amount this period as last. The remaining 42 percent collected less than the previous year.

Total Recovery by Program Type

Program Type	Total Tons		% of Total Recovery	
	FY 01-02	FY 02-03	FY 01-02	FY 02-03
Curbside	204,173	198,432	42%	38%
Drop-off	198,516	227,838	40%	44%
Mixed Waste Processing	3,544	3,545	1%	1%
Other Programs	83,934	89,765	17%	17%

Special Waste Management

FY 02-03 saw slow growth in the collection of special wastes like motor oil, oil filters, lead acid batteries, and household hazardous waste (HHW). Although local government programs make a significant contribution, many North Carolina residents are unserved or underserved with regard to the collection of these materials. In eight North Carolina counties, no oil recycling programs exist. In 29 counties, only one collection site exists. Very few jurisdictions collect oil filters and antifreeze. Residents in more than 70 counties have no alternative to landfilling or stockpiling their household hazardous wastes.

On a more positive note, 68 local governments reported FY 02-03 participation in the North Carolina Department of Agriculture & Consumer Services' pesticide container recycling program. Another 25 communities collected paint, although they did not accept any other HHW waste.

Local Government Special Waste Management, FY 98-99 - FY 02-03

	FY 98-99	FY 99-00	FY 00-01	FY 01-02	FY 02-03
Used Motor Oil					
Number of programs	127	126	125	127	125
Gallons collected	736,436	873,548	839,234	903,951*	907,123
Oil Filters					
Number of programs	11	14	18	20	21
Tons collected	6.61	10.34	16.15	17.79	18.64
Antifreeze					
Number of programs	46	49	54	56	58
Gallons collected	9,568	15,977	33,304	27,668	26,308
Lead Acid Batteries					
Number of programs	79	90	90	86	86
Number collected	58,237	74,737	82,043	80,912	92,292
Household Haz. Waste					
Number of programs	17	24	24	28	31
Number of permanent sites	10	13	12	17	17
HHW tons collected	1,017.78	931.82	1315.3	1483.97	1540.59
Total cost reported	**$1,672,271 ($1,643/ton)**	**$1,644,818 ($1,765/ton)**	**$1,792,125 ($1,363/ton)**	**$2,180,355 ($1,469/ton)**	**$2,161,359 ($1,403/ton)**

*Data adjusted from FY 01-02 Annual Report.
Conversion Key: Oil, 1 gallon = 7.4 lbs.; Antifreeze, 1 gallon = 8.42 lbs.; Lead Acid Battery, 1 battery = 35.9 lbs.

Yard Waste Management

The two large ice storms in FY 02-03 caused yard waste totals to explode. The difference between this year and last was increased by the FY 01-02 drought, which resulted in the lowest yard waste totals in seven years. The table below shows overall FY 02-03 tonnages and the 42 percent increase from the previous year. Ice storms hit the western Piedmont particularly hard – Winston-Salem reported handling more than four times its usual tonnage of yard waste. Increases in other urban areas, such as Greensboro and Orange County, were matched by the impacts on many small and medium-sized towns.

Due to the excellent infrastructure developed in response to the long-standing yard waste disposal ban, the vast majority of ice storm debris was diverted to mulch and composting operations. However, perhaps because local capacities were overtaxed, private facilities also reported a sizable FY 02-03 rise in the amount of locally collected yard waste.

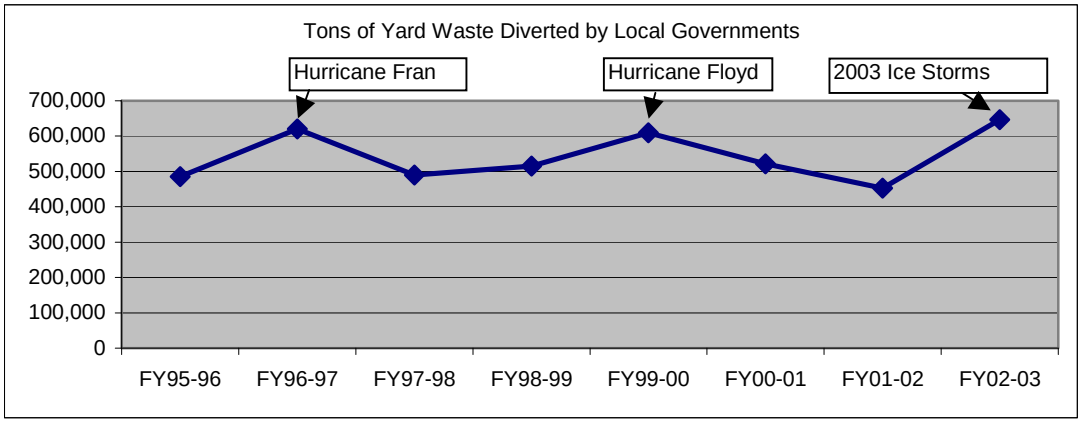
Local Government Yard Waste Management FY 01-02 and FY 02-03

Destination of Materials	FY 01-02 tons managed	FY 02-03 tons managed	% Change
End Users (direct delivery)	31,151	64,164	106%
Local mulch/compost facility	421,340	582,677	38%
TOTAL DISPOSAL DIVERSION	**452,491**	**646,841**	**43%**
Other Public Facility*	87,112	125,990	45%
Private Facility*	49,691	152,567	207%
LCID Landfill*	153,320	133,505	-13%
YARD WASTE TOTALS**	**655,502**	**932,913**	**42%**

* Land Clearing and Inert Debris. The tonnages are not included in the "Total Disposal Diversion" figure to avoid duplicate reporting and due to uncertainty about the wastes' disposal.

** Yard Waste Totals do not include tonnage attributed to "other public facilities" to avoid duplicate reporting.

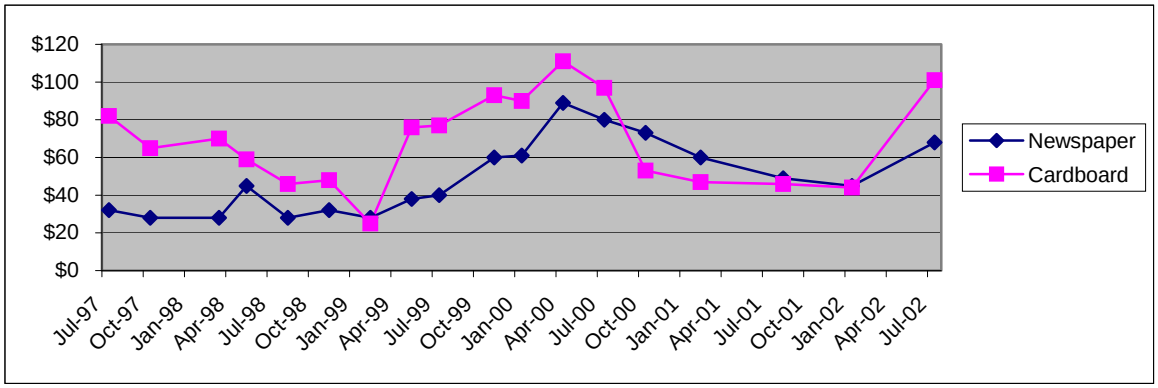
Yard Waste Diverted from Disposal by Local Governments, FY 95-96 – FY 02-03



Recycling Markets, Prices, and Related Developments

Recycling markets for commonly collected materials remained stable in FY 02-03. The following table shows the material price trends experienced by three major processing centers in eastern, central and western North Carolina. The fluctuations noted are normal for recyclable material pricing; no materials experienced major price swings.

Material Price Trends – Price Per Ton, Baled



Green glass remains the only material where the market charges a price to accept material. Glass generally poses a problem for recycling markets located in remote areas of the state. Problems arise due to the high cost of transport relative to the sales price. New Hanover County processes glass on-site for use as aggregate in its landfill. They are the only county known to do this, but the program may begin a trend that saves other community recycling programs money over time.

Composite Recycling Market Prices Received by Major N.C. Processors, FY 02-03

Materials	Summer 2002	Fall 2002	Summer 2003
Aluminum cans, Lbs., loose	$ .45	$ .46	$ .47
Steel cans, Gross Tons, baled	$ 21.00	$ 29.00	$ 40.00
PETE*, Lbs., baled	$ .06	$ .06	$ .09
HDPE**, Lbs., baled	$ .12	$ .12	$ .10
Newsprint, Ton, baled	$ 68.00	$ 79.00	$ 60.00
Corrugated, Ton, baled	$101.00	$ 66.00	$ 73.00
Office paper, Ton, baled	$123.00	$132.00	$127.00
Mixed paper, Ton, baled	$ 48.00	$ 39.00	$ 32.00
Clear glass, Ton	$ 23.00	$ 23.00	$ 18.00
Brown glass, Ton	$ 15.00	$ 15.00	$ 26.00
Green glass, Ton	-$ 4.00	-$ 4.00	-$ 4.00

* Polyethylene teraphalate

** High density polyethylene

There are indications that some areas of the state underutilized their processing capacity for recyclable materials. Material recovery facilities (MRFs) in Greenville and Jacksonville state they could handle additional material. The Greensboro MRF was recently upgraded, and two new MRFs opened in Raleigh and the Asheville area, respectively. However, other areas in the state need processing capacity to foster increased recycling. Fayetteville cites the lack of a nearby MRF as one factor inhibiting them from starting curbside recycling.

Organics recycling received a major boost in FY 02-03 when a large composting facility opened in the Triangle area. Wood fuel users in eastern North Carolina and the upper Piedmont also indicate a healthy demand for material – at times, they struggled to get an adequate supply.

Some significant additions to the state's recycling infrastructure are anticipated in FY 03-04. A glass end-user is scheduled to begin operating in Pasquotank County, a construction waste recycling facility is planned for High Point, and a large composting facility is due to open in the Greenville area. Early indications show that markets for curbside materials will remain stable in FY 03-04. Stable market conditions should give local governments steady demand for their recyclables.

CHAPTER 3
LOCAL GOVERNMENT ASSISTANCE

Solid Waste Management Trust Fund

This report details FY 02-03 Solid Waste Management trust fund activities and expenditures. The trust fund is administered by the Division of Pollution Prevention and Environmental Assistance (DPPEA) in the Department of Environment and Natural Resources. It was created by the Solid Waste Management Act of 1989 (SB 111) and is funded by partial proceeds from a fee on the sale of new tires, a tax on virgin newsprint, and an advance disposal fee (ADF) on white goods (appliances). Additional revenues can come from appropriations and contributions. The purpose of the trust fund is to support a range of solid waste management activities including: technical assistance to local governments, businesses, and other entities on solid waste issues; public educational programs; research and demonstration projects; and recycling market development (G.S. 130A- 309.12).

The Solid Waste Management trust fund received revenues totaling $961,392 in FY 02-03. When added to the beginning balance on July 1, 2002 of $1,694,112, a total of $2,655,504 was managed in the trust fund during FY 02-03. Actual expenditures totaled $503,140, which left a fund balance of $2,152,364 on June 30, 2003. The balance held $527,560 in encumbrances for standing grant contracts (the grants are paid periodically on a reimbursement basis). The unencumbered balance was $1,624,804.

The relatively large, unencumbered balance in the trust fund at the end of FY 02-03 is unusual. It reflects a slowdown or cancellation of normally scheduled grant cycles for the fiscal year. This is a direct result of state budget problems. DPPEA did not proceed with a normal level of grant-making to preserve trust fund assets in the event they were needed to cover overall budgetary shortfalls. Because the trust fund was not used for that purpose, the large end-of-year balance resulted. In normal budgetary circumstances, grant cycles reduce the balance for the fiscal year by at least $600,000. A grant cycle that helped fund local government recycling initiatives was completed in late FY 02-03, but the encumbrances for that cycle did not take place until early FY 03-04.

Trust Fund Expenditures and Revenues

Funds	Total FY 02-03
Beginning Balance	$ 1,694,112
+ Revenue	$ 961,392
- Expenditures	$ 503,140
Ending Balance	$ 2,152,364
Encumbrances	$ 527,560
“Uncommitted” funds - 6/30/03	$ 1,624,804

Trust Fund Revenue Sources

Revenue Source	Total FY 02-03
Tire Tax	$ 543,253
White Goods ADF	$ 356,653
Newsprint Tax	$ 486
Appropriations	$ 0
Contributions and Misc.	$ 61,000
Total Revenues	$ 961,392

Trust Fund Revenue Sources

FY 02-03 trust fund revenues came from four of five possible sources identified in the General Statutes. Activity for each revenue source is described below:

- **2 percent Tire Tax** – Revenues from the tax on new tire sales totaled $543,253, just more than 56 percent of total trust fund revenues in FY 02-03 and up slightly from $536,119 in FY 01-02.
- **White Goods Tax** – Proceeds from the ADF on white goods accounted for $356,653, slightly more than 37 percent of total revenues for FY 02-03. White goods proceeds were 2.7 percent higher in FY 02-03 than in FY 01-02.
- **Virgin Newsprint Tax** – North Carolina newspaper publishers that fail to meet state-required purchasing goals for recycled content newsprint must pay a $15 per ton tax on the virgin newsprint they consume. The law allows wide exemptions for companies unable to purchase recycled content newsprint due to availability or pricing constraints, or who actively recover newspaper for recycling. During FY 02-03, $485.82 was received from this tax. Compliance with the law has been consistent. In 10 years, the annual revenue from the newsprint tax has never been higher than $3,000.

- **General Appropriations** – When the trust fund was first established in 1989, a one-time appropriation of $300,000 was allocated to provide an initial fund balance. There have been no further appropriations since 1989.
- **Contributions to the trust fund and miscellaneous revenues** – DPPEA continued a recycling promotion campaign in FY 02-03 that entailed cost-sharing partnerships with local governments and private sector contributors. Local governments contributed $48,500 toward the campaign and private sources provided $12,500. The list of Recycle Guys partners is provided in Attachment A.

Trust Fund Expenditures

Continuing state budget problems in FY 02-03 confined DPPEA to only one grant cycle. Grant funds awarded in FY 02-03 are actually encumbered in early FY 03-04. The completed grant round is described below. Other major FY 02-03 expenditures fell into two categories: 1) continuing the Recycle Guys promotional campaign and 2) delivering technical assistance to North Carolina communities, recycling businesses and waste generators. These activities are two explicit purposes noted for the trust fund in G.S. 130A- 309.12.

Solid Waste Reduction Assistance Grants

The Solid Waste Reduction Assistance Grants (SWRAGs) are a standard annual grant cycle DPPEA offers to local government and nonprofit recycling programs. The grants support specific projects that enhance the effectiveness of local and nonprofit recovery efforts. SWRAGs usually include targeted grant categories that increase activity in certain program areas or increase the recycling of certain commodities.

The FY 02-03 SWRAGs began when a Request for Proposals was sent to local governments and nonprofit agencies involved in waste reduction. Funding categories included Swap Shops, Backyard Composting, Paper Reduction and Recycling, Mercury Recovery, Buy Recycled activities, Construction & Demolition Salvage and Reuse, Material Recovery Facility funding, and a General category. Nineteen proposals were received and evaluated through “blind vote” scoring that uses specific point criteria. The seventeen proposals selected received a total of $249,222 in grant awards. One grant of $50,000 for MRF development was withdrawn when the grantee’s project proved untenable, leaving a total of $199,222 in grant awards for the 2003 cycle. These grants were encumbered and put under contract in early FY 03-04.

Recycle Guys Campaign

In FY 02-03, North Carolina continued the “Recycle Guys” educational campaign to recapture public enthusiasm for recycling and boost participation rates. The Recycle Guys television commercials on cable television make up the foundation of the campaign. Using cable allows specific demographic groups to be targeted. The broadcasts are co-funded by DPPEA and by local government partners. Local governments contributions totaled $48,500 in FY 02-03, which made a $118,000 broadcast contract possible. The commercials will run through March 2004.

DPPEA also used trust fund resources in FY 02-03 to provide local governments with integrated media campaign materials so they could fully implement the Recycle Guys program on a local level. Supported by a generous $12,500 donation from the North Carolina Soft Drink Association, the funds were used to print and distribute Recycle Guys trading cards, which are very popular with children.

After three years, DPPEA and its funding partners are seeing a payoff on the substantial resources invested in the campaign. Both DPPEA and local governments continually receive anecdotal evidence that the characters and their message are widely recognized and understood. When DPPEA surveyed children in classrooms and other group settings where the ads were broadcast, they found an astounding recognition rate of 81 percent, with some classes at 90 to 100 percent. Many children could recite specific messages from the ads. The survey documented a high degree of excitement and enthusiasm

for the campaign. Even if local governments do not see immediate changes in recycling participation rates, the educational component of the Recycle Guys campaign has proven its effectiveness.

Technical Assistance Activities

North Carolina General Statutes direct DPPEA to use trust fund monies to generally promote waste reduction and recycling, generally and specifically provide technical assistance to local governments, and to build recycling markets. Here is a summary of DPPEA's FY 02-03 activities that meet these requirements.

- **Waste Reduction Partners Program**

The Waste Reduction Partners (WRP) is highly successful. It uses retired engineers and business professionals to provide environmental technical assistance to companies and local governments in western North Carolina. In a continuation of funding from FY 00-01 and FY 01-02, DPPEA provided $25,000 to WRP in FY 02-03 to support industrial solid waste audits and other recycling activities. With this funding, WRP helped western North Carolina businesses and other entities divert 13,500 tons of solid waste from landfills. The $25,000 was leveraged to yield estimated savings of $1.3 million in disposal costs. During FY 02-03, WRP conducted solid waste reduction work in 13 western counties.

- **Staff Support**

To accomplish its statutory technical assistance, public education and recycling market development requirements, the trust fund was used to support DPPEA staff positions. A total of $130,769 was paid for salaries, benefits, and limited operational support. The positions are:

Recycling Market Development Specialist- This position provides marketing assistance to local governments and others involved in recyclable materials collection. As a part of DPPEA's Recycling Business Assistance Center, this person strengthens recycling capacity for secondary materials collected statewide. This employee also manages the recycling markets directory required by state statute and performs other duties.

Waste Management Analyst- In addition to work with local recycling coordinators, this position also develops educational materials and programs on solid waste issues for school age to adult audiences. The position implements the integrated "Recycle Guys" campaign statewide to boost North Carolina's recycling participation rates.

Waste Management Analyst- This position provides technical assistance to local governments' waste reduction programs, including solid waste planning and full cost accounting (statutory requirements for local governments). The position also manages recycling program data from state-mandated local waste reduction reports. The data is used to complete the N.C. Solid Waste Management Annual Report.

Organics Recycling Specialist- This position provides technical assistance to local governments, recycling businesses, waste generators and the general public on how to reduce and compost organic waste streams, including yard waste, which is banned from disposal by state statute.

- **Graduate Intern Program**

Through a contract with the Water Resources Research Institute (WRRI) of the University of North Carolina, DPPEA hires student interns for a full year. Student projects in FY 02-03 included: 1) assessing the Recycle Guys campaign, 2) developing best management case studies on local recycling programs, 3) revamping and updating the local government recycling Web page, 4) establishing re-refined oil on state term purchasing contracts, and 5) helping to develop recycling markets and improve local programs.

Product Stewardship Initiative Support

"Product Stewardship" is a growing movement by state and local governments to increase manufacturers' responsibility for their products environmental impacts. Product stewardship includes diverting those products to recycling. Greater manufacturer responsibility for end-of-life products reduces tax burdens on state and local governments who currently manage the waste. In FY 02-03, North Carolina joined the Product Stewardship Institute, the lead coalition of state and local governments working on this issue. DPPEA also providing nominal support for the Carpet America Recovery Effort (CARE), a negotiated national agreement between state governments and the carpet industry that promotes carpet recycling.

Temporary Assistance

North Carolina statutes require solid waste management annual reports from all counties and municipalities. The data is used to create the Solid Waste Management Annual Report. North Carolina Statutes also require operating a recycling market directory. DPPEA hired temporary labor to manage the large set of data required to perform these tasks. The additional staff also allowed DPPEA to increase the amount of technical assistance resources available to local governments.

Publications and Outreach Efforts

DPPEA used trust fund resources for a number of technical assistance and outreach activities. Some of the activities were: printing and distributing the *Recycling Works* newsletter and other fact sheets; conducting workshops and sessions at the Carolina Recycling Association and North Carolina Chapter of the Solid Waste Association of North America conferences; and travel costs incurred so technical assistance could be provided to local governments and trust fund grantees. DPPEA normally uses appropriated funds for these items, but state budget shortfalls eliminated that resource.

Planned Expenditures for FY 03-04

In FY 03-04, the Solid Waste Management trust fund will continue to support local government recycling programs and expand the Recycle Guys campaign. DPPEA will also resume its normal grant cycles, with an emphasis on improving and increasing recycling businesses' capacity to process and use additional materials. The trust fund will also support western North Carolina's Waste Reduction Partners program, and funds will be used to help North Carolina participate in national coalitions that promote product stewardship.

For more information about the North Carolina Solid Waste Management trust fund, contact Scott Mouw, Chief, Community and Business Assistance Section, Division of Pollution Prevention and Environmental Assistance, at (919) 715-6512.

ATTACHMENT A: TRUST FUND REVENUE SOURCES

The North Carolina Solid Waste Management trust fund received 88 percent of its revenues in FY 02-03 from two sources: statewide fees on the purchase of new tires and white goods. The trust fund only receives a small portion of these fees.

Scrap Tire Tax - During this reporting period, a 2 percent fee was levied on the purchase of new tires.

- 68 percent of the revenues were distributed to counties on a per capita basis to pay for proper discarded tire management.
- 27 percent was credited to the Scrap Tire Disposal Account for local government grants and nuisance tire site cleanups.
- 5 percent went to the Solid Waste Management trust fund.

White Goods Tax - During this reporting period, a $3 fee was levied on major appliance purchases.

- 72 percent of revenues were distributed to counties on a per capita basis for proper white goods management.
- 20 percent was credited to the White Goods Management Account for local government grants to manage discarded white goods.
- 8 percent went to the Solid Waste Management trust fund.

FUNDING PARTNERS FOR THE FY 02-03 RECYCLE GUYS CAMPAIGN

Partner Name	Amount Given
Mecklenburg County	$10,000
Town of Cary	$5,000
City of Greensboro	$5,000
City of Winston-Salem	$5,000
City of Raleigh	$5,000
Wake County	$5,000
Davidson County	$2,500
Orange County	$1,000
Johnston County	$5,000
City of Durham	$2,500
City of Burlington	$2,500
North Carolina Soft Drink Association	$12,500
TOTAL	**$61,000**

ATTACHMENT B: 2003 SOLID WASTE REDUCTION ASSISTANCE GRANT PROJECTS

Grant Recipient	Award	Grant Description
Food Bank of North Carolina	$16,770	The Food Bank of North Carolina will purchase equipment to improve sorting efficiency and increase the volume of foodstuffs they distribute to four food bank warehouses throughout the state.
Bladen County	$10,500	Bladen County will install swap shops at several convenience centers.
Coastal Regional Solid Waste Management Authority	$10,200	CRSWMA will implement a latex paint recovery program in Carteret, Pamlico and Craven counties.
Greene County	$15,540	Greene County will purchase new recycling containers and increase signage and educational materials at county convenience sites.
The Scrap Exchange	$11,350	The Scrap Exchange will host a reuse craft booth at the N.C. State Fair to educate visitors about waste reduction.
Classroom Central	$6,420	Classroom Central will purchase equipment to turn reused and donated materials into usable educational tools for needy school children in Mecklenburg County.
New Hanover County	$20,000	New Hanover County and the Town of Wrightsville Beach will add mixed paper to the materials collected at convenience centers.
Town of Kernersville	$19,842	This project will use 35 eight cubic-yard containers to collect cardboard from commercial customers.
Pasquotank County	$19,800	Pasquotank County will install equipment to improve the efficiency of its commercial paper recycling programs. The change allows the county to collect more material and reduce operating costs.
Carolina Recycling Association	$9,800	CRA will develop and conduct three workshops on how to implement local electronics recycling programs.
Town of Beaufort	$4,000	The Town of Beaufort will conduct a reduced-price backyard compost distribution program for town residents.
Wake County	$20,000	Wake County will expand its electronics recycling program to include new items.
Caldwell County	$7,000	Swap sheds will be constructed at three staffed collection centers. The sheds will accept reusable household goods.
Cabarrus County	$4,000	Cabarrus County will hold a compost bin truckload sale, offer composting classes, and upgrade the existing demonstration site.
Albemarle Resource Conservation & Development Council	$20,000	Chowan, Gates, Bertie, Hertford and Northampton counties will participate in an oil recycling program that distributes 85 double-walled plastic recycling containers to area farms. U.S. Filter will pick up the oil directly from the farms.
Keep Gastonia Beautiful	$4,000	KGB will develop a compost demonstration site with educational signage, construct two portable vermicomposting bins and corresponding classroom education materials, and conduct a truckload sale of a minimum of 100 compost bins.

CHAPTER 4
STATE AGENCY WASTE REDUCTION EFFORTS

Executive Order 156,signed in 1999 in support of North Carolina Project Green, the state environmental sustainability initiative, was an update and strengthening of the original initiative of Executive Order 8, signed in 1993.[1] State agencies are directed to use products containing recycled materials by state law and executive order. Purchasing recycled and other environmentally preferable products strengthens recycling markets, helps reduce environmental impacts from waste, and saves energy and natural resources. Many state agencies and local school districts help achieve these goals through thoughtful purchasing decisions and the use of recycled products.

North Carolina state government continues to make progress toward environmental sustainability by offering recycled and environmentally preferable products at affordable prices on state contract. Currently, 11 product categories are available on state term contract that offer products with recycled content materials. Several more available products offer some sort of environmentally preferable attribute, including recycled content packaging or energy efficiency. State agencies and others who can use state term contracts, such as local governments, find they offer a variety of high quality, cost-effective recycled products. The list of products is at http://www.doa.state.nc.us/PandC/recycled.htm.

This chapter summarizes state agencies' efforts to purchase recycled products. The compilation includes purchasing reports required from 28 state government departments and offices, 18 constituent institutions of the University of North Carolina, 58 community colleges, and 117 local public school administrative units. Agency reports meet the reporting mandate of N.C. General Statute 143-58.2(f).

In FY 02-03, 86 percent of agencies (191 out of 221) reported their purchases. With 24 additional agencies reporting, the group of respondents grew by 10 percent. Nine agencies that reported in two previous years did not report for FY 02-03. Most non-reporting agencies have not complied with the regulations for the past four years or longer. Reports were collected online to save paper and postage.

The Division of Pollution Prevention and Environmental Assistance has been charged with compiling the data and publishing an annual summary. To view purchasing reports, visit www.p2pays.org/buyrecycled, call (919) 715-6505 or (800) 763-0136.

Purchases of Recycled Products

Paper and Paper Products- Reported agency purchases for all office paper and paper products (recycled and non-recycled) in FY 02-03 totaled $41,284,807. In FY 01-02, agency purchases were reported at $25,781,557 – a significant decrease from past years. After review and correction, the revised FY 01-02 total was $34,158,947, which is eight percent less than the previous fiscal year. Since FY 99-00, paper purchases have declined steadily, primarily due to waste reduction and increased electronic communication. Spending constraints from the state's budget crisis also played a role in the decrease. This year's total is 17 percent higher than the previous year. Part of the increase is due to better reporting, but it possibly also reflects fewer purchasing restrictions in FY 02-03.

Recycled paper purchases, which totaled $32,420,289, rose 19 percent from the past period. Recycled paper made up 79 percent of all reported paper purchases – a two-year gain over the previous period's revised total. The increase is gradual and may not reflect the changes made on term contracts last year. Last year, all term contracts offered recycled content paper. Purchasers may not have been aware of the 100 percent recycled content offerings. In the next fiscal year, virgin paper will reappear on state term contracts due to a one-dollar per ream price difference. The price difference could easily be neutralized with waste reduction techniques, such as double-sided printing and using one-sided pages for fax

[1]North Carolina Department of Pollution Prevention & Environmental Assistance, Environmental Statutes /Executive Orders for State Agencies, "Executive Order 156, Governor Jim Hunt (1996). <www.p2pays.org/ref/03/02221.pdf > [2 Feb 2004].

machines. Making the virgin paper available once again could significantly hinder the state's effort to reach the goals set in Executive Order 156.

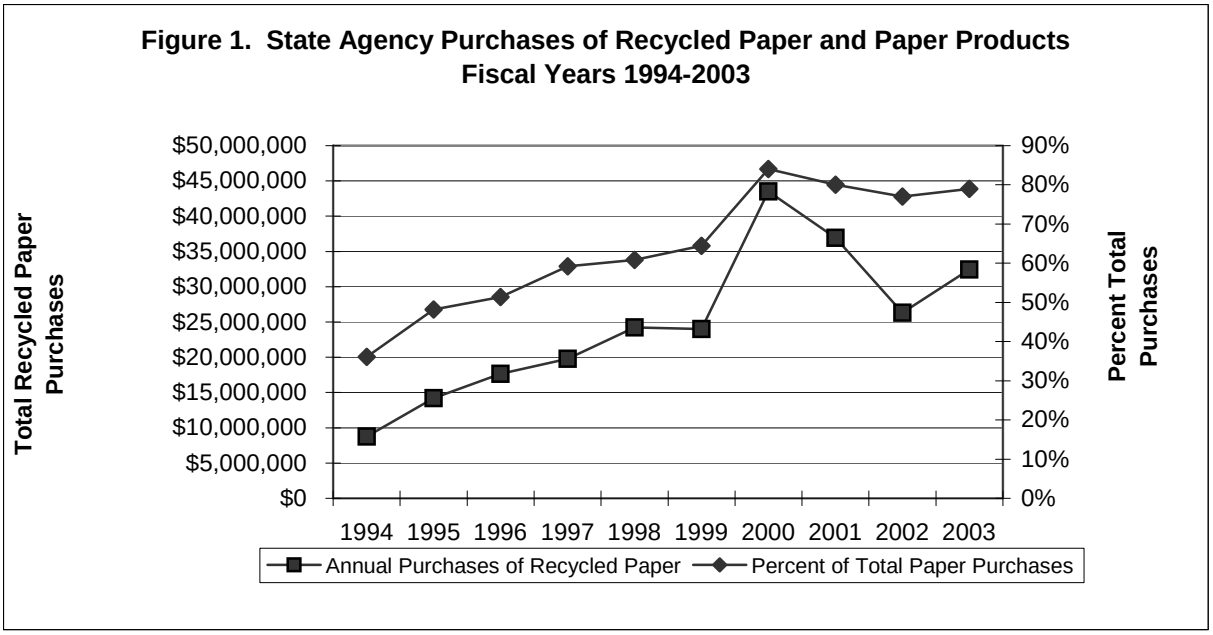
Fiscal Year 02-03 was the second year that agencies failed to meet Executive Order 156's goal, "State agencies shall attempt to meet the goal that, as of Fiscal Year 00-01, 100 percent of the total dollar value of expenditures for paper and paper products be toward purchases of paper and paper products with recycled content."[2] Twenty-three agencies reached the 100 percent goal this fiscal year for all paper purchases; two more than last year. Another 36 agencies achieved recycled content paper purchasing rates of 95 percent or higher; 48 percent had a 90 percent rate - a 5 percent increase over last year. Less than one-fifth of reporting agencies purchased only office paper containing recycled content. Over one-third of the reporting agencies bought recycled content towel/tissue products exclusively.

Of the miscellaneous paper purchased - including legal pads, file folders, labels and continuous feed forms – 50 percent contained recycled content. This percentage could easily grow with education, given many of the same products with recycled content are available on term contracts. Office paper and towel/tissue purchases with recycled content had higher percentages of 84 and 88, respectively.

Reporting agencies also report on whether they specifically request recycled content paper in contracted printing work. Only 53 percent did this consistently in FY 02-03, 15 percent less than in 1997. Reported spending on outside print orders increased 20 percent from the previous year. Of the $14,814,280 reported, 65 percent was spent on jobs using recycled paper, a 2 percent increase over the previous period.

Figure 1 illustrates purchasing trends for overall dollar amounts and percentages of recycled paper purchases over the past 10 fiscal years. The data show greater efforts are needed to achieve the 100 percent goal across all agencies. If top management displayed a renewed emphasis and commitment to meet the statutory and executive goals, compliance would probably rise. Targeted outreach campaigns to agencies using quantities of virgin paper purchased would also help.

Figure 1. State Agency Purchases of Recycled Paper and Paper Products Fiscal Years 1994-2003

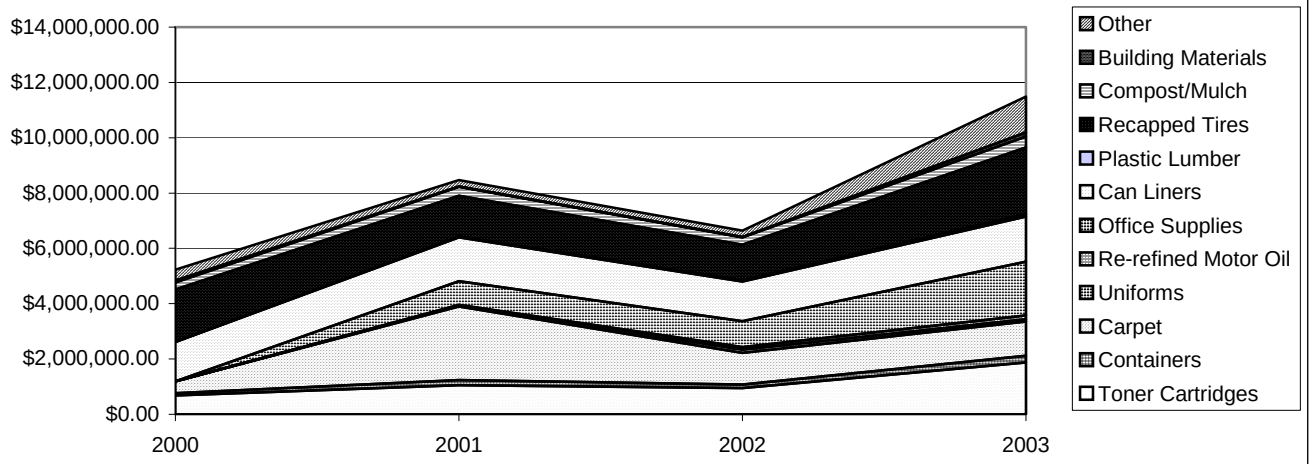


Policy and Administrative Support- When agencies were surveyed regarding buy recycled policies or goals, 36 percent reported having a policy or goal. Agencies also reported fewer administrators communicate the importance of purchasing recycled content products. This finding is consistent with last year's data, when less than two-thirds of agencies reported receiving this information. This percentage is 15 percent lower than that for 1997. Lead coordinators for buy-recycled efforts are also on the decline, with less than half reported in place this year. While agencies are not required to develop a policy by the

general statutes or executive order, such policies could be an effective first step to improve the state's efficiency in recycled content product purchases. However, agencies are specifically required to purchase recycled content products and designate a lead coordinator. Executive Order 156 also requires administrator encouragement, a key component in successful recycled content procurement programs. Improving these factors could significantly increase participation levels.

Non-Paper Products- Agencies report spending $11,486,122 for non-paper recycled products in FY 02-03, a 42 percent gain over the previous period. Figure 2 displays the array of recycled products purchased by agencies: remanufactured laser toner cartridges, plastic can liners, recapped tires, plastic lumber, compost and mulch, re-refined motor oil, carpet and uniforms are a few major categories. Category spending levels reach all-time highs with the exception of carpet, which gained slightly over last year, and uniforms, which were purchased in abundance last fiscal year.

Figure 2. Agency Purchases of Non-Paper Recycled Content Products, FY 2000-2003



Conclusion

Purchasing recycled content products is now a well-established state government practice supported by statutory and executive order requirements. State term contracts offer agencies a number of high quality, affordable choices. However, agencies have not fully complied with the 100 percent recycled content paper goal. Now that 48 percent of state agencies have met their goal, it has been proven feasible with management support and increased awareness of requirements and products.

A few key agencies could substantially increase the state's performance by altering a few significant purchasing decisions. Converting the $8.8 million currently spent on virgin paper to recycled paper purchases would allow state government to substantially improve recycling market strength. State government is a major player among those who collect paper for recycling and could directly benefit from improved markets. Using recycled products also helps North Carolina reach its environmental goals to reduce natural resource, energy and water usage, and to prevent air and water pollution. Re-refined motor oil is an excellent example because the product meets virgin oil specifications exactly, engine manufacturers support its use, and its state contract cost is comparable to virgin oil. Agencies should make purchasing re -refined oil products a standard operating procedure.

The following recommendations may increase future recycled content purchasing and help state government meet the goals set forth in Executive Order 156 and general statutes.

Recommendations

I. Reissue and enforce Executive Order 156. Reissuance will heighten awareness and support recycled content purchasing. It also strengthens DPPEA's ability to collect and manage data related to state agency purchases. Strong and active gubernatorial support will help the state meet its executive and legislatively mandated goals.

II. Increase administrative support and educational programs. Agencies vary wildly in the degree of support and routine communication they receive from top management on this issue. The lack of communication may be the most significant barrier to increased agency participation. Administrative support is crucial to the successful implementing agency sustainability plans under North Carolina Project Green. The plans incorporate waste reduction, recycling and environmentally preferable procurement. Agencies that have not yet made waste reduction and buying recycled a priority should:

- Implement and adhere to the goals of Executive Order 156, which states that all paper purchased will have a minimum of 30 percent post-consumer content by FY 00-01.
- Issue and enforce internal policies, official memoranda and formal declarations that demonstrate administrative leadership and support for buying recycled and Executive Order 156.
- Develop and implement ongoing outreach and education programs for employees and visitors.
- Join North Carolina Project Green and pledge to achieve its goals as part of the agency's overall commitment to environmental sustainability.

III. Increase Procurement of Non-Paper Recycled Content Products. Expenditures for non-paper recycled products continue to lag behind paper purchases. The federal government's purchasing regulations under Executive Order 13101A makes it apparent a wide variety of products with recycled content materials are available. Federal Comprehensive Procurement Guidelines feature over 50 items in eight categories. Categories include paper, non-paper office, construction, landscaping, park and recreational, transportation, vehicles and miscellaneous products. To see the list, visit http://www.epa.gov/cpg/. Purchasing an array of recycled content products strengthens North Carolina recycling markets and helps agencies fulfill their obligation to become more environmentally sustainable. State agencies should take the following steps to improve overall buy recycled efforts:

- Expand the quantity and variety of non-paper recycled products purchased through agency convenience contracts and state term contracts.
- Enforce purchasing rules that mandate buying from state term contract above in-house delegations.
- Establish or upgrade electronic tracking systems for all recycled product purchases.
- Specify or encourage the use of recycled materials and supplies by contracted services, especially in construction, housekeeping and printing.

IV. Base Purchasing Decisions On Full Environmental Impact Versus One-Time Cost. To determine the full environmental impact of a product or service, its full life cycle must be analyzed. The analysis helps state agencies begin purchasing items of benefit in both the short and long term.

- Examine products in terms of broad environmental impacts that include: durability, energy efficiency, performance, recycled content and recyclability, toxicity, biodegradability, manufacturer location (local availability), and packaging.
- Develop guidelines and checklists for purchasing and contractual services that consider environmental impact.
- Reassess accounting procedures so agencies that practice environmental purchasing receive credit for doing so.

Agencies that Purchased 100 Percent Recycled Paper in FY 02-03

Alexander County Schools*
Appalachian State University*
Asheboro City Schools*
Central Piedmont Community College*
Edenton-Chowan Schools
Franklin County Schools
Guilford County Schools*
Madison County Schools*
Mitchell County Schools
Nash/Rocky Mount Schools*
Northampton County Schools
Office of the Governor*
Pamlico County Schools*
Pembroke State University*
Pender County Schools
Piedmont Community College
Rowan-Cabarrus Community College
Sampson County Schools
Southwestern Community College
Stokes County Schools*
UNC-Greensboro*
Wilkes County Schools
Wilson Technical Community College

* Indicates at least three consecutive years of reaching this goal.

Agencies that Failed to Report Data for FY 02-03

Bertie County Schools
Brunswick County Schools
Carteret County Schools
Caswell County Schools
Catawba County Schools
Chapel Hill-Carrboro City Schools
Cherokee County Schools
Clay County Board of Education
Clinton City Schools
Coastal Carolina Community College
Columbus County Schools
Dare County Schools
Edgecombe County Schools
Elizabeth City State University
Harnett County Schools
Hoke County Board of Education
Kings Mountain District Schools
Lenoir County Public Schools
Lieutenant Governor's Office
Pamlico Community College
Pasquotank County Schools
Perquimans County Schools
Robeson County Public Schools
Thomasville City Schools
UNC Hospitals
Wake Technical Community College
Warren County Schools
Watauga County Schools
Whiteville City School

CHAPTER 5
WHITE GOODS MANAGEMENT

"White goods" are defined in G.S. 130A-290 (a)(44) as, "refrigerators, ranges, water heaters, freezers, unit air conditioners, washing machines, dishwashers, and clothes dryers and other similar domestic and commercial large appliances."

This interim report is based on information supplied by counties' Annual Financial Information Reports. AFIRs are submitted to the Office of State Treasurer. AFIRs are due by December 1st, but only 70 counties had submitted AFIRs at the time this report was prepared, February 9, 2004. A final, revised report will be issued when the remaining counties submit their AFIRs. It should be noted that, aside from many AFIRs from counties being late, many have blank or erroneous entries.

Counties that did not report as of February 9, 2004

Beaufort	Dare	Jackson	Pamlico	Stokes
Bertie	Durham	Lincoln	Pender	Vance
Caswell	Gates	Macon	Polk	Wake
Chowan	Haywood	Madison	Robeson	Wayne
Columbus	Hertford	Martin	Rutherford	Yadkin
Currituck	Hoke	Montgomery	Sampson	Yancey

Financial Update

- **The white goods management account no longer runs a large surplus**. The number of counties that forfeit their tax proceeds declined while grant requests increased. In FY 98-99, 42 counties forfeited tax proceeds. However, by the fourth quarter of FY 02-03, only 15 counties forfeited their proceeds.
- The amount of forfeited funds available for redistribution dropped 75 percent at the same time that county requests for cost overrun grants doubled - from $450,000 to over $900,000 - per grant cycle. Many counties that allowed reserve funds to accrue in the past are now depleting those funds to pay for daily operations and program infrastructure.

Advance Disposal Fee

Net white goods ADF collections in FY 02-03 totaled $4,460,998.04. Funds were dispersed to:

$ 3,050,499.99	Allocated for direct distribution to counties
$ 847,361.12	Allocated for white goods management account
$ 367,944.43	Solid Waste Management trust fund
$ 184,795.00	N. C. Revenue Department cost of collections
$ 2,146,053.05	Actual amount distributed directly to counties
$ 904,446.94	Forfeited by ineligible counties

Although $3,050,499.99 (72 percent of the net disposal fee collections) was allotted for distribution, ineligible counties forfeited $904,446.94. The forfeited funds went to the white goods management account, which receives 20 percent of net collections.

White Goods Management Account

The White Goods Management Account was established to help counties whose costs exceed their share of ADF revenue. The account receives 20 percent of white goods ADF revenues. It also receives funds forfeited by counties whose surplus exceeds the threshold amount. By the end of FY 02-03, the account balance of $1,075,089.55 was slightly higher than the starting balance of $979,084.93. This account is used to fund counties that incur deficits in their white goods accounts. All but $9,235.50 of this balance was committed for county grants. The counties did not receive all of the proceeds designated for distribution in FY 02-03.

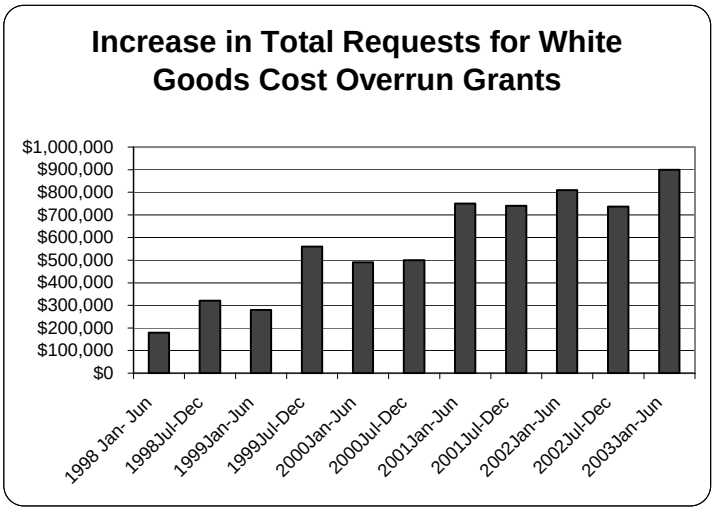
WHITE GOODS DISPOSAL ACCOUNT BALANCE FY 02-03

Beginning Balance (July 1, 2002)	$ 979,084.93
Funds Received during FY 02-03	$ 1,403,781.15
Cost Overrun Grants Awarded FY 02-03	$ 1,276,370.70
Ending Balance (June 30, 2003)	$ 1,075,089.55
Monies Reserved for Future Grant Awards*	$ 1,065,854.00
Unencumbered Ending Balance (June 30, 2003)	$ 9,235.50

*Includes $540,854 reserved for capitol improvement grants and $524,000 reserved for next round of overrun grants.

White Goods Management Account Grants

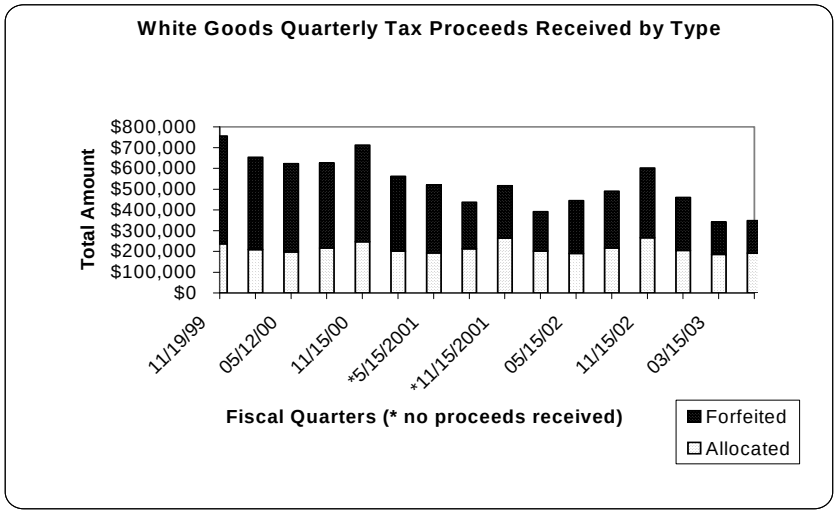
Over $524,000 in grants went to 42 counties for losses incurred January-June 2003; $584,000 was distributed to 34 counties for losses incurred July-December 2002 (Tables 1 and 2).



Capital improvement grants totaling $755,000 were awarded to 15 counties (Table 3). *In FY 02-03, counties requested $2,431,410.97 in cost overrun and capitol improvement grants, but only $1,403,781.15 in revenues was received.*

Very few counties use the grant program to upgrade their infrastructure. Twenty-nine counties repeatedly access the program. To date, program grant awards to "repeat" county customers total $3,116,013.69. Of the 29, 13 have received more than $100,000, and four counties were awarded over $200,000.

As the first graph shows, the total of the amounts requested has significantly increased in recent years. However, as the next graph depicts, the amount of available funds dropped at the same time requests rose.



Program Results

Grant and ADF funding made it possible to clean up illegal dumpsites. Previously, many counties gave white goods a low priority and underfunded their management. The white goods account makes it possible for counties to obtain the specialized equipment or collection/loading areas needed to improve white goods management.

In FY 02-03, 35 county collection sites took in 30,457 tons, or an estimated 761,417 appliances. This compares to the 25,749 tons, or 644,000 appliances, collected in FY 91-92. Without the program, large numbers of appliances would have likely been dumped or stockpiled.

White Goods Management by County Governments

White goods were banned from landfills in 1989 to encourage recycling and better management. Comprehensive white goods management laws enacted in 1993 included an ADF. In 1998, Senate Bill 124 extended the fee for three years but reduced it from $10 to $3. In 2000, the sunset on the fee was removed.

The major accomplishment of the program is a drastic reduction in illegal white goods dumping. The critical factor was requiring local governments to provide collection sites at no cost to the disposers. Counties can use ADF proceeds to clean sites dependent on the percentage of white goods at the site.

Another accomplishment came when counties implemented proper management practices to capture and recycle CFCs. The practice avoids illegal venting into the atmosphere, but also creates a potential profit center.

Though the white goods program has had many accomplishments, some problems remain; these include the limited accountability by counties to assure that tax disbursements and grants are being used exclusively for the management of white goods.

Many local governments are privatizing their white goods management. Overall, privatization does not necessarily mean that programs are more efficient. In many instances privatized white goods management is incorporated into a more comprehensive solid waste contract between a local government and a private firm, making it more difficult to measure program efficiency.

Counties That Forfeited Funds

Counties That Became Ineligible for Advance Disposal Fees In March 2003
(Based on FY 01-02 AFIR Reports)

Alleghany	Franklin	Richmond
Bertie	Guilford	Rowan
Cherokee	Jackson	Sampson
Clay	Jones	Tyrrell
Cumberland	Martin	Wake
Currituck	Mecklenburg	Wilkes
Forsyth	Polk	Yadkin

Counties That Will Become Ineligible for Advance Disposal Fees In March 2004
(Based on FY 02-03 AFIR Reports)

Counties that will not receive ADF distributions because undesignated balances exceed their threshold.

Forsyth	Richmond
Franklin	Tyrrell
Granville	Wilkes
Jones	

Counties that do not submit their AFIR by March 1, 2004 will be ineligible to receive tax proceeds.

White Goods Management Costs

Counties can use the white goods ADF proceeds disbursed quarterly by the Department of Revenue for daily expenses incurred to recycle white goods. Funds can also be used for one-time expenses, such as purchasing specialized equipment and making site improvements for better management. Most county programs are not self-sustaining and require subsidies. Expenses for these programs include fuel, labor and the cost of associated items.

The 70 reporting counties spent $4,331,831 in FY 02-03. Of this total, $3,598,878 was for daily operations, $597,429 for capital improvements, and $144,602 to clean up illegal disposal sites.

Counties with high per unit costs usually have strong programs, a cost allocation plan, lack a strong market, or have a combination of these factors. Counties with little or no disposal costs tend to have minimal programs, poor record keeping, access to a strong market or a combination of these factors. Only a few counties have metals recyclers willing to provide free pickup from county collection sites and/or provide CFC recovery in exchange for access to the scrap metal.

Highest Operating Costs Reported

County	Cost per ton	Cost per appliance*
Wilkes	$561.38	$22.45
Gaston	$410.08	$16.40
Washington	$223.21	$ 8.92
Alexander	$220.88	$ 8.83
Mecklenburg	$214.19	$ 8.56
Graham	$183.93	$ 7.35
Cumberland	$182.02	$ 7.28
Nash	$171.13	$ 6.85
Northampton	$163.34	$ 6.53
Perquimans	$141.17	$ 5.64

Lowest Operating Costs Reported

County	Cost per ton	Cost per appliance*
Transylvania	$25.50	$1.02
Guilford	$23.87	$0.95
Caldwell	$22.97	$0.91
New Hanover	$21.16	$0.84
Cabarrus	$20.89	$0.83
Cherokee	$19.89	$0.79
Person	$17.58	$0.70
Henderson	$14.67	$0.58
Swain	$11.91	$0.47
Wilson	$10.91	$0.43
Surry	$ 9.86	$0.39

*Estimate assumes an average appliance weight of 80 pounds.

Outsourcing loading and transport to the recycler can reduce costs. Other counties use in-house labor to sort and segregate metals, recover CFCs or extract motors or oil.

Tonnage Collected by Counties

In FY 02-03, 70 counties reported processing 52,117 tons of white goods. This translates into 1,302,914 individual appliances (assuming 25 appliances per ton), or about .16 appliances per person in North Carolina.

This map illustrates that operating costs by counties do not seem restricted by geography. Instead, the map suggests that a correlation to distance to markets, extent of programs, record keeping, and cost allocation plans among counties have a greater effect on county costs.

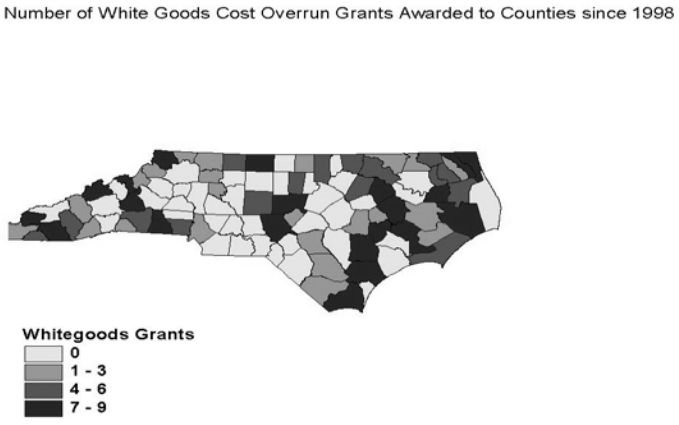


Table 1
Grant Requests & Awards from the White Goods Disposal Account for Losses Incurred January-June 2003

County	ADF Proceeds Received For 6 Month Period	Grant Request For Cost Over-Run	Amount Of Grant Awards
Ashe	$4,105.35	$5,632.24	$2,816.12
Avery	$2,920.74	$9,893.34	$2,775.22
Beaufort	$7,533.48	$58,572.44	$29,287.22
Bladen	$5,402.00	$5,406.00	$5,405.90
Brunswick	$12,550.30	$32,000.84	$32,000.84
Camden	$1,162.00	$2,202.00	$2,202.36
Carteret	$9,932.28	$19,067.72	$9,533.86
Chatham	$8,380.33	$24,406.04	$18,074.18
Cleveland	$16,122.74	$85,218.12	$40,998.11
Craven	$15,304.24	$67,501.36	$40,070.36
Cumberland	$50,447.00	$30,110.00	$15,055.17
Currituck	$1,557.82	$9,206.18	$7,579.42
Duplin	$8,246.71	$41,677.41	$22,505.12
Edgecombe	$9,197.33	$16,673.84	$14,284.05
Gaston	$31,836.00	$41,045.00	$5,288.98
Graham	$1,400.00	$20,673.00	$10,129.03
Granville	$8,209.48	$12,735.21	$1,500.74
Halifax	$9,547.39	$2,698.79	$2,698.79
Hyde	$967.29	$3,181.71	$1,590.86
Jackson	$2,834.99	$14,085.52	$14,086.27
Lenoir	$9,921.72	$36,050.60	$26,378.28
Macon	$5,034.75	$3,716.43	$2,233.68
Madison	$3,291.71	$3,903.00	$3,901.34
McDowell	$7,101.93	$5,695.23	$5,695.23
Mitchell	$2,632.71	$18,422.45	$9,211.23
Moore	$12,631.15	$14,983.24	$14,983.24
Nash	$14,674.20	$104,728.22	$38,295.35
Northampton	$3,678.14	$22,841.00	$11,420.64
Orange	$19,990.28	$58,538.47	$20,359.24
Pe/Ch/Ga	$6,095.12	$38,961.88	$19,480.94
Pender	$6,954.84	$30,670.70	$30,670.70
Pitt	$22,462.01	$15,978.02	$15,978.02
Randolph	$21,945.50	$1,741.60	$1,741.60
Rockingham	$15,330.38	$970.68	$970.68
Rutherford	$10,541.10	$13,439.97	$13,439.97
Stokes	$7,516.00	$6,146.63	$5,734.97
Transylvania	$4,900.82	$370.92	$370.92
Tyrrell	$0.00	$2,944.00	$1,127.05
Warren	$2,763.90	$3,249.65	$2,672.97
Washington	$1,167.71	$9,265.13	$8,155.89
Yadkin	$6,093.88	$1,277.57	$1,277.57
Yancey	$2,988.11	$12,390.57	$12,390.57
Totals	**$395,373.43**	**$908,272.72**	**$524,372.68**

Table 2
Grant Requests & Awards from the White Goods Disposal Account for Losses Incurred July - December 2002

County	ADF Proceeds Received For 6-Month Period	Grant Request For Cost Over-Run	Amount Of Grant Awards
Ashe	$5,131.66	$5,508.16	$5,528.16
Avery	$3,662.87	$13,132.05	$8,722.93
Bladen	$6,706.00	$5,068.00	$5,067.85
Brunswick	$15,909.25	$31,935.41	$31,934.75
Camden	$1,453.00	$1,020.00	$1,019.93
Carteret	$12,329.75	$18,195.25	$18,195.25
Chatham	$10,540.93	$19,348.68	$5,145.36
Cleveland	$20,026.82	$78,369.71	$78,369.14
Craven	$19,025.98	$67,907.07	$41,274.07
Davie	$3,259.80	$4,114.44	$4,114.44
Duplin	$10,260.21	$37,349.29	$21,958.00
Gaston	$39,535.00	$56,521.00	$9,698.00
Graham	$1,400.00	$20,673.00	$20,911.20
Granville	$10,275.00	$5,649.00	$2,584.37
Greene	$3,930.57	$3,281.73	$3,281.73
Halifax	$11,819.39	$2,189.92	$2,189.92
Hertford	$0.00	$2,826.50	$2,826.50
Hyde	$1,187.86	$9,333.94	$9,333.94
Jackson	$6,962.68	$28,907.32	$28,907.32
Lee	$10,224.84	$6,489.70	$6,489.70
Lenoir	$12,265.83	$25,749.40	$25,749.40
Macon	$6,294.70	$3,078.61	$3,078.61
Madison	$5,439.32	$1,921.28	$3,268.68
McDowell	$8,861.14	$5,211.74	$5,211.74
Mitchell	$3,283.89	$19,895.90	$19,895.90
Moore	$15,796.31	$8,385.21	$8,385.01
Orange	$25,021.52	$116,015.72	$89,708.78
Pe/Ch/Ga	$7,799.00	$31,426.00	$31,426.00
Pender	$8,699.16	$31,266.84	$31,266.84
Pitt	$27,914.43	$32,038.91	$32,038.91
Rockingham	$18,992.05	$1,128.34	$1,128.34
Rutherford	$13,114.42	$12,644.97	$3,467.23
Stokes	$17,707.74	$5,543.45	$1,133.89
Warren	$4,133.71	$1,133.89	$1,133.89
Washington	$1,223.25	$9,859.21	$8,269.42
Yancey	$3,726.16	$11,638.98	$11,638.98
Totals	**$373,914.24**	**$734,758.62**	**$584,354.18**

Table 3
Grant Awards & Reserved Funds From the White Goods Disposal Account for Capital Improvements in FY 02-03

County	Grant Amount	Explanation
Ashe	$30,400	Road tractor --- (Paid)
Avery	107,500	Concrete pad – Reserved
Cherokee	$98,000	Used semi & roll-off trailer -- Reserved
Edgecombe	$104,700	Concrete pad --- Reserved
Graham	$4,700	Storage Building, CFC unit, concrete pad - Reserved
Jackson	$108,120	Concrete pad --- (Paid)
Lee	$85,000	Knuckleboom loader --Reserved
Macon	$713	Concrete pad – Reserved
Madison	$14,400	Repair trackhoe—Reserved
Mitchell	$18,746	Repair truck, concrete pad --- (Paid)
Pasquotank	$32,000	Pup trailer – Reserved
Perquimans/Gates/Chowan	$36,418	Concrete pad --- (Paid)
Stokes	$46,547	Repair front loader & metal building--Reserved
Swain	$30,000	Road tractor- Reserved
Warren	$38,000	Illegal dump clean up --- (Paid)
Totals	**$755,244.00**	

CHAPTER 6
SCRAP TIRE MANAGEMENT

Scrap Tire Disposal Account

The Scrap Tire Disposal Account (STDA) was created by the 1993 General Assembly. It receives 27 percent of its revenues from the Scrap Tire Disposal Tax initiated on October 1, 1993. During the 2002 Session of the General Assembly, the sunset was removed on the Scrap Tire Disposal Tax.

Beginning in October 1992, 25 percent of the STDA fund was allocated for cost overrun grants to counties and 75 percent was allocated for clean up of nuisance tire sites. Starting with the August 12, 1997 distribution, 50 percent of the fund is allocated for cost overrun grants, 10 percent for clean up of nuisance tire sites and 40 percent for processed tire material market development grants.

FY 02-03 Balances

Balance of Funds as of July 1, 2002	$3,666,424.80
Deposits Received FY 2002-2003	$2,246,818.01
Total Funds in Account	$5,913,242.81
Grants to County Scrap Tire Programs	$1,642,268.32
Nuisance Tire Site Cleanup Program	$225,051.75
Processed Tire Material Grants	$501,684.19
Balance of Funds as of June 30, 2003	$3,544,238.55
Obligated funds as of June 30, 2003*	$2,677,398.84
Net Balance of Funds as of June 30, 2003	$866,839.71

* $2,677,398.84 obligated: $338,547.89 for tire cleanup, $2,338,850.95 for tire recycling grants under contract and under negotiation

Tire Tax Distribution

Of the state's 2 percent tire disposal tax revenue, initiated October 1993, 68 percent is distributed to counties on a per capita basis. In the past year, the total amount distributed was $7,491,899.76. This subsidized tire disposal costs for the counties, but did not cover many counties' total expenses. The total distributed to the counties represented 78 percent of the total reported disposal costs of $9,664,630.84. This provided an average of 78 cents for each of the 9.6 million scrap tires handled by the counties.

On January 1, 1994, counties stopped charging fees to dispose of tires that were certified as generated in North Carolina (per G.S. 130A-309.58). Counties may charge a fee for tires presented for disposal that do not present a scrap tire certification form verifying the tires were generated in North Carolina.

Counties whose scrap tire costs exceed the amount they receive in their allocation of the tire tax, can apply for a grant to cover the deficit. For the first grant cycle of FY 02-03, 57 counties requested $1,052,145 and were awarded $820,685. In the second grant cycle, 60 counties requested $1,011,560 and were awarded $821,583.

Historically, the amount of grant funds requested by counties has surpassed availability. Scrap tire legislation requires the waste management division to consider county efforts to avoid free, out-of-state tire disposal and county program efficiency when making decisions about grant awards. The amounts requested and awarded are as follows.

Grant Period	4/97 – 9/97	10/97 – 3/98	4/98 – 9/98	10/98 – 3/99	4/99 - 9/99	10/99 - 3/00
Funds Available	$655,226.57	$976,245.51	$687,847.37	$633,761.66	$699,950.87	$663,467.43
Funds Awarded	$592,165.00	$602,778.28	$644,334.67	$583,093.00	$666,042.36	$786,511.24
Grant Requests	42	41	45	46	56	53
Funds Requested	$665,177.91	$677,682.00	$761,308.00	$781,603.00	$816,004.63	$842,931.37

Grant Period	4/00 – 9/00	10/00 – 3/01	4/01 – 9/01	10/01 – 3/02	4/02 - 9/02	10/02 - 3/03
Funds Available	$751,295.88	$700,221.11	$ 0*	$ 0*	$792,399.37	$694,963.10
Funds Awarded	$799,500.85	$709,226.95	$804,004.00	$811,050.00	$820,685.00	$821,583.00
Grant Requests	53	51	56	53	57	60
Funds Requested	$898,907.67	$730,709.37	$992,564.00	$1,024,935.00	$1,052,145.00	$1,011,560.00

*Used balance in other STDA fund.

Grants Awarded

The goal of the waste management division's grant program is to make scrap tire recycling sustainable in North Carolina. This goal can be met. We anticipate awarding additional grants for manufacturing rubber products such as mats, auto parts, gaskets, flooring material, tire derived fuel, new tire manufacturing and other applications in FY 03-04.

The Processed Scrap Tire Material Market Development Grants program received its first allocation of funding in August 1997. Grants awarded to date are:

- Roll-Tech, Inc., Hickory, N.C. $212,420
  Construct additional molds to increase hard rubber tire manufacture
  COMPLETED
- Continental Tire, Inc., Charlotte, N.C. $1,520,000
  Develop "tire to tire" technology with 25 percent recycled content goal
- Jackson Paper, Inc., Sylva, N.C. $377,000
  Boiler modifications for tire derived fuel
  COMPLETED
- N.C. State University, Raleigh, N.C. $38,291
  Tooling development for scrap tire recycling
  COMPLETED
- TIRES, Inc., Winston Salem, N.C. $320,000
  Produce playground/industrial mats

Within the next year, we anticipate awarding grants to Texas Encore Materials LLC for $983,000 and to Roll-Tech Inc. for $850,000.

Tire Cleanup Program

A total of 357 nuisance tire sites have been identified in North Carolina; 330 have been cleaned and 22 sites have cleanups underway. The remaining five sites are either under investigation or enforcement action. Counties are encouraged to locate and clean all small tire sites through countywide cleanup activities.

Status	Number of Sites	Total Known Tires	Total Tires	Cleared Tires
Cleaned Up	330	7,329,561	96%	7,329,561
Under Clean Up	22	235,990	3%	143,882
Remaining Sites	5	27,500	1%	0
TOTAL	**357**	**7,593,051**	**100%**	**7,473,443**

General Statute 130A 309.50 requires the waste management division to first address nuisance tire sites that pose the greatest threat to public health and the environment. At the program's start, efforts and actions to clean top priority sites were developed and initiated as funds were available. As cleanup funds were received through quarterly distributions, additional priority sites were cleaned.

The division has established and implemented a specific cleanup plan for each known nuisance tire site. As new sites are discovered, prompt investigation leads to a cleanup plan for each site within 30 days. The plan is implemented as soon as possible to minimize potential threats to human health and the environment.

The division is committed to the North Carolina Big Sweep program, with reimbursements going to counties that request funds to dispose of scrap tires collected by the statewide event.

To date 167 nuisance tire sites were cleaned using STDA funds. Cost recovery efforts collected $352,587.19 from responsible parties for nine of these sites. Three sites are under cost recovery action.

As a cost saving measure, minimum-security inmates have removed over 600,000 tires from nuisance sites. Counties utilizing inmate labor in nuisance tire cleanups are: Anson, Bladen, Buncombe, Burke, Camden, Chatham, Chowan, Cleveland, Columbus, Craven, Davidson, Halifax, Harnett, Iredell, Lee, Moore, New Hanover, Northampton, Onslow, Perquimans, Richmond, Robeson, Rockingham, Rutherford, Stokes, Surry, Washington and Yadkin.

Scrap Tire Generation

The U.S. EPA standard to estimate scrap tire generation is one tire per person, per year.[2] The 2002 North Carolina population was about 8.3 million, so it is estimated an equal number of tires were generated. This includes passenger, truck, and tires for special uses, such as off-road equipment and tractors. Counties report tires received in either tons or the number of tires. Tons can be converted to number of tires. A ton of tires consists of 100 passenger tires, 20 truck tires, or four off-road tires (tractors and other large off-road equipment).

In FY 02-03, counties reported receiving tires in three size categories: 81 percent passenger car tires, 15 percent heavy truck tires and 4 percent off-road tires. During FY 02-03 counties disposed of approximately 9,645,000 tires (9,144,000 passenger, 471,000 heavy truck and 30,000 off-road). Comparing tire generation to population results in 1.16 scrap tires per person.

Tire Volume

All counties are required to provide facilities for scrap tire disposal and to report on their management programs. A summary of this data is presented in the Appendix.

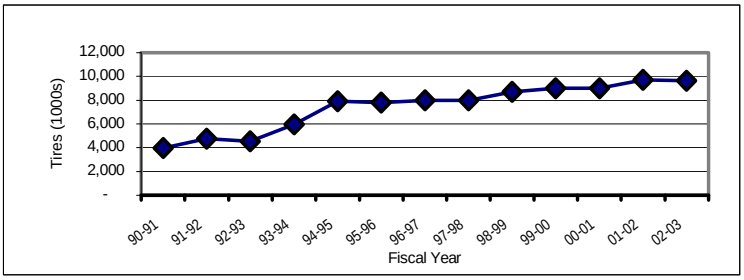
In FY 02-03, North Carolina businesses and individuals disposed of approximately 124,000 tons of tires. These tires were managed by county disposal facilities and private processing facilities as follows:

123,661 tons	Managed by counties and shipped to three processing firms
1,591 tons	Managed by counties and shipped out-of-state
9,000 tons	Tires taken directly to processing firms (not managed by counties)
134,252 tons	**Total**

Counties report receiving approximately 125,000 tons of the total 134,000 tons from North Carolina disposers. The counties shipped about 124,000 tons to three private recycling facilities; the remaining 1,600 tons were shipped to out-of-state processors.

Three private North Carolina processing firms received 125,000 tons from county tire programs and an additional 9,000 tons directly from disposers not participating in county tire programs. These may be individuals involved in privately-funded cleanups or tire dealers not participating in a county program.

Volume of Disposed Tires
FY 90-91 - FY 02-03



[2] "Markets for Scrap Tires," 1991. U.S. EPA, Office of Solid Waste. EPA/530-SW-90-074A. Washington, DC.

The tire program's success is proven by the increase in the number of tires disposed during the past eleven years. Almost all disposed tires are being handled at regulated disposal facilities. However, since free disposal was implemented in 1994, a problem has emerged with illegal disposal of out-of-state tires at county collection sites. The waste management division's Solid Waste Section estimates counties spend about $600,000 per year to manage out-of-state tires that are inappropriately disposed as North Carolina tires.

This cost estimate is based on disposal costs in counties with tire volumes greater than 120 percent of the county population (1.2 tires per person). Some counties are regional retail centers or have other factors that cause them to receive an excess volume of tires.

The waste management division assists counties to help them avoid fraudulent disposal of out-of-state tires. County efforts to deter disposal of out-of-state tires is an eligibility factor when awarding grants from the STDA to cover cost over-runs.

County Tire Disposal Costs

There are 96 county programs, including three regional programs [Carteret, Craven and Pamlico (CRSWMA); Chowan, Perquimans and Gates; Mitchell and Yancey Counties]. These counties report spending a total of $9,664,630.84 for scrap tire disposal. The reported costs for scrap tire disposal varied greatly. Some counties only report disposal costs while other counties include associated costs, such as personnel or equipment. Counties with unusually low costs may stockpile tires during the year rather than sending them for processing. Some of the fluctuation is probably due to recordkeeping errors or county reporting errors. Also, some counties manage tires inefficiently. For example, counties that allow citizens to dispose tires in "green boxes" incur increased labor costs to recover and load tires into trailers.

Tire disposal costs charged by processors are very competitive. North Carolina processors report that county contracts typically charge $70-$80 per ton, including transportation and trailer rental costs. Counties at a distance from processing facilities may pay as much as $80-$100 per ton. The average tire disposal cost in FY 02-03 was $83 per ton.

CHAPTER 7
DEPARTMENT OF TRANSPORTATION

This section summarizes the North Carolina Department of Transportation's recycling and solid waste management efforts for FY 02-03. General Statute 136-28.8(g) mandates that the department prepare an annual report on the amounts and types of recycled materials specified or used in contracts during the previous fiscal year. The types of recycled materials noted in the projects would normally contribute to the consumer and industrial waste streams, compounding the problem of declining space in landfills. All applications of recycled materials are consistent with economic feasibility and applicable engineering and environmental quality standards.

Efforts to use recycled and solid waste materials are in response to G.S. 136-28.8 that specifically mandates the following in highway construction projects:

- rubber from tires for pavements, subbase materials and other appropriate applications,
- general recycled materials for guardrail posts, right of way fenceposts and sign supports,
- recycling technology, including but not limited to, hot in-place recycling.

Highway Construction Projects

- One project let by Division 10 used 754,516 scrap chipped tires as embankment fill material.
- Division 14 re-used 80,000 pounds of steel beams.
- One Division 10 project used 500,000 cubic meters of fly ash as embankment fill.
- The number of recycled plastic offset blocks continues to grow; this year's total is 78,025.
- Pavement marking used 163 tons of recycled glass beads.
- New data capture methods increased the amount of fly ash reported in concrete mixes for bridge approach slabs and other applications. This year's total of 327 tons is a substantial increase over any previous reports. The figure is expected to grow with increased use and improved data collection.
- Fly ash is increasingly used as an alternate borrow material. This year's total of 500,000 cubic meters is much larger than typical and only represents one project.
- The recycling of millings is now being partially calculated using actual mix designs and recycling percentages stated in these designs. This method is more accurate and captures more statewide asphalt recycling for both construction and maintenance operations.
- Products reused in maintenance applications include: 1,200 feet of silt fence and posts; 1,840 feet of reinforced concrete pipe; and 1,250 tons of stockpiled soil, gravel and rubble. These numbers are expected to grow as reporting and tracking systems improve.

Attachment 1 at the end of this report list the quantities of recycled materials used in FY 02-03. Attachment 2 lists the quantities used from 1989 to June 30, 2003.

Next year's report will discuss the development and release of a new, Web-based reporting structure. The system offers user-friendly data entry options and accepts values in several common units. This will simplify data collection and greatly increase the power and flexibility of the final annual report.

Continuous Process Improvement

Four entries were submitted for the 2001 CPI Awards in the Environmental Sustainability category.

- **Early Seeding & Mulching** – The Guilford Bridge Department in Division 7 has been seeding and mulching the area of impact at each bridge replacement site immediately after work completion. This reduces the time Roadside Environmental normally requires to do the work. This process covers disturbed areas faster and speeds germination to reduce erosion and sediment issues or impacts.
- **Recycled Appliances and Cross Line Pipes** – Due to a large reduction in Alamance County litter patrol crews, the Alamance Maintenance and Bridge Unit increased collection and disposal operation efficiency. The unit discovered they could save time by locating a scrap metal collection facility along their litter route. This permitted metal recycling, reduced driving time, and combines scrap metal

cross line pipes from other units. By expanding recycling options, DOT saves money in tip fees and helps extend landfill life.

- **Median Guardrail Turf Conversion** – Placing guardrails in grass medians created new challenges for maintenance crews. The traditionally established turf is Kentucky 31, which requires mowing seven times per year. Division 14's Roadside Environmental Unit 14 identified a more desirable mix of hard fescue and bluegrass. The blend fit their climate and environmental conditions better and the mix provides a pleasing dark green color, good stand density and drought tolerance. It requires mowing half as often as traditional methods, so the DOT saves money and reduces the environmental impact of maintenance activities.
- **Secondary Roads Paving Standards, Context Sensitive Solutions** – The Division 14 Maintenance Unit received frequent inquiries from property owners, local advocacy groups and environmental agencies regarding their secondary pavement standards. All vied for an opportunity to affect the current project's development. The Division needed to establish safe and effective uniform standards that minimized property disturbance and environmental impacts. A team of Division 14 engineers developed a document entitled, "Secondary Road Paving Standards." This document guides engineers to select the least disruptive section that also provides adequate service. This result saves time after standards are established, reduces environmental impacts, and lowers construction costs for secondary roads.

For up-to-date information on North Carolina DOT's use of recycled materials, visit http://www.doh.dot.state.nc.us/preconstruct/highway/dsn_srvc/value/recycle/

CHAPTER 8
DEPARTMENT OF ADMINISTRATION

The Department of Administration continues its efforts to promote the purchase and use of reusable, refillable, repairable, more durable, and less toxic supplies and products. Department progress has allowed more of these products to be added to statewide term contracts, agency specific term contracts, as well as open market bid awards. For more information, visit DOA's Web site at http://www.doa.state.nc.us/PandC/.

Efforts Taken To Comply With The Session Laws 1993 {G.S. 130a-309.14(Al)}

Bids currently advertised in the Division of Purchase and Contract contain a Recycling and Source Reduction paragraph in item #10 of Instructions to Bidders. When developing bid invitation language, requirements and specifications, purchasers continue to look at alternative methods and products. The emphasis is on waste reduction and practicable and cost-effective procurement. More specifically, the Division of Purchase and Contract has taken the following steps.

E-Procurement Project

This multi-agency project strives to incorporate a single statewide business and purchasing module. E-procurement allows individuals to select needed items from an electronic catalog. They can then requisition the item; obtain the necessary approvals (including funds checking); order the item and receive it -- all electronically in a secure system.

E-quote is a tool that enables vendors or prospective suppliers to electronically receive and respond to requests for quotations from North Carolina state agencies and many other public sector buying entities in the country. E-quote is most appropriate for suppliers of goods. For agencies, it eliminates faxing/mailing request-for-quotes; for vendors, it eliminates submitting and mailing hard copies of quotes.

Environmental Benefits

Environmental benefits include:
- Reduction in paper and mailing expenses incurred during non-electronic business transactions.
- Cost reduction to vendor by printing fewer catalogs.
- Elimination of many vendor expenses associated with non-electronic business transactions.

Interactive Purchasing System

The Division of Purchase and Contract continues to promote electronically posting (advertising) IFBs and RFPs. Vendor Link allows vendor registration to receive electronic notification of advertised bids.

Open Market Awards

- Office Panel Systems-It is standard procedure to incorporate refurbished language in the bid document for refurbished panel systems.
- Food Product Packaging- Wooden pallets used for cases of food are exchanged. Also, all cardboard cases are recyclable.
- Used Paint Booth, Bid #200936, $49,519 – 100% Reusable
- Aluminum Stair & Ramp Systems, Bid #201458, $23,217 – 45% Aluminum – Recyclable
- Prefabricated Mobile Homes, Bid #200826 (ASTC), $4,370,150 to $14,553,300 – 70% Wood – Recyclable
- Metal Storage Buildings, Bid #300063 (ASTC), $107,568 –75% Aluminum - Recyclable

Statewide Term Contracts

As existing term contracts are re-bid and new term contracts are developed, the Division of Purchase and Contract continues to improve the contracts by offering more sustainable or environmentally friendly products. These term contracts are listed below:

- **Oil Filters, 060c** - Allows for multipacking, which reduces the number of filters individually boxed. This reduces trash that would otherwise be generated.
- **Domestic Appliances, 045a** - All refrigerators, washers and dishwashers are "Energy Star" qualified. The Department of Energy monitors this stringent measurement of energy efficiency. The payoff is a more efficient appliance, which use less energy over the product's lifetime.
- **Office Paper, 645a** - Contains both 100 percent and 50 percent post consumer and chlorine-free copy paper. In addition, Section 9A is virgin paper and the balance of the contract is recycled paper and envelopes.
- **Remanufactured Toner Cartridges, 207a** - Refillable to avoid being added to the waste stream.
- **Storage Batteries, 060b** - Casings are made from recycled material (80 to 82 percent).
- **Floor Maintenance Machines, 365a** - Includes a category for automatic scrubbers using gel sealed batteries. Gel-sealed batteries exhaust 1/40th the amount of hydrogen and sulfuric acid gases compared to wet-lead batteries. Gel-sealed batteries operate 2 ½ - 3 times longer than the wet/lead acid variety and are less toxic.
- **Lateral Filing Cabinets, 425f** - Cabinets contain five percent recycled content. Corrugated boxes have a minimum 50 percent post consumer waste and are recyclable. Contractors purchase back files at end of their use.
- **Vertical Filing Cabinets, 425g** – Classes B and C cabinets have 10 percent recycled content. Corrugated cardboard boxes contain 50 percent post consumer waste and are 100 percent recyclable after use. Class A cabinets contain 29 percent recycled content, 3 percent post consumer recycled content and are 96 percent recyclable after use.
- **Wood Library Furniture, 420d** - Contractors support sustainability through different practices, even when end products do not contain recycled content but are made from renewable sources. Packaging is recycled and recyclable; wood scraps are turned into mulch; blanket wrapping is used for shipping and the wood is recycled into particleboard. Solid wood furniture is also more durable.
- **Ammunition, 680a** - Brass shell casings can be saved and recycled; others can be reloaded.
- **External Defibrillators, 465b** - Packaging material can be recycled and the defibrillators can be refurbished. This is a co-op contract with the State of South Carolina.
- **Musical Instruments, 580b -** All items, with the exception of rivets, can be recycled at the end of use. Instruments can be traded-in for reconditioning and one company donates trade-ins to the Links Program for the needy. Corrugated containers are 100 percent recyclable.
- **Calculators, 600a** - Packaging material may be recycled.
- **Carpet, 360a** - Contains carpets with recycled content. All carpet that removed per this contract will be recycled or non-landfilled.
- **Cleaning Implements, 485g** – Cotton mops are made of cotton waste. Wooden handles can be re-used as dowels, gardening stakes and banner holders. Shipping cartons are recycled and recyclable.
- **Large & Specialty Lamps, 285a** – Encourages the use of energy-efficient fluorescent lamps and lists products that meet or exceed Federal Energy Management Program recommendations. A link is provided to FEMP that illustrates return-on-investment for retrofitting energy efficient lamps and ballasts. Some lamps contain 65 percent recycled content, are low mercury (TCLP compliant) and non-hazardous. Packaging can contain 73 percent recycled content.
- **Ballasts, 285b** - Encourages the use of energy efficient fluorescent lamps and lists products that meet or exceed FEMP recommendations. A link is provided to FEMP that illustrates return-on-investment for retrofitting energy efficient lamps and ballasts. Ballast contains no PCBs and can be disposed of in the trash. Reduced form factor to minimize packaging.
- **Material Handling Carts/Trucks, 560a** – Very few products are made from virgin steel. Products are not shipped in cartons.
- **Dictation/Transcription Equipment, 600c** – Vendors use recycled items (approx. 10 percent) and comply with the 9000 guideline in the International Organization for Standardization. Packaging contains from 60-100 percent recycled content.

- **Laminators & Laminating Film, 665a** – Some film contains 5 percent post consumer content. Packaging contains 25-80 percent post consumer content.
- **Bio-Diesel Fuel, 405L -** B20 blended fuel contains 80 percent diesel fuel and 20 percent virgin soy or reprocessed vegetable oil.
- **Cameras, Digital & Film, 655A** – The metal camera bodies can be salvaged and reused. Plastic bodies and parts can be recycled. All packaging materials are recyclable.
- **Gasohol, 405M** – E-10 blended fuel contains 90 percent unleaded gasoline and 10 percent ethanol.
- **Passenger Cars, 070A; Law Enforcement Vehicles, 070B; Trucks/Vans/Utility Vehicles, 070G** – Bids included an AFV (alternate fuel vehicle) category for each line item. Three bid lines are solely dedicated to AFV. According to the Steel Recycling Institute, 67.7 percent of a vehicle is steel or iron. Of that steel or iron, 26.6 percent is post consumer material. Therefore, 18 percent of a vehicle is made from post-consumer recycled material.
- **Wiping Cloths, 735A** – All items are second-hand textiles. Reclaimed wiping cloths are offered as well as new cloths. Vendors resell waste instead of sending it to landfills. Vendors use low alkaline content wastewater. All recycled textile rags can be sold to make paper products. All rags can be re-laundered.
- **Furniture, Desks (Wood), Credenzas, Conference Tables, Etc., 425B** – Contractors support sustainability through different practices. Mechanical parts can be recycled or replaced – extending service of item. Packaging is recycled and recyclable. Products may be ground up into particleboard.
- **Office Supplies, 615A** – Contractors are required, to the extent feasible and practical, to offer recycled products and packaging; especially with post-consumer waste content. Wherever possible and practical, products should be identified as such.
- **Chalkboards, Tack boards and Erasers, 785A** – The product packaging has recycled content.

Items Aiding Waste Reduction Purchased By State Agencies through Term Contracts and Open Market

The following items purchased by state agencies meet the criteria to reduce waste by being reusable, refillable, repairable, more durable and/or less toxic than their traditional counterparts:

Reusable
Ammunition, cartridge refills
Digital cameras (reduces need for film & chemicals)
Freon recovery system (reusable filters)
Musical instruments
Plastic tableware
Re-chargeable drycell batteries
Recycled carpet and virgin carpet
Recycled paper
Recycled content furniture (not traditional wood)
Remanufactured toner cartridges for laser printers
Solvent degreaser (reuses solvent)
Tire recapping & repairing service
Uniforms
Vacuum bags
Wiping cloths

Refillable
Ammunition, cartridge refills
Batteries, vehicle & storage
Calendars
Drums, steel
Fire extinguishers
Mechanical pencils/pens

Repairable
Defibrillators
Musical instruments
Pencil sharpeners
Tire recapping & repairing services

More Durable
Above-ground vaulted fuel storage tanks
Classroom furniture
Electronic lamps & ballast
Electronic vacuum cleaners
Flags
Grader blades
Grader slope attachment
Kindergarten furniture
More Durable (continued)
Paint bushes
Plastic lumber
Plastic tableware
Rubber bands
Staplers
Vertical file cabinets
Wood casegoods
Wood library furniture

Less Toxic
Alternative fuel vehicles
Correction fluid
Electronic lamps & ballasts
Fertilizers/farm chemicals
Floor maintenance machine batteries
Inks for printing (non-petroleum-based inks)
Instructional art materials
Markers
Scientific Products (eliminating freon)

Longer Lasting
Floor maintenance machine batteries
Library furniture
Pens

Recyclable
Pens
Carpet
Mops & brooms
Vehicle steel & tires
Vertical filing cabinets
Wiping cloths
Wood casegoods
Wood library furniture

Washable
HVAC filters
Wiping cloths

Attachment #1

N.C. DEPARTMENT OF TRANSPORTATION
RECYCLING & SOLID WASTE MANAGEMENT FY 02-03

Description	Usage	Quantity
Waste Scrap Tires		
Chipped Tires	Roadbed Embankment Component	754,516 TIRES
Tire Sidewalls	Drum Ballasts	2,904 EA
Glass		
Glass Beads	In Paint & Long life pavement markings	163 TONS
Plastic	Guardrail Offset Blocks	78,025 EA
	Plastic Pipe	13,589 LF
	Type III Barricade	720 LF
Fly Ash	Concrete Mix Additive	327 TONS
	Road Embankment Component	500,000 CM
	Flowable Fill	100 CY
Recycled Asphalt Pavements	Asphalt Pavement Millings	3,774,720 SY
	Beneficial Fill Material	191,933 CY
	Cement	23,208 TONS
	ABC	138,675 TONS
Class B Stone	Erosion Control Stone	220 CY
Bark Mulch	Soil Amendment	4,550 CY
	Mulch	200 TONS
*** Recycled Steel**	Steel Beams	80,000 LBS
	Guardrail	235 FT
***Reused Materials**	Silt Fence and Posts	1200 FT
	Reinforced Concrete Pipe	1840 FT
	Gravel and Rubble	1250 TONS

*These items were salvaged and re-used by maintenance operations.

Attachment #2

N.C. DEPARTMENT OF TRANSPORTATION
RECYCLING & SOLID WASTE MANAGEMENT
JANUARY, 1989 THROUGH JUNE, 2003

Description	Usage	Quantity
Waste Scrap Tires		
Chipped Tires	Roadbed Embankment Component	11,187,655 TIRES
Crumb Rubber	Crack Sealant Soil Amendment	500 LB 20 TONS (app. 2,025 TIRES)
Chipped Tires	Sound Wall Panels	8,000 TIRES
Tire Sidewalls	Ballast for Traffic Drums	51,535 EA
Lightweight Fill Chipped Tire Material	Soil substitute in culvert backfill	47,211 TIRES
Crumb (Ground) Rubber	Asphalt pavement component	124,512 TIRES
Whole Tires	Retaining Wall	2,500 TIRES
Rubber Mulch	Wood Mulch	8 TONS (app. 800 TIRES)
		Total 11,424,238 TIRES
Plastics		
Plastic Lumber	Guardrail Offset Block	193,448 EA
Plastic Lumber	Type III Barricades	1320 FT
Recycled Plastic Fence Posts	Right of Way Fencing	7,600 EA
Recycled Plastic Delineator Posts	Roadside Safety Delineators	676 EA
Recycled Plastic Pipe	Subsurface Drain Pipe	32,458 LF
Recycled Plastic Pipe	Fittings (Y, T, & L's)	76 EA
Recycled Plastic Pipe	Temporary Slope Drain	4,723 LF
Recycled Plastic Traffic Separators	Railroad Safety Device	2,922 LF
Glass		
Glass Beads	In Paint & pavement markings	52,292 TONS
Crushed Glass	Aggregate backfill for subdrainage pipe	95 CY
Crushed Glass	Pipe Foundation Conditioning	333 TONS
Crushed Glass	Aggregate Base	203 TONS
Fly Ash	Roadbed Embankment Component	865,186 CY
	Additive to asphalt pavement	40,800 TONS
	Concrete Mix Additive	2,138,398 LB
	Flowable Fill	126 CY
	Sign post w/concrete core	1,350 EA
Steel Slag	Aggregate Stone Base	224 TONS
Bottom Ash	Borrow	2,707 CY
Recycled Asphalt Pavement	Asphalt Mix Additive	1,022, 084 TONS
	Hot-in-Place Recycling	1,459,869 SY
	AC from RAP	140,450 TONS
	ABC	23,208 TONS

Asphalt Pavement Millings	Asphalt Mix Additive	222,299 CY
Asphalt Shingles	Asphalt Mix Additive	13,825 TONS
Processed Silica	Borrow	46,072 CY
Recycled Aggregate Base Coarse	Aggregate Base Coarse	850 TONS
Recycled Polyester Resin	Weedmat	963 SM
Recycled Polyester & Hog Hair	Cold Mix Asphalt Patching Material	20 LB
Unclassified Excavation	Fill Material	4,859,476 CY
18" Corrugated Metal Pipe	18" Corrugated Metal Pipe	40 LF
Berm Ditch	Borrow	483 LF
Recycled Asphalt Cement	Asphalt Cement	4,676 TONS
Refurbished Traffic Signal Heads	Traffic Signal Heads	11 EA
Type IV Double Faced Concrete Barrier	Concrete Barrier	4,171 LF
	Retaining Wall	3,100 LF
Wooden Breakaway Posts	Reuse - Guardrail Offset Blocks	11,409 EA
Concrete		
Recycled Concrete	Pavement Base Course Material	3,400 TONS
Crack and Seat Concrete	Similar to Rubblizing	260,778 TONS
Rubblized Concrete	Reuse as pavement base course	211,050 TONS
Concrete Pipe	Reuse as Concrete Pipe	2,940 LF
Recycled Concrete	RCA Shoulders	21,505 TONS
Recycled Concrete	Fill Material	18,337 CY
Steel (reused)		
Beams	Beams	80,000 LB
Guardrail	Guardrail	1,235 LF
Landscaping/Wildflowers/Roadside		
Lime-Stabilized Municipal Sludge	Soil amendment for wildflower beds	704 TONS
Hydromulch	Mulch for grass establishment	38 TONS
Aged Leaf Mold & Yard Debris	Soil amendment	2,370 TONS 1,000 CY
Mallinckrodt Ammonium Sulfate Liquid	Topdressing Fertilizer	420,948 GAL
Soil Derived from Demolition Debris	Soil Amendment	1,742 TONS
Nuggets of Broken Brick	Mulch	1,000 BAGS
Calcium/Sulfur Supplement	Soil Amendment to acidic soils	3 TONS
Bioremediated Petroleum Affected Soils	Soil Amendment	920 CY
Vegetative Clearing Debris	Erosion Control mulch	27 AC
Hog Waste Compost	Fertilizer	25 C Y
Cotton Gin Waste	Soil Amendment	7,130 CY
Clearing Debris	Mulch	327 CY
Hurricane Fran Mulch	Soil Amendment	200,000 CY

Bark Mulch	Soil Amendment	8,658 TONS/ 258,262 CY
Advanced Alkaline Sludge	Soil Amendment	495 TONS 414 AC
Municipal Sludge	Soil Amendment for Vegetative Cover	141.5 AC 8,610 TONS 200 CY
Swine Waste	Bio Soil Research/Experimentation	900 Lb.
Poultry Litter	Fertilizer	425 TONS 11,734 CY

APPENDIX TABLE 1
COUNTY WHITE GOODS PROGRAM DESCRIPTIONS

County	Tons	Operating Costs	Cost Per Ton	Capital Improvements	Cleanup Costs	Contractor
Alamance	922	$36,000	$39.05	$0	$0	DH Griffin
Alexander	80	$17,671	$220.89	$0	$711	State Line Scrap Metal
Alleghany	470	$13,846	$29.46	$0	$0	Gordon Iron & Metal
Anson	323	$8,787	$27.20	$0	$0	Metal Recycling Svcs/
Ashe	354	$37,059	$104.69	$0	$5,050	Elizabethton Iron & Metal Co.
Avery	463	$33,590	$72.55	$0	$0	Johnson City Herb & Metal
Beaufort	0	$0	No Data	$0	$0	
Bertie	0	$0	No Data	$0	$0	
Bladen	449	$26,604	$59.25	$0	$0	State Line Scrap Tire
Brunswick	1421	$99,524	$70.04	$0	$0	East Coast Mobile Recyclers
Buncombe	1827	$0	$0.00	$0	$0	Stateline Scrap Metals
Burke	1760	$52,697	$29.94	$3,890	$0	Stateline Scrap Metals
Cabarrus	674	$14,080	$20.89	$0	$0	State Line Scrap Dealers
Caldwell	1262	$28,997	$22.98	$0	$0	
Camden	0	$5,837	No Data	$0	$0	
Carteret	436	$59,525	$136.53	$0	$0	Waste Industries
Caswell	0	$0	No Data	$0	$0	
Catawba	1073	$51,184	$47.70	$0	$0	Tri-State Scrap Metal
Chatham	1199	$77,006	$64.23	$0	$0	Stateline Scrap Metal
Cherokee	147	$2,925	$19.90	$0	$0	Jack Millsaps
Chowan	0	$0	No Data	$0	$0	
Clay	150	$7,953	$53.02	$0	$0	Cleveland Ward JR
Cleveland	1866	$218,764	$117.24	$0	$0	Carolina Recycling Group
Columbus	0	$0	No Data	$0	$0	
Craven	2401	$176,912	$73.68	$0	$0	A Dixon /Carolina Salvage
Cumberland	1048	$190,757	$182.02	$0	$0	U.S. Salvage
Currituck	0	$0	No Data	$0	$0	
Dare	0	$0	No Data	$0	$0	
Davidson	801	$21,647	$27.02	$28,650	$0	Pugh Auto
Davie	237	$13,400	$56.54	$0	$0	
Duplin	739	$99,317	$134.39	$0	$0	Meshaw Bros
Durham	0	$0	No Data	$0	$0	
Edgecombe	1077	$42,051	$39.04	$0	$0	United Auto Salvage
Forsyth	2270	$62,942	$27.73	$0	$0	Pugh Auto Crushing
Franklin	0	$14,070	No Data	$0	$0	
Gaston	412	$168,915	$409.99	$0	$5,629	Webb Metals;Bruce's Iron & Metal
Gates	0	$0	No Data	$0	$0	
Graham	343	$63,089	$183.93	$1,398	$0	Johnson City Iron & Metal Co
Granville	597	$33,224	$55.65	$0	$0	United Salvage
Greene	0	$12,696	No Data	$0	$0	
Guilford	1476	$35,237	$23.87	$182,558	$98,149	DH Griffin Wrecking Co
Halifax	0	$15,434	No Data	$0	$0	
Harnett	710	$54,280	$76.45	$0	$0	Dunn Scrap Iron,Tart's Salvage
Haywood	0	$0	No Data	$0	$0	
Henderson	2384	$34,995	$14.68	$0	$0	Stateline Scrap Metals
Hertford	0	$0	No Data	$0	$0	
Hoke	0	$0	No Data	$0	$0	
Hyde	200	$7,200	$36.00	$0	$0	GDS Inc.
Iredell	470	$28,969	$61.64	$57,730	$0	L. Gordon Iron & Metal
Jackson	0	$0	No Data	$0	$0	
Johnston	559	$35,279	$63.11	$68,874	$0	Atlantic Scrap
Jones	58	$4,554	$78.52	$0	$0	A Dixon
Lee	616	$30,396	$49.34	$3,100	$0	State Line Scrap Metal

County	Tons	Operating Costs	Cost Per Ton	Capital Improvements	Cleanup Costs	Contractor
Lenoir	1432	$112,650	$78.67	$0	$0	Fussell Salvage
Lincoln	0	$0	No Data	$0	$0	
Macon	0	$0	No Data	$0	$0	
Madison	0	$0	No Data	$0	$0	
Martin	0	$0	No Data	$0	$0	
McDowell	675	$32,099	$47.55	$0	$0	
Mecklenburg	1978	$423,786	$214.25	$0	$0	Southern Metals,Metals Recovery
Mitchell	420	$48,212	$114.79	$0	$0	JC Iron & Metal Co
Montgomery	0	$0	No Data	$0	$0	
Moore	1364	$57,427	$42.10	$1,360	$0	Sandhills Recycling Co
Nash	1077	$184,316	$171.14	$0	$0	United Salvage Auto
New Hanover	1021	$21,600	$21.16	$0	$0	Southern Metals
Northampton	278	$45,410	$163.35	$0	$0	United Salvage
Onslow	555	$41,565	$74.89	$110,090	$0	East Coast Mobile Recycling
Orange	866	$121,740	$140.58	$105,031	$0	DH Griffin
Pamlico	0	$0	No Data	$0	$0	
Pasquotank	587	$29,085	$49.55	$0	$0	United Auto Salvage
Pender	0	$0	No Data	$0	$0	
Perquimans	597	$84,282	$141.18	$0	$0	
Person	212	$3,728	$17.58	$0	$0	
Pitt	1786	$51,866	$29.04	$0	$0	ECVC
Polk	0	$0	No Data	$0	$0	
Randolph	1078	$43,427	$40.28	$0	$0	Pugh Auto Crushing
Richmond	132	$9,349	$70.83	$0	$0	Stateline Scrap Metals
Robeson	0	$0	No Data	$0	$0	
Rockingham	1448	$42,870	$29.61	$1,000	$1,748	DH Griffin
Rowan	154	$20,647	$134.07	$6,683	$0	Tri -State Scrap,C&D Salvage
Rutherford	0	$0	No Data	$0	$0	
Sampson	0	$0	No Data	$0	$0	
Scotland	0	$36,950	No Data	$0	$0	
Stanly	1172	$34,102	$29.10	$0	$0	Stateline Scrap Metal
Stokes	0	$0	No Data	$0	$0	
Surry	887	$8,752	$9.87	$0	$0	Pugh Auto Crushing
Swain	723	$8,618	$11.92	$0	$0	Phillips Metals
Transylvania	238	$6,070	$25.50	$5,315	$5,315	Stateline
Tyrrell	15	$3,918	$261.20	$0	$0	
Union	0	$41,700	No Data	$21,750	$0	Stateline
Vance	0	$0	No Data	$0	$0	
Wake	0	$0	No Data	$0	$0	
Warren	155	$13,353	$86.15	$0	$28,000	United Auto Salvage
Washington	351	$78,349	$223.22	$0	$0	
Watauga	522	$43,848	$84.00	$0	$0	Johnson City Iron & Metal
Wayne	0	$0	No Data	$0	$0	
Wilkes	44	$0	$0.00	$0	$0	Stateline
Wilson	1076	$11,746	$10.92	$0	$0	Harper Auto Crusher
Yadkin	0	$0	No Data	$0	$0	
Yancey	0	$0	No Data	$0	$0	
Totals	**52,117**	**$3,598,878**		**$597,429**	**$144,602**	

APPENDIX TABLE 2
COUNTY WHITE GOODS PROGRAM ALLOCATIONS

County	Distribution	Proceeds Rec'd	Undesignated Ending Balance
Alamance	$49,727.37	$49,727.37	($11,097.00)
Alexander	$12,671.95	$0.00	$418.00
Alleghany	$3,096.76	$2,220.98	$0.00
Anson	$9,461.97	$9,461.97	$1,875.00
Ashe	$9,237.01	$9,237.01	$0.00
Avery	$6,583.61	$6,583.61	($36,730.00)
Beaufort	$16,911.39	$16,911.39	$0.00
Bertie	$7,409.02	$0.00	$0.00
Bladen	$12,108.25	$12,108.25	($6,293.00)
Brunswick	$28,459.55	$28,459.55	($86,303.00)
Buncombe	$77,812.20	$77,812.20	$0.00
Burke	$33,302.98	$33,302.98	($580.00)
Cabarrus	$50,560.63	$50,560.63	$7,573.00
Caldwell	$28,997.40	$28,997.40	$0.00
Camden	$2,614.71	$2,614.71	($31,254.00)
Carteret	$22,262.03	$22,262.03	($35,894.00)
Caswell	$8,848.56	$8,848.56	$0.00
Catawba	$53,979.27	$53,979.27	$0.00
Chatham	$18,921.26	$18,921.26	$0.00
Cherokee	$9,203.01	$5,110.14	$510.00
Chowan	$5,432.67	$5,432.67	$0.00
Clay	$3,351.62	$3,351.62	$0.00
Cleveland	$36,149.56	$36,149.56	$0.00
Columbus	$20,487.50	$20,487.50	$0.00
Craven	$34,330.22	$34,330.22	$0.00
Cumberland	$112,735.29	$50,446.67	($65,666.00)
Currituck	$6,991.83	$5,297.11	$0.00
Dare	$11,570.56	$11,570.56	$0.00
Davidson	$55,593.76	$55,593.76	$0.00
Davie	$13,434.23	$9,198.22	($2,555.00)
Duplin	$18,506.92	$18,506.92	$0.00
Durham	$84,912.00	$84,912.00	$0.00
Edgecombe	$16,050.88	$16,050.88	$0.00
Forsyth	$115,673.10	$0.00	$432,720.00
Franklin	$18,131.11	$18,131.11	$13,689.00
Gaston	$71,371.52	$71,371.52	($326,741.00)
Gates	$3,944.28	$3,944.28	$0.00
Graham	$2,999.27	$2,999.27	($58,729.00)
Granville	$18,484.80	$18,484.80	$10,395.00
Greene	$7,102.35	$7,102.35	($3,300.00)
Guilford	$158,340.83	$87,720.16	$0.00
Halifax	$21,366.78	$21,366.78	$0.00
Harnett	$34,822.82	$15,442.26	($63,005.00)
Haywood	$20,365.36	$20,365.36	$0.00
Henderson	$34,042.51	$34,042.51	($65,788.00)
Hertford	$8,316.00	$8,316.00	$0.00
Hoke	$12,944.60	$5,736.37	$0.00
Hyde	$2,155.15	$2,155.15	($3,723.00)
Iredell	$47,405.90	$47,405.90	$0.00
Jackson	$12,542.44	$9,796.92	$0.00
Johnston	$47,343.94	$47,343.94	($118,741.00)
Jones	$3,857.03	$0.00	$17,678.00
Lee	$18,451.30	$18,451.30	($5,172.00)

County	Distribution	Proceeds Rec'd	Undesignated Ending Balance
Lenoir	$22,187.55	$22,187.55	$0.00
Lincoln	$24,326.86	$24,326.86	$0.00
Macon	$11,329.45	$11,329.45	$0.00
Madison	$7,383.63	$7,383.63	($2,119.00)
Martin	$9,488.89	$0.00	$0.00
McDowell	$15,963.07	$15,963.07	$0.00
Mecklenburg	$265,564.21	$117,903.41	($37,763.00)
Mitchell	$5,916.60	$5,916.60	$47,577.00
Montgomery	$10,069.39	$10,069.39	($71,810.00)
Moore	$28,427.46	$28,427.46	$0.00
Nash	$32,950.47	$32,950.47	($60,470.00)
New Hanover	$60,995.17	$60,995.17	($38,303.00)
Northampton	$8,230.96	$8,230.96	$0.00
Onslow	$55,511.40	$24,800.48	($88,464.00)
Orange	$45,011.80	$45,011.80	$0.00
Pamlico	$4,809.68	$4,809.68	($220,418.00)
Pasquotank	$13,084.38	$13,084.38	$0.00
Pe/Ch/Ga	$6,095.12	$6,095.12	($52,307.00)
Pender	$15,654.00	$15,654.00	$0.00
Perquimans	$4,293.82	$4,293.82	($38,866.00)
Person	$13,466.76	$13,466.76	$2,860.00
Pitt	$50,376.44	$50,376.44	$79.00
Polk	$6,999.24	$6,999.24	$0.00
Randolph	$49,281.31	$49,281.31	($16,963.00)
Richmond	$17,401.22	$0.00	$27,573.00
Robeson	$46,346.95	$20,669.64	$0.00
Rockingham	$34,322.43	$34,322.43	($8,752.00)
Rowan	$49,138.53	$0.00	$0.00
Rutherford	$23,655.52	$23,655.52	$0.00
Sampson	$22,727.57	$0.00	$0.00
Scotland	$13,375.93	$13,375.93	($39,540.00)
Stanly	$21,926.82	$21,926.82	($39,540.00)
Stokes	$16,879.42	$16,879.42	$0.00
Surry	$26,680.59	$26,680.59	$4,369.00
Swain	$4,913.85	$4,913.85	$0.00
Transylvania	$10,972.30	$10,972.30	$1,944.00
Tyrrell	$1,548.22	$1,548.22	$3,219.00
Union	$48,729.23	$48,729.23	($27,592.00)
Vance	$16,276.51	$16,276.51	$0.00
Wake	$243,880.68	$0.00	$0.00
Warren	$7,475.29	$7,475.29	($4,744.00)
Washington	$5,089.99	$5,089.99	($170,181.00)
Watauga	$15,961.67	$15,961.67	($38,738.00)
Wayne	$42,313.11	$42,313.11	$0.00
Wilkes	$24,670.92	$0.00	$59,207.00
Wilson	$27,761.56	$27,761.56	($197,188.00)
Yadkin	$13,662.68	$6,093.88	$0.00
Yancey	$6,714.27	$6,714.27	$0.00

APPENDIX TABLE 3
COUNTY TIRE DISPOSAL ACTIVITIES

County	Tax Revenue	Total Costs	Net	Cost/Ton	Contractor
Alamance	$122,115.67	$111,462.37	$10,653.30	$71.95	CCTD
Alexander	31,127.25	35,425.25	(4298.00)	80.15	UST
Alleghany	9,848.83	17,069.00	(7220.17)	108.35	UST
Anson	17,450.70	19,876.30	(2425.61)	27.88	UST
Ashe	22,684.39	28,479.00	(5794.61)	60.00	UST
Avery	16,165.41	25,865.82	(9700.41)	103.54	UST
Beaufort	41,540.06	90,736.13	(49,196.07)	99.59	CCTD
Bladen	29,746.17	45,786.93	(16,040.76)	73.45	CCTD
Brunswick	69,841.12	117,329.08	(47,487.96)	100.00	CCTD
Buncombe	191,131.86	183,816.00	7,315.86	72.00	UST
Burke	81,829.02	85,202.49	(3,373.47)	68.20	UST
Cabarrus	124,111.44	114,346.57	9,764.87	62.58	UST
Caldwell	71,238.75	95,373.50	(24,134.75)	60.28	UST
Camden	6,421.00	9,946.00	(3,525.00)	155.94	CCTD
Caswell	21,735.71	11,933.22	9,802.49	97.64	CCTD
Catawba	132,547.21	202,017.01	(69,469.80)	70.55	UST
Chatham	46,452.22	68,464.00	(22,011.78)	103.58	CCTD
Cherokee	22,602.24	32,045.50	(9443.26)	106.65	UST
Clay	8,229.17	15,104.75	(6875.58)	38.25	UST
Cleveland	88,805.35	154,694.30	(65,888.95)	95.33	UST
Columbus	50,333.71	84,239.00	(33,905.20)	71.38	CCTD
CRSWMA	150,842.13	190,792.74	(39,950.61)	99.60	CCTD
Cumberland	277,031.74	281,742.00	(4,710.26)	71.27	CCTD
Currituck	17,164.07	21,328.19	(4,164.12)	95.69	WMgt
Dare	28,400.75	18,077.88	10,322.87	23.08	CCTD
Davidson	136,548,45	131,977.38	4,571.07	103.55	UST
Davie	32,975.69	23,426.55	9,549.14	67.50	UST
Duplin	45,460.51	58,951.65	(13,491.14)	116.20	CCTD
Durham	208,522.42	232,925.19	(24,402.77)	87.93	CCTD
Edgecombe	50,416.74	50,750.00	(333.26)	74.38	CCTD
Forsyth	284,104.50	415,602.35	(131,497.85)	76.72	UST
Franklin	44,513.26	42,476.98	2,036.28	83.16	CCTD
Gaston	175,333.57	167,678.93	7,654.64	77.19	UST
Graham	7,367.95	8,750.00	(1,382.05)	100.16	CCTD
Granville	45,392.19	60,759.38	(15,367.19)	75.55	CCTD
Greene	17,449.80	18,659.38	(1,209.58)	84.47	CCTD
Guilford	388,981.93	636,687.71	(247,705.78)	72.80	CCTD
Halifax	52,498.96	63,562.20	(11,063.24)	82.30	CCTD
Harnett	85,500.75	85,218.00	219.75	66.80	CCTD
Haywood	50,023.74	86,638.95	(36,615.21)	99.26	WRec
Henderson	83,589.16	150,241.32	(66,652.16)	106.48	UST
Hertford	20,441.23	34,476.80	(14,035.57)	101.99	CCTD
Hoke	31,780.96	27,706.67	4,074.29	70.56	CCTD
Iredell	116,358.08	195,393.92	(79,035.84)	73.22	UST
Jackson	30,806.67	47,730.60	(16,923.93)	96.43	WMgt
Johnston	116,199.42	124,704.97	(8,505.55)	72.71	CCTD
Jones	9477.94	13,462.46	(3,984.52)	75.27	CCTD
Lee	45,326.20	34,075.34	11,250.86	52.94	CCTD

County	Tax Revenue	Total Costs	Net	Cost/Ton	Contractor
Lenoir	54,519,48	66,382.40	(11,862.92)	78.90	CCTD
Lincoln	59,734.66	96,193.60	(36,458.94)	74.55	UST
Macon	27,822.74	50,183.15	(22,360.41)	88.82	UST
Madison	18,138.00	23,932.00	(5,794.00)	106.19	UST
Martin	23,318,10	23,639.00	(320.90)	74.10	CCTD
McDowell	39,206.06	66,176.14	(26,970.08)	94.72	UST
Mecklenburg	652,112.57	806,352.28	(154,239.71)	66.19	UST
Mitchell	14,531.64	36,432.75	(21,892.11)	93.88	UST
Montgomery	24,736.64	23,076.67	1,659.97	119.95	CCTD
Moore	69,810.88	48,074.34	21,736.54	66.60	CCTD
Nash	80,935,34	109,254.68	(28,319.34)	82.00	CCTD
New Hanover	149,790.20	231,526.95	(81,736.75)	83.00	CCTD
Northampton	20,223.90	21,717.60	(1,493.70)	66.80	CCTD
Onslow	72,129.75	116,394.65	(44,264.90)	79.11	CCTD
Orange	110,532.99	133,065.36	(22,532.37)	122.52	CCTD
Pasquotank	32,144,47	71,357.28	(39,212.81)	101.05	CCTD
Pender	38,442.04	62,749.45	(24,307.41)	96.43	CCTD
PeGaCh	33,582.65	61,712.00	(28,129.35)	90.62	CCTD
Person	33,075.50	43,095.00	(10,019.50)	88.86	CCTD
Pitt	123,752.21	213,905.90	(90,153.69)	77.36	CCTD
Polk	17,185.49	20,915.00	(3729.51)	45.27	UST
Randolph	121,047.58	212,568.62	(91,521.04)	89.62	CCTD
Richmond	42,751.33	46,000.00	(3,248.67)	51.68	CCTD
Robeson	113,855.78	95,523.30	18,332.48	69.42	CCTD
Rockingham	84,328.34	96,307.52	(11,979.18)	77.51	CCTD
Rowan	120,699.91	203,495.17	(82,795.26)	77.88	UST
Rutherford	58,107.62	106,118.30	(48,010.68)	90.94	UST
Sampson	55,826.04	75,356.00	(19,529.96)	82.27	CCTD
Scotland	32,868.88	34,838.56	(1,969.68)	66.74	CCTD
Stanly	53,858.00	96,023.42	(42,165.42)	107.27	UST
Stokes	41,459.93	34,522.64	6,937.29	73.46	UST
Surry	65,549.76	113,366.21	(47,816.45)	77.38	CCTD
Swain	12,067.11	12,675.00	(607.89)	86.53	UST
Transylvania	26,958.30	31,744.50	(4,786.20)	93.03	UST
Tyrell	3,803.05	2,707.22	1,095.83	95.16	CCTD
Union	119,540.69	116,002.26	3,538.43	66.00	UST
Vance	39,972.61	96,467.14	(56,494.53)	142.45	CCTD
Wake	598,550.82	629.670.37	(31,119.55)	75.77	CCTD
Warren	18,367.75	25,996.50	(7,628.75)	75.90	CCTD
Washington	12,507.59	35,971.32	(23,463.73)	85.70	CCTD
Watauga	39,217.39	56,414.00	(17,196.61)	88.28	UST
Wayne	103,962.05	130,863.00	(26,900.95)	58.50	CCTD
Wilkes	60,603.07	95,482.80	(34,879.73)	95.46	UST
Wilson	68,195.60	138,622.60	(70,427.00)	59.98	CCTD
Yadkin	33,564.05	35,435.66	(1,871.61)	61.86	UST
Yancey	16,491.08	30,526.87	(14,035.79)	97.00	UST
TOTAL	**$7,491,899.76**	**$9,664,630.84**			

CCTD – Central Carolina Tire Disposal
UST – U.S. Tire Disposal
WMgt – Waste Management
Wrec – Waste Recovery