North Carolina

SOLID WASTE MANAGEMENT

Annual Report

JULY 1, 2001 - JUNE 30, 2002

State of North Carolina
Michael F. Easley, Governor

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

Acknowledgements

This is the twelfth 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:

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Solid Waste Management Annual Report
Fiscal Year 2001-2002

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 517 (100 county and 417 municipal) local government annual reports, 293 (including 9 out-of-state) permitted solid waste management facilities and 167 state agencies, institutions and schools. These reports represent activities related to the management of solid waste for the period July 1, 2001 through June 30, 2002.

This report is a consolidation of reports 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 contains information from the Department of Transportation regarding the use of recycled materials in contracts and the Department of Administration's information on bid procedures, purchase of materials with recycled content and a summary of purchases of items with recycled content.

KEY FINDINGS

- The state per capita disposal rate was 1.22 tons per person per year, a 1 percent increase over the 1.21 rate from last fiscal year or an increase of 14 percent from the base year.
- North Carolina disposed of 10,003,070 tons of waste in N.C. and out-of-state facilities. This represents an increase of 250,560 tons from the previous fiscal year.
- A total of 8,808,147 tons of solid waste was received at N.C. permitted solid waste management landfills during FY 01-02, with 117,981 tons originating from other states. This represents an increase of 96,367 tons over the previous fiscal year's imports.
- Ten N.C. counties accounted for 49 percent of the solid waste disposed in the state. Fifty-four counties exported waste from North Carolina to landfills in Virginia, South Carolina, Tennessee and Georgia. South Carolina and Virginia accounted for all waste imported to North Carolina.
- Major materials recovered by NC local governments during FY 01-02 were paper (56%), metals (24%) and glass (10%).

RECOMMENDATIONS

- Increase the source reduction and recycling of municipal solid waste and the source-separated composting of organics to minimize the need for additional MSW disposal capacity as the population grows and per capita disposal continues to increase.
- Enhance infrastructure and markets for increased source reduction and recycling of both MSW and special waste to reduce the need for additional disposal capacity.

SOLID WASTE DISPOSAL

In the past year, North Carolina continued its trend of increasing the amount of solid waste requiring disposal. The increase is surprising. Conventional wisdom has held that during a time of economic recession, waste will decrease. This did not happen. Waste disposal increased in both total amount disposed and on a per capita basis.

The state measures changes in waste disposal rates by comparing the per capita waste disposal rate in the base year (FY 91-92) against the per capita rate in the current year. The analysis shows a pattern of waste disposal. Negative numbers indicate a decrease in the per capita disposal rate; positive numbers an increase. Changes in waste disposal 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, N.C. continues to increase the absolute amount of waste disposed and presents a trend toward per capita increase.

Formula: ***Total Tons Disposed ÷ Population = Per Capita Disposal Rate***

Fiscal Year	Tons Disposed	Population	Per Capita Disposal Rate	Change from 1991-1992
2001-2002	10,003,070	8,188,008	1.22	14 %
2000-2001	9,752,510	8,049,313	1.21	13 %
1999-2000	(adjusted*) 9,937,355	7,938,062	1.26	18 %
1999-2000	10,267,137	7,938,062	1.30	22 %
1998-1999	9,214,323	7,797,501	1.19	12 %
1997-1998	8,607,578	7,645,512	1.13	6 %
1996-1997	(adjusted*) 8,041,734	7,490,812	1.08	1 %
1996-1997	8,741,727	7,490,812	1.17	10 %
1995-1996	7,722,795	7,336,228	1.06	-1 %
1994-1995	7,624,144	7,180,525	1.07	0 %
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) 1.07	
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 have been created by Hurricanes Bertha, Fran (1996-1997) and Floyd (1999-2000).

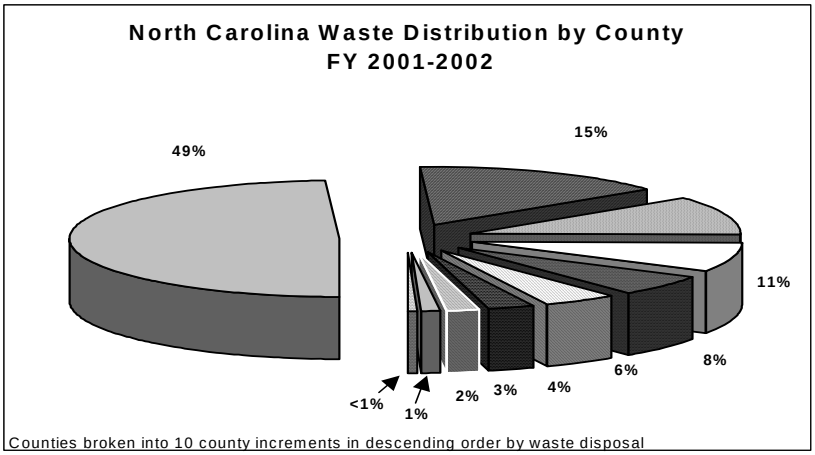
**The tons managed figure was determined by adding the total amount of municipal solid waste disposed in landfills and incinerators to the amount of waste managed through local governments' recycling, composting and mulching efforts in FY 91-92. Recycling, composting and mulching were added to the tons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

Solid waste disposal was first reported on a statewide basis in FY 90-91. In the early 1990s, the state made slight reductions in per capita waste. Several factors caused this reduction. The establishment of tipping fees served as an incentive to explore other options for solid waste that did not require disposal in 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. Additionally, during the early part of the decade, the state and country were experiencing a recession. Many attributed the waste reduction to the depressed economy.

During the mid 1990s, the state experienced significant waste disposal rate increases. Even factoring in allowances for two natural disasters, the rate of disposal growth was considerable. The strength of the economy was one purported reason to cause the growth. When the state and nation entered recession a waste reduction was expected, but did not occur. The year ending June 30, 2002 saw an increase of approximately 250,000 tons over the previous fiscal year. The recession analysis model does not appear useful when analyzing the change in waste management.

Although not applicable during the report period, the influence of natural disasters on waste disposal is noteworthy. Waste disposal amounts attributed to Hurricane Fran in FY 96-97 were estimated based on the past trend of waste and per capita disposal. Unlike the estimates used with Hurricane Fran, counties reported actual totals following Hurricane Floyd in FY 99-00. A total of 329,782 tons of disaster debris was reported for FY 99-00. When looking at the pattern of waste disposal over the last twelve years, adjusted figures for FY 99-00 remain higher than expected. A portion of this disposal can possibly be attributed to under-reported disposal amounts of hurricane related waste for FY 99-00.

There appears to be no discernible pattern in the year-to-year change when reviewing individual counties. In FY 01-02, 10 North Carolina counties produced approximately 49 percent of the waste disposed with 41 percent of the states' population. These large counties have a dramatic impact on North Carolina totals as evidenced in the following table. In the table, counties are ranked according to FY 00-01 waste disposed. The ranking indicates disparity among the counties in N.C. Sixty counties had increases, while 40 counties posted decreases.



County Waste Disposed by Volume

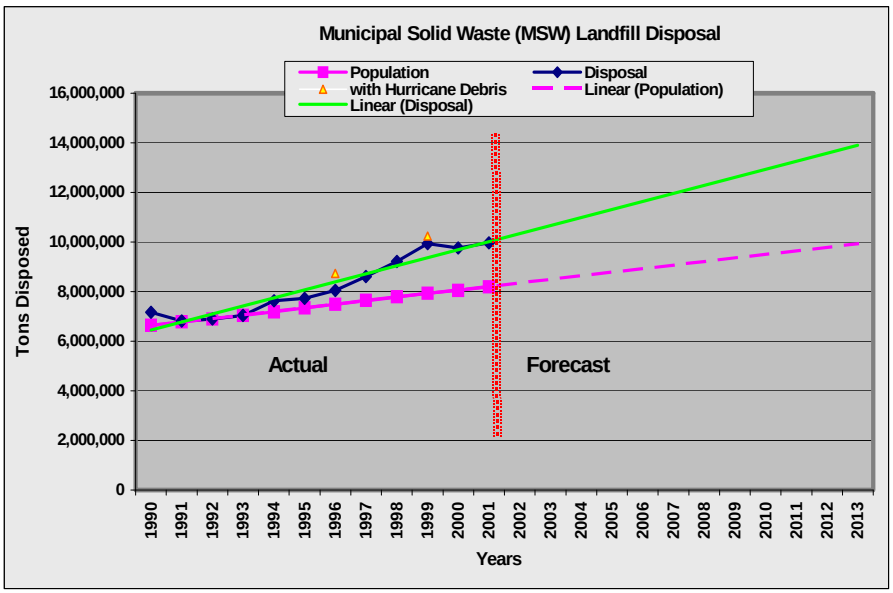
County Group	Tons Disposed FY 00-01	Tons Disposed FY 01-02	Percent of NC Waste FY 01-02	Cumulative Percent FY01-02	Change FY 00-01 to FY 01-02	Percent Change
GROUP#1						
MECKLENBURG	1,233,824	1,279,090	12.79%	12.84%	45,256.86	3.5%
WAKE	926,504	880,136	8.80%	21.64%	(46,367.44)	-5.3%
GUILFORD	730,012	758,566	7.58%	29.22%	28,553.76	3.8%
FORSYTH	465,134	447,508	4.47%	33.70%	(17,626.61)	-3.9%
CUMBERLAND	351,620	403,473	4.03%	37.73%	51,853.32	12.9%
NEW HANOVER	259,305	241,951	2.42%	40.15%	(17,354.00)	-7.2%
BUNCOMBE	251,472	247,830	2.48%	42.63%	(3,642.25)	-1.5%
DURHAM	238,894	260,680	2.61%	45.23%	21,785.82	8.4%
GASTON	215,226	214,185	2.14%	47.37%	(1,041.14)	-0.5%
CABARRUS	187,508	203,981	2.04%	49.41%	16,472.69	8.1%
TOTAL	**4,859,499**	**4,937,399**	**49.36%**	**49.41%**	**77,900.02**	**18.3%**
GROUP #2						
IREDELL	174,900	169,967	1.70%	51.11%	(4,932.19)	-2.9%
UNION	171,781	165,366	1.65%	52.76%	(6,414.71)	-3.9%
CATAWBA	156,951	165,509	1.65%	54.42%	8,558.24	5.2%
ONSLOW	144,917	157,279	1.57%	55.99%	12,362.05	7.9%
ROWAN	142,801	139,616	1.40%	57.38%	(3,184.27)	-2.3%
ALAMANCE	142,244	143,394	1.43%	58.82%	1,149.65	0.8%
DAVIDSON	137,460	125,040	1.25%	60.07%	(12,419.55)	-9.9%
PITT	137,342	152,049	1.52%	61.59%	14,706.80	9.7%
JOHNSTON	136,796	159,475	1.59%	63.18%	22,678.45	14.2%
WILSON	129,960	133,235	1.33%	64.51%	3,275.35	2.5%
TOTAL	**1,475,150**	**1,510,930**	**15.10%**	**64.51%**	**35,779.82**	**21.2%**
GROUP #3						
ROBESON	128,176	117,366	1.17%	65.68%	(10,809.90)	-9.2%
EDGECOMBE	113,185	125,204	1.25%	66.93%	12,018.97	9.6%
WAYNE	112,683	133,568	1.34%	68.27%	20,885.50	15.6%
RANDOLPH	105,189	115,987	1.16%	69.43%	10,797.75	9.3%
ORANGE	103,344	98,415	0.98%	70.41%	(4,928.93)	-5.0%
ROCKINGHAM	97,313	94,982	0.95%	71.36%	(2,330.09)	-2.5%
HENDERSON	95,443	97,650	0.98%	72.34%	2,206.74	2.3%
MOORE	94,265	89,503	0.89%	73.23%	(4,762.06)	-5.3%
LENOIR	93,061	99,163	0.99%	74.23%	6,102.13	6.2%
CRAVEN	92,746	87,056	0.87%	75.10%	(5,690.26)	-6.5%
TOTAL	**1,035,405**	**1,058,895**	**10.59%**	**75.10%**	**23,489.85**	**14.4%**

County Group	Tons Disposed FY 00-01	Tons Disposed FY 01-02	Percent of NC Waste FY 01-02	Cumulative Percent FY01-02	Change FY 00-01 to FY 01-02	Percent Change
CALDWELL	91,387	86,065	0.86%	75.96%	(5,322.24)	-6.2%
BURKE	88,239	86,459	0.86%	76.82%	(1,780.66)	-2.1%
CLEVELAND	87,224	84,793	0.85%	77.67%	(2,430.55)	-2.9%
BRUNSWICK	87,059	103,367	1.03%	78.71%	16,307.37	15.8%
CARTERET	78,191	80,691	0.81%	79.51%	2,499.91	3.1%
SURRY	73,848	71,956	0.72%	80.23%	(1,892.39)	-2.6%
DARE	73,445	75,809	0.76%	80.99%	2,364.27	3.1%
HARNETT	70,712	74,032	0.74%	81.73%	3,320.02	4.5%
LINCOLN	70,311	82,695	0.83%	82.56%	12,383.85	15.0%
STANLY	69,654	73,494	0.73%	83.29%	3,840.15	5.2%
TOTAL	**790,071**	**819,361**	**8.19%**	**83.29%**	**29,289.73**	**32.9%**
GROUP #5					-	
LEE	67,018	61,739	0.62%	83.91%	(5,278.96)	-8.6%
GRANVILLE	61,014	71,174	0.71%	84.62%	10,159.62	14.3%
RUTHERFORD	59,837	65,080	0.65%	85.27%	5,242.50	8.1%
NASH	59,396	66,484	0.66%	85.93%	7,087.96	10.7%
WILKES	59,147	60,671	0.61%	86.54%	1,524.42	2.5%
VANCE	55,625	56,260	0.56%	87.10%	634.87	1.1%
BEAUFORT	51,840	56,663	0.57%	87.67%	4,822.75	8.5%
HALIFAX	50,389	50,486	0.50%	88.17%	96.66	0.2%
FRANKLIN	47,554	52,775	0.53%	88.70%	5,221.01	9.9%
WATAUGA	47,220	49,014	0.49%	89.19%	1,793.66	3.7%
TOTAL	**559,040**	**590,344**	**5.90%**	**89.19%**	**31,304.50**	**50.3%**
GROUP # 6					-	
SCOTLAND	45,983	36,428	0.36%	89.55%	(9,555.08)	-26.2%
SAMPSON	45,333	47,453	0.47%	90.03%	2,120.38	4.5%
HAYWOOD	44,448	50,438	0.50%	90.53%	5,990.15	11.9%
COLUMBUS	42,526	38,628	0.39%	90.92%	(3,897.79)	-10.1%
JACKSON	40,476	38,542	0.39%	91.30%	(1,934.43)	-5.0%
RICHMOND	38,877	55,651	0.56%	91.86%	16,774.49	30.1%
McDOWELL	38,015	36,698	0.37%	92.23%	(1,316.23)	-3.6%
DUPLIN	37,909	45,558	0.46%	92.68%	7,649.96	16.8%
BLADEN	35,536	37,480	0.37%	93.06%	1,944.73	5.2%
DAVIE	33,288	35,279	0.35%	93.41%	1,991.02	5.6%
TOTAL	**402,390**	**422,157**	**4.22%**	**93.41%**	**19,767.21**	**29.2%**
GROUP #7					-	
PERSON	32,938	32,430	0.32%	93.73%	(508.18)	-1.6%
PASQUOTANK	32,065	35,131	0.35%	94.09%	3,065.97	8.7%
MACON	30,009	32,483	0.32%	94.41%	2,474.57	7.6%
MONTGOMERY	29,567	38,236	0.38%	94.79%	8,66.54	22.7%
CHATHAM	28,377	28,155	0.28%	95.07%	(222.52)	-0.8%
TRANSYLVANIA	28,103	29,180	0.29%	95.37%	1,076.56	3.7%
CURRITUCK	26,241	29,943	0.30%	95.66%	3,702.37	12.4%
ASHE	24,903	22,881	0.23%	95.89%	(2,022.83)	-8.8%
ALEXANDER	24,636	25,017	0.25%	96.14%	381.86	1.5%
PENDER	21,718	27,351	0.27%	96.42%	5,632.62	20.6%
TOTAL	**278,558**	**300,807**	**3.01%**	**96.42%**	**22,248.96**	**66.0%**
GROUP #8					-	
BERTIE	21,319	27,614	0.28%	96.70%	6,295.80	22.8%
HERTFORD	20,659	19,315	0.19%	96.89%	(1,343.84)	-7.0%
CHEROKEE	20,209	19,108	0.19%	97.08%	(1,101.38)	-5.8%
HOKE	19,977	22,426	0.22%	97.30%	2,448.93	10.9%
YADKIN	19,795	19,767	0.20%	97.50%	(27.89)	-0.1%

County Group	Tons Disposed FY 00-01	Tons Disposed FY 01-02	Percent of NC Waste FY 01-02	Cumulative Percent FY01-02	Change FY 00-01 to FY 01-02	Percent Change
ANSON	19,471	23,145	0.23%	97.73%	3,674.14	15.9%
MARTIN	18,475	18,804	0.19%	97.92%	329.50	1.8%
CHOWAN	16,804	15,429	0.15%	98.08%	(1,374.95)	-8.9%
AVERY	16,724	16,673	0.17%	98.24%	(50.81)	-0.3%
MITCHELL	16,287	17,120	0.17%	98.41%	832.09	4.9%
TOTAL	**189,720**	**199,401**	**1.99%**	**98.57%**	**9,681.59**	**34.1%**
GROUP #9					-	
POLK	14,079	13,275	0.13%	98.70%	(804.16)	-6.1%
NORTHAMPTON	13,204	10,757	0.11%	98.81%	(2,446.53)	-22.7%
STOKES	12,716	15,657	0.16%	98.97%	2,941.24	18.8%
MADISON	12,464	14,863	0.15%	99.12%	2,398.21	16.1%
YANCEY	12,091	11,718	0.12%	99.23%	(373.23)	-3.2%
CASWELL	11,250	9,486	0.09%	99.33%	(1,764.08)	-18.6%
WASHINGTON	9,859	13,346	0.13%	99.46%	3,487.74	26.1%
WARREN	9,518	8,685	0.09%	99.55%	(833.30)	-9.6%
ALLEGHANY	8,160	8,027	0.08%	99.63%	(132.12)	-1.6%
PERQUIMANS	7,969	8,348	0.08%	99.71%	378.88	4.5%
TOTAL	**111,309**	**114,162**	**1.14%**	**99.71%**	**2,852.65**	**3.8%**
GROUP #10						
GRAHAM	7,724	6,845	0.07%	99.54%	(879.00)	-12.8%
GREENE	7,636	5,677	0.06%	99.60%	(1,959.67)	-34.5%
PAMLICO	7,357	8,060	0.08%	99.68%	702.80	8.7%
SWAIN	7,334	9,132	0.09%	99.77%	1,798.19	19.7%
HYDE	5,086	4,739	0.05%	99.82%	(347.11)	-7.3%
GATES	5,044	5,426	0.05%	99.87%	382.34	7.0%
CLAY	4,480	4,848	0.05%	99.92%	367.81	7.6%
CAMDEN	2,872	3,033	0.03%	99.95%	160.50	5.3%
TYRRELL	2,186	2,361	0.02%	99.97%	175.21	7.4%
JONES	1,647	2,488	0.02%	100.00%	840.39	33.8%
TOTAL	**51,367**	**52,609**	**0.53%**	**100.00%**	**1,241.47**	**34.9%**
TOTAL ALL NC		**10,003,070**				

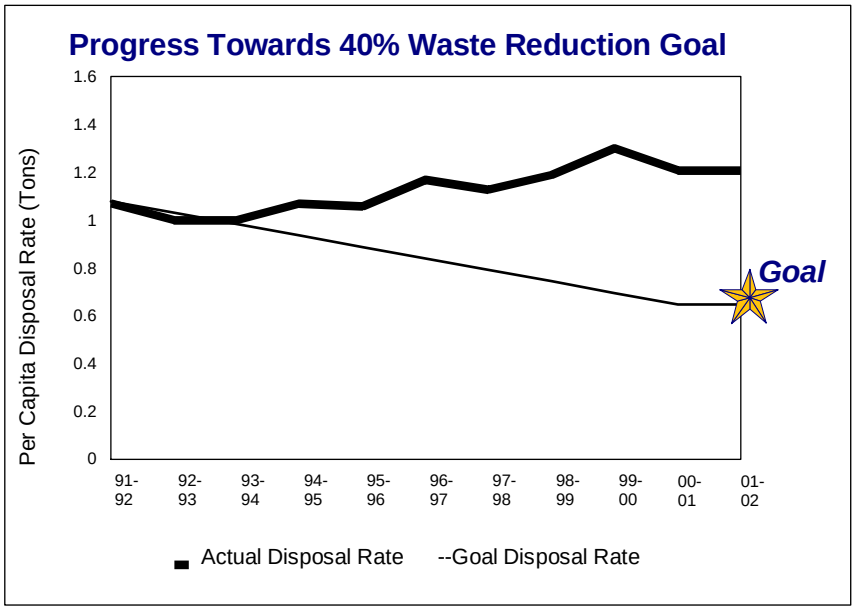
FUTURE WASTE DISPOSAL NEEDS

Forecasting future waste disposal is done by regression analysis using historical trends to forecast future amounts. When combined with absolute population growth, the continued increase in disposal could mean that N.C. would dispose of nearly 14 million tons in 10 years. This amount would equal nearly a ton and a half of waste for every citizen by 2012. This forecast does not include the impact of natural disasters, such as hurricanes, on the projected waste stream. The obvious implication of this trend is increased demand for landfill space.



THE 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 1.07 to 1.22 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 waste reduction goal.



Alleghany, Jones, Northampton and Orange Counties all recorded a 40 percent or better reduction from the base year. Orange County's reduction is remarkable in that it is the only preceding county that has a population over 100,000, is part of the rapidly growing Research Triangle Park, and has documented waste reduction progress 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 a recycling service to local bars and restaurants, salvaging construction and demolition waste, food waste diversion program and banning non-residential corrugated cardboard from the landfill. The other counties do not appear to have aggressive programs and the original base year data may not be accurate.

Statewide, the reasons for not achieving the goal are complex and interrelated. Three fundamental reasons for not reaching the waste reduction goal are a change 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 have the expected impact on landfill disposal. Additionally, the U.S. Supreme Court overturned legislation on flow control and prohibited local governments from directing waste to certain disposal facilities. Instead, waste is legally considered a commodity and must be allowed free movement.

The commitment to waste reduction waned over the years, as the 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 occur. Other environmental issues took center stage as the “solid waste crisis” of the late 1980s seemed to be solved.

The economics governing landfill disposal changed since the goal was adopted. Landfills simply did not become as expensive to operate as initially projected. Landfill customers readily adapted to tip fees and did not pursue waste reduction as an anticipated cost control strategy. Strong state and national economies of the nineties and moderate disposal costs reduced the motivation to divert materials from landfills. The recent economic downturn has not resulted in a decrease in waste disposal as had been expected.

LANDFILLS REMAIN DIFFICULT TO SITE

Efforts to gain local government approval for siting or expanding landfills continues to be difficult. Recent decisions for new MSW landfills have been challenged under various legal procedures. A landfill is an essential component of a comprehensive program that safely and economically manages solid waste. For many years, North Carolina had a system of county owned and operated landfills. These facilities primarily served the county in which they were located. Currently, a large majority of North Carolina's municipal solid waste is placed in regional landfills, either inside or outside of the state. These regional landfills, which may be owned by local governments, private waste management companies, or a combination of the two, serve large geographic areas.

Existing requirements for obtaining a landfill permit include certification to the state that the local government, with jurisdiction over the location, has given its approval. This local approval involves several procedural steps that offer numerous opportunities for public participation. The state permit review process considers the local government approval process. The state also conducts additional review procedures to meet U.S. EPA's environmental justice policies. These review considerations comprise a significant portion of previous legal challenges to issued permits.

Public response to landfills is intensely negative, especially from citizens who would neighbor proposed sites. This response has been consistent, regardless of whether the landfill in question is regional or exclusive to the county where it is located. Local elected officials cite negative public response as a primary reason for not giving approval for proposed landfills.

The Solid Waste Section has initiated a program to offer citizens; especially those impacted by a potential landfill permit decision, more opportunity to participate in the process. Upon receipt of a site suitability application or permit modification, the section holds a series of public meetings. The process has two steps. An initial meeting is held for citizens and businesses closest to the landfill; the second meeting targets the entire county. If necessary, concerns expressed in the meetings are forwarded to the appropriate government or non-government agency.

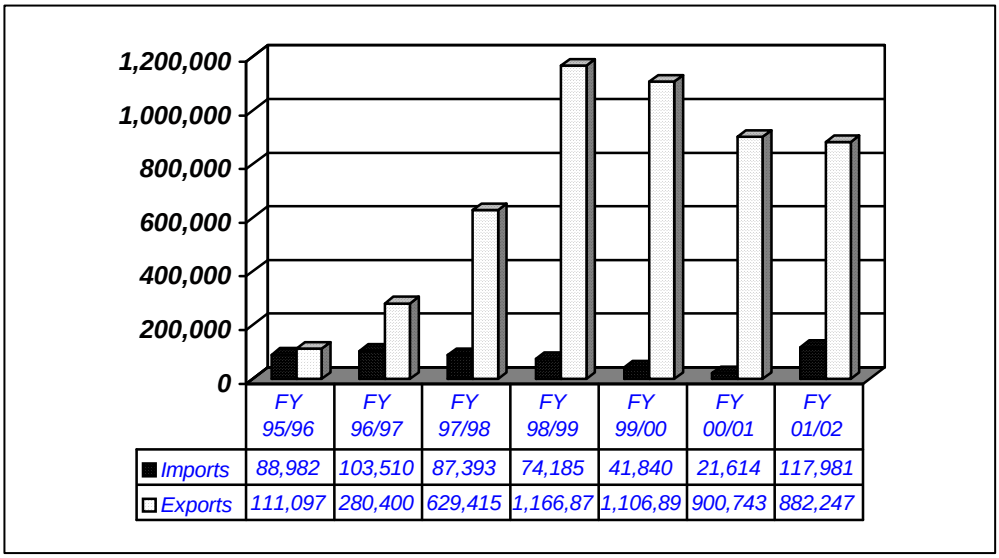
IMPORTS & EXPORTS

North Carolina continues to be a net exporter of municipal solid waste. Approximately 9 percent, or a total of 882,247 tons of the total waste disposed in FY 01-02 was exported. This is slightly less than the FY 00-01 total of 900,743 tons. North Carolina transfer station reports and voluntary reports from out-of-state facilities enable the state to track exports.

This past fiscal year saw movement back-and-forth across state lines at one location. A transfer station in South Carolina received 73,911 tons of Mecklenburg County's waste then sent the waste back into N.C. to the Chambers Development Landfill in Anson County. This waste is not included in either import or export totals.

Exports have remained consistent, but imports increased, due in part to the MSW landfill in Anson County. Over 122,000 tons were received at this landfill. Once the Mecklenburg County waste was subtracted, the net was 48,368 imported tons.

Appendix C reflects changes in N.C. exports and imports over the past six years. In FY 95-96, N.C. only exported waste to one S.C. landfill. Now, fifty-four N.C. counties export at least some to eleven out of state facilities. Import rates also changed. In FY 95-96 one landfill, in Forsyth County, received imported waste. Currently nine landfills in N.C. receive some out-of-state waste.



	FY 95/96	FY 96/97	FY 97/98	FY 98/99	FY 99/00	FY 00/01	FY 01/02
Imports	88,982	103,510	87,393	74,185	41,840	21,614	117,981
Exports	111,097	280,400	629,415	1,166,87	1,106,89	900,743	882,247

TEN YEAR SOLID WASTE MANAGEMENT PLANS

Legislation established in 1996 prescribed a minimum content for local government 10-year comprehensive solid waste management plans, commonly referred to as Plans. All 100 counties must develop Plans, either individually or regionally, in-house or through an outside entity. Public participation on the proposed Plan is required so Plans incorporate input from a variety of public and private sources.

Plan content is mandated in General Statute 130A-309.09A. Guidance documents were sent to county managers to prepare their 1997 and 2000 Plans. Division of Waste Management and Division of Pollution Prevention and Environmental Assistance staff also provided resources and technical assistance for Plan development.

Initial Plans were due in 1997 with updates mandated, at a minimum, every three years. However, significant changes to the local government's solid waste strategy, infrastructure, disposal capacity, contracts or facilities, warrant plan revision between cycles.

Counties were not required to embrace the state's 2001 goal of 40 percent, but were asked to make a "good faith" effort to define their own goal through a comprehensive solid waste management program. Counties review and can revise previous goals and establish new goals to provide for ten years of planning. *Using a weighted average relative to estimated 2010 population, if each county achieved their FY 09-10 goal, a 15 percent reduction in waste could be realized.* This forecast assumes no natural disasters or large changes in anticipated growth patterns. The FY 09-10 goals fall short of the state's 40 percent goal, but if achieved, it would reverse a landfilling trend and achieve substantial waste reduction.

PLAN COMPARISON

To correlate the Plans of 1997 to the Plans of 2000, a sampling was used. Thirty counties, based on FY 00-01 Annual Reports, were chosen. The selection includes the top 20, plus every eighth county, ranked by amount of waste produced. This sampling encompasses a variety of circumstances that influence a county's ability to plan and implement a comprehensive solid waste management program.

The primary finding of this comparison shows an apparent decrease in both commitment to solid waste priorities and the corresponding decrease in funding. As local economies and populations expand, county infrastructure needs also increase. However, county budgets are strained to maintain or enhance capital improvements. Local infrastructure needs have become a budget priority at the expense of local solid waste goals.

Of the 30 counties surveyed, Catawba, Greene, Jones and Nash achieved their waste reduction goal for FY 00-01. A majority of the 30 Plans decreased or maintained the 2005 goal. The non-attainment of original waste reduction goals may have prompted the 2005 goal decreases. The 2010 goal shows a slight increase.

Statewide, 18 counties achieved their FY 00-01 waste reduction goal, which ranged from 2 to 40 percent. As seen below in the FY 01-02 Reduction Achieved column, 12 counties continue to achieve their 1997 waste reduction goal and nine have accomplished their FY 05-06 waste reduction goal (revised in 2000). Eleven of the 18 counties either kept or increased their original FY 05-06 goal. Fifty-eight counties increased their FY 09-10 goal over the FY 05-06 goal. A majority of the counties will expand or implement new programs or educational initiatives to address the reduction goals.

Counties that Achieved their FY 00-01 Waste Reduction Goal

County	FY 00/01 Reduction Goal (1997 Plan)	FY 00/01 Reduction Achieved	FY 01/02 Reduction Achieved	FY 05/06 Goal (1997 Plan)	FY 05/06 Goal (2000 Plan)	FY 09/10 Goal (2000 Plan)
ALEXANDER	-10 %	-19 %	-18 %	-20 %	-20 %	-25 %
ALLEGHANY	-40 %	-47 %	-48 %	-45 %	-45 %	-45 %
BRUNSWICK	-10 %	-20 %	- 9 %	-15 %	- 6 %	-10 %
CATAWBA	-20 %	-27 %	-20 %	-25 %	-25 %	-30 %
CHATHAM	-30 %	-35 %	-34 %	-35 %	-35 %	-35 %
COLUMBUS	- 5 %	-15 %	-23 %	-20 %	-10 %	-10 %
DUPLIN	-35 %	-37 %	12 %	-40 %	- 2.5 %	- 5 %
GRANVILLE	- 4 %	- 9 %	3 %	- 4 %	-10 %	-20 %
GREENE	- 2 %	-16 %	-38 %	- 3 %	- 3 %	- 3 %
HALIFAX	-20 %	-24 %	-10 %	-30 %	-30 %	-40 %
HARNETT	-20 %	-23 %	-22 %	-25 %	- 9 %	-14 %
HOKE	- 5 %	-26 %	-20 %	-10 %	- 5 %	-10 %
JONES	-10 %	-66 %	-49 %	-10 %	-10 %	- 9 %
MARTIN	-20 %	-39 %	-38 %	-20 %	- 2.5 %	- 5 %
MONTGOMERY	- 7 %	-10 %	- 3 %	-10 %	-10 %	-10 %
NASH	- 5 %	-38 %	-31 %	-10 %	- 5 %	-10 %
RUTHERFORD	-35 %	-39 %	-34 %	-40 %	-40 %	-13 %
WARREN	-20 %	-24 %	-31 %	-40 %	-40 %	- 5 %

Several counties postponed start dates for planned initiatives. Programs described in 1997 and prefaced "beginning in 1997 this county will.." appear in the 2000 Plan "beginning in 2000 this county will.." It seems doubtful whether programs will be implemented or continually extended with subsequent Plans. However, finite local resources limit programs and services. This could result in counties shifting recycling and waste reduction responsibility from the public to the private sector.

INNOVATIVE COUNTY PROGRAMS

In Davidson County, students in kindergarten through fifth grade receive classroom presentations on solid waste, including a county video on solid waste. The education program also reaches the general population with displays at local festivals and promotion of national recycling events. The "Tons of Toys" recycling campaign donates funds, based on tons of recycled materials collected during a two-month period, to a local children's home.

Duplin County provides a low-cost educational program that targets special wastes. By partnering with national organizations and using grants from DPPEA, Duplin provides recycling programs for scrap metal, used motor oil and household hazardous waste. A summer day camp encourages youth to recognize the role they play in reducing hazardous waste and the consequences of improperly managing this waste.

In Yadkin County, dishwashers are used at most schools to reduce the use of disposable serving pieces. Schools have a recycling coordinator and recycle metal cans, cardboard and cooking oil from cafeterias.

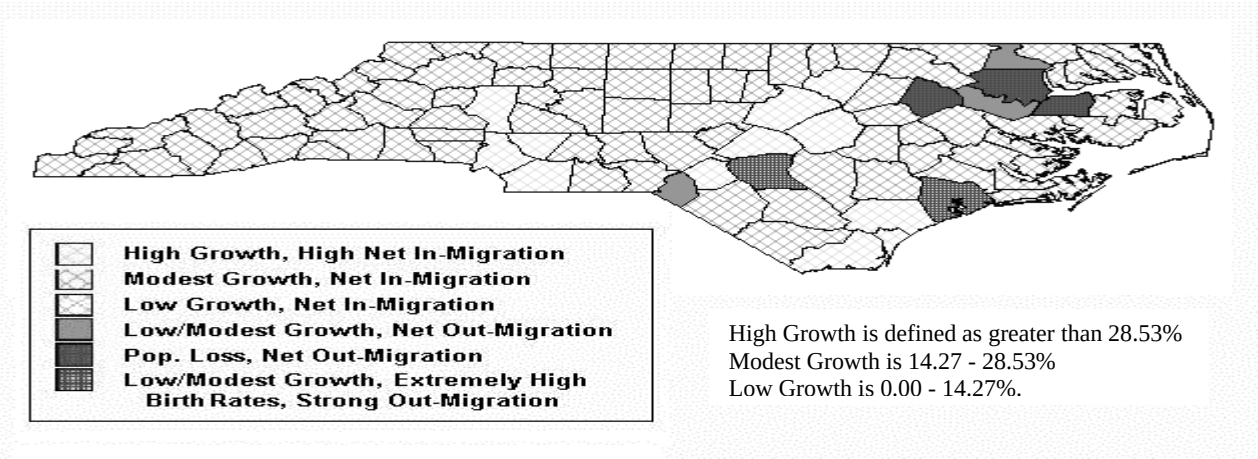
FACTORS LIMITING WASTE REDUCTION EFFORTS

Several factors, besides budget constraints, can impact a county's ability to meet self-imposed waste reduction goals. Some of these factors include increased commercial, industrial and institutional waste, growth in year-round and tourism populations, and the effect of natural disasters.

Commercial, industrial and institutional growth increases the local waste stream and tax base, but may not proportionately increase the population. The effect is that tons per capita figures increase but waste reduction achievements appear to go unnoticed. This is most evident in urban areas experiencing rapid economic and construction increases. Waste reduction is not keeping pace with disposal. This places a burden on local waste management infrastructure and will require additional investments to reverse the disposal trend.

The following map illustrates ten years' of population growth patterns in N.C. Three of the 18 counties that achieved their FY 00-01 goal had high growth, eight had moderate and seven experienced low growth.

Population Growth 1990 to 2000[1]



Since 1993, North Carolina has experienced six hurricanes. Natural disasters increase vegetative, organic, and construction and demolition waste. Natural disasters in 1996 and 1999 increased disposal by an average of 515,000 tons per year. Collection and disposal of this waste greatly impacts both local budgets and landfill capacity. County plans are required to indicate the management of debris resulting from storm and other disasters. For example, Union County's Plan discusses the various types of waste generated, their staging areas and the management of targeted waste. Both Onslow and Haywood counties identify staging sites, and Onslow has received state approval for its designated sites.

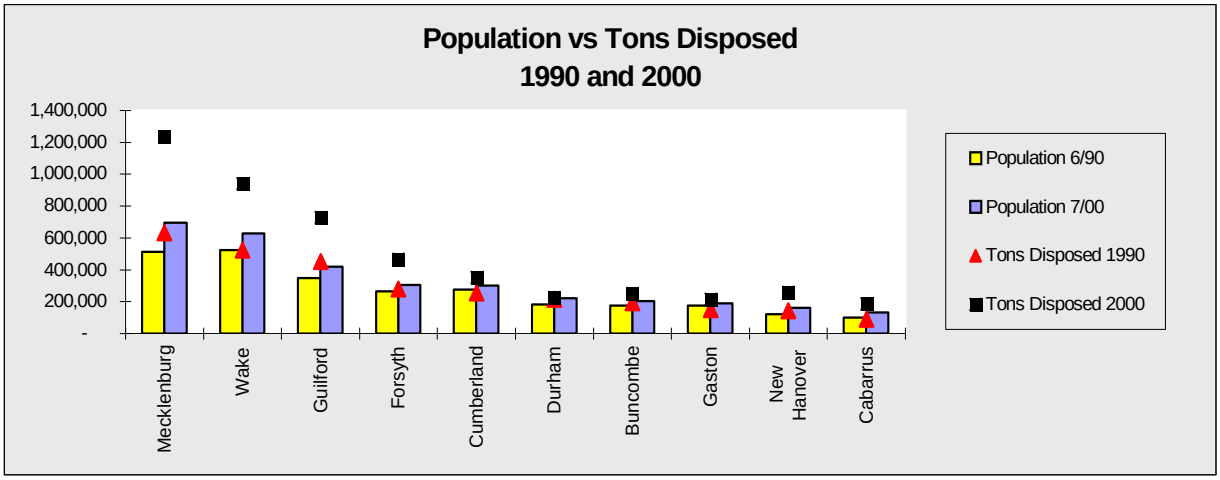
Another factor keeping counties from meeting their goals is the waste generated in the state's largest industry, travel and tourism. Over half of domestic travel expenditures in North Carolina take place in the foodservice and lodging industries. A sizeable amount of waste is produced by these sectors. Most county Plans have yet to effectively address this waste with aggressive programs aimed at tourists, foodservice or lodging businesses.

The following chart highlights the effect of population increases and waste generation on the state's 10 largest waste producing counties. The 10-year population increased almost 17 percent, coupled with a

[1] http://www.ospl.state.nc.us/demog/ca00estp.html

35 percent increase in tons disposed. Although the residential sector generates 30 percent of the waste stream, and the commercial, industrial and institutional sector contributes 70 percent; few Plans address this waste.

Mecklenburg and Wake counties have commercial waste reduction programs with specifically designated staff. Buncombe County's CII initiatives are provided through the Land-of-Sky Council of Government's Waste Reduction and Technology Transfer Team. The remaining seven counties target commercial waste through county staff, the N.C. Cooperative Extension, private waste haulers or county Keep America Beautiful initiatives. However, commercial, industrial and institutional waste is not the primary focus of these individuals or organizations.



KEY FINDINGS

These findings were gathered by analyzing local government Plans for 2000.

- As required by statute, few local governments have quantified the solid waste stream for the geographic area covered by their plan. Therefore, the quantity and diversity of materials available for diversion is speculative.
- Local governments may not be targeting waste streams and generators to achieve maximum waste reduction or diversion.
- Of the ten largest waste producing counties, in FY 00-01, only Durham made positive waste reduction progress.
- Of the 18 counties across the state that achieved their FY 00-01 waste reduction goal; three (Alexander, Catawba and Jones) have a variable rate financing system for collection/disposal costs.
- Construction, demolition and commercial waste comprise over 70 percent of the waste stream in North Carolina's largest waste producing counties.
- Local governments typically relinquish waste reduction initiatives for commercial, industrial and institutional sectors to private enterprise.
- Few programs address the solid waste hierarchy of waste reduction and recycling being preferred over landfilling, since low tip fees encourage landfilling.
- Lack of local funding has hampered new or expanded solid waste programs.
- Litter officer positions, historically located in the sheriff's department, are becoming full-time solid waste staff positions.
- Loss of large industry and its resulting waste falsely shows positive waste reduction progress.
- Material bans and the ability to recycle a variety of materials produces a direct, positive impact on waste reduction.
- Swap shops, paint swaps and commercial waste assessments provide low-cost, programs that are growing in popularity.
- Local governments are increasing or maintaining educational initiatives to achieve goals rather than implementing new programs that target specific waste streams.

The fact that many counties did not reach their goal does not suggest efforts are futile. There are some encouraging trends. The initial effort to create a solid waste management infrastructure gave North Carolinian's more options for recycling and collection services. Citizens saw a decrease in the number of unstaffed collection facilities and an increase in materials available for recycling. There is greater private sector involvement. The closing of unlined landfills that were potential threats to groundwater quality also benefited the environment. State agencies also began encouraging new or maintaining local and state waste reduction programs. Additionally, new markets have appeared to manage both residential and commercial recyclables.

COMMON FACTORS

Several factors helped counties make progress toward their waste reduction goals.

- Aggressive waste reduction efforts that target multiple waste generating sectors (schools, businesses, hospitals, governments, restaurants).
- Implementing specific material bans.
- Collecting "non-traditional" recyclables (textiles, mixed office paper, bi-metal food containers, etc.).
- Availability of material recovery facilities.
- Household hazardous waste collection programs.
- Swap shops.
- Continuous multi-medium and multi-targeting educational initiatives.
- Recycling available at community events and sporting activities.
- Convenient recycling (curbside, MRF-based or co-mingled).
- Staff hired for specific tasks (commercial recycling coordinator, litter enforcement officer or education specialist).
- Variable rate (i.e. Pay as You Throw) financing programs.
- Compost bin distribution programs.
- Paint exchange programs.
- Written and implemented buy-recycled policies.
- Enviro-shopping programs.
- Yard debris collection and processing programs with mulch available to citizens/businesses.

Counties that struggled with their waste reduction progress also had several common factors.

- Rapid waste stream growth.
- Non-resident waste from tourism or special events not targeted.
- Resource recovery facility, major waste producer or industrial closures.
- Increased cost to collect, process or transport recyclables.
- Little financial support for the solid waste infrastructure.
- Low disposal fees encourage landfilling over diversion activities.
- Unstable recycling markets.
- Solid waste programs and/or staff positions decreased or eliminated.
- Lack of specifically designated recycling coordinator or enforcement officer.
- Inability to maintain a steady revenue stream due to flow control issues.
- Limited, sporadic or ineffective educational initiatives.

PLAN ELEMENTS

The 12 elements required in any Plan include: reduction, collection, recycling and reuse, composting and mulching, incineration, transfer outside the geographic area, disposal, education, special waste, illegal disposal or litter, purchasing recycled products and disaster response. The Plans in 2000 critiqued actions based on the 1997 Plan and provided the opportunity for new or revised future actions. Two of the 12 elements were sampled to determine a level of local government effort and to qualify proven strategies. In 2000, targeted elements were (1) education, and (2) litter management or illegal disposal.

The assessment of the education element demonstrates that effective programs reinforce and remind audiences in several mediums. In addition to traditional residential audiences, school-age children, businesses (especially major waste producers), industries, local colleges and specific institutions, such as

school systems and hospitals, are targeted. These waste generators receive both generic information and guidance specific to their waste. Successful education programs provide information through handouts, radio and television, newspaper articles and ads, presentations, workshops, videos, telephone hotlines, Web sites and displays at local community events. Rowan County has a unique method of educating the community; they provide solid waste information through movie theatre advertisements.

Effective illegal disposal or litter programs begin with a local solid waste ordinance that addresses illegal disposal and is supported with on-going education. A full-time enforcement officer, responsible to the solid waste department, has a direct, positive impact on preventing or deterring illegal disposal. However, some counties continue to refer illegal disposal concerns directly to state officials and have little provisions for local monitoring. These programs do little to educate or prevent illegal disposal and appear to be little more than a "band-aid".

Several Plans describe innovative programs to deter illegal disposal. Durham County established an environmental court to raise the prominence of environmental crimes. In Wilson County car dealers distributed cup holders and brochures to people purchasing pick-up trucks. The brochures explain problems that uncovered truck beds create.

GOVERNMENT WASTE REDUCTION ACTIVITIES

Local government Annual Reports provide data on source reduction, reuse, recycling and composting activities statewide, as well as other aspects of solid waste management. Report data is used to develop a picture of waste reduction efforts in North Carolina. Data is also collected on program effectiveness and program implementation trends.

SOURCE REDUCTION & REUSE PROGRAMS

The number of local governments with source reduction and/or reuse programs decreased seven percent during FY 01-02. The decrease from 117 governments to 109 governments can likely be attributed to very tight local government budgets. Many source reduction and reuse programs are low cost and some require only promotional materials, however, these items tend to be cut from budgets early during difficult fiscal conditions. The only significant increases occurred in backyard composting and swap shop programs. DPPEA traditionally funds several of these programs each year through Solid Waste Reduction Assistance Grants. These grants are the most likely reason for the increase.

The number of swap shop programs in North Carolina has grown consistently over the past five years. Currently, 34 local governments have 73 swap shop programs. These swap shops account for an estimated 1,450 tons of cost effective reuse each year.

Programs Operated by Local Governments

Program Type	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02
SOURCE REDUCTION PROGRAMS					
Backyard Composting	81	53	59	64	67
Grass Cycling	43	41	36	35	29
Xeriscaping	13	12	11	8	8
Junk Mail Reduction	55	57	64	64	61
Enviroshopping	35	35	32	31	27
Promotion of Non-toxics	35	30	31	33	27
Other	1	5	6	3	4
REUSE PROGRAMS					
Swap Shops	17	22	23	28	34
Paint Exchange	25	27	23	19	19
Waste Exchange	14	8	8	4	3
Pallet Exchange	N/A	7	7	9	6
Other	6	15	10	8	9
GOVERNMENTS WITH PROGRAMS	**116**	**123**	**110**	**117**	**109**

LOCAL GOVERNMENT RECOVERY PROGRAMS

The overall recovery of materials declined by approximately 37,000 tons. It should be noted that almost the entire decline could be attributed to a decrease in organic collections. The decline in organics (e.g., yard waste) was somewhat expected due to the extremely dry conditions in FY 01-02. Dry conditions normally lead to a decrease in vegetative growth and a subsequent decrease in organic wastes.

Despite the decrease in overall recovery, almost every other recycling category increased. Paper recovery continued to grow at a healthy pace, increasing by almost two percent. Paper recovery has shown strong growth for the past five years. Glass and plastic recovery both increased substantially last year. Totals surpassed the previous peak recoveries that occurred in FY 95-96. The increase occurred despite weaker than normal plastic and glass markets. Metals recovery also experienced significant growth. There are two likely reasons for the marked increase. White goods markets rebounded during the year, which allowed many large stockpiles to be processed. Also, the accuracy of reported white goods tonnages continues to increase.

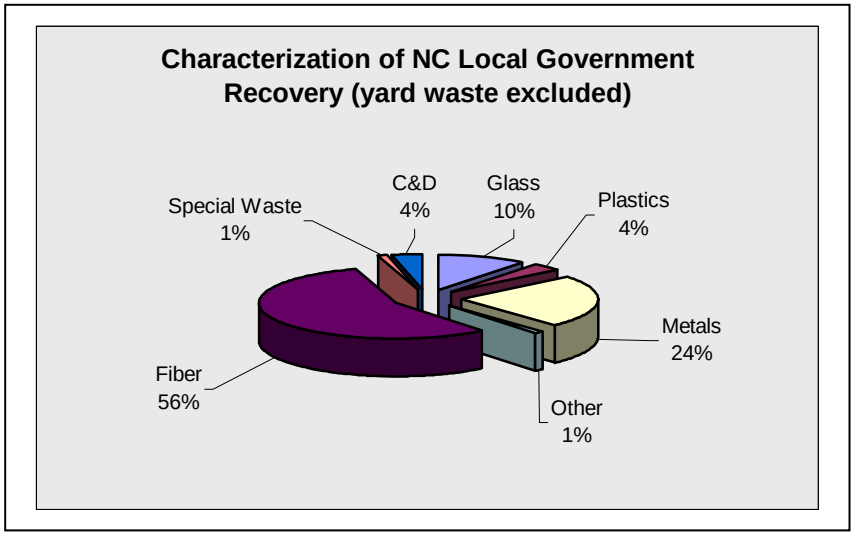
With the exception of organics, the strong growth in other "traditional" categories shines positively on local government recycling efforts. If organic waste recovery is not factored in, local government recycling grew by a very healthy 7.7 percent. This compares to a population growth of 1.7 percent.

Local Government Recovery (Tons) and Performance Measures

Material	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02
Total Paper	216,121	233,339	241,859	263,365	267,840
Total Glass	43,449	41,623	41,826	46,936	49,891
Total Plastics	14,399	14,835	14,474	15,062	17,269
Total Metal*	81,262	77,564	86,480	92,634	114,786
Total Organics**	504,554	525,033	638,757	540,582	468,901
Special Wastes***	3,527	3,817	4,907	4,947	5,426
Construction and Demolition Debris	N/A	N/A	59,598	15,406	17,648
Other	35,977	63,794	5,329	6,120	5,896
Totals	**899,290**	**960,005**	**1,093,032**	**985,052**	**947,657**
Per Capita Recovery (lbs.)	**242.03**	**254.40**	**285.61**	**243.66**	**231.47**
Recovery Ratio (Recycling: Disposal)	**0.11**	**0.10**	**0.11**	**0.10**	**0.10**

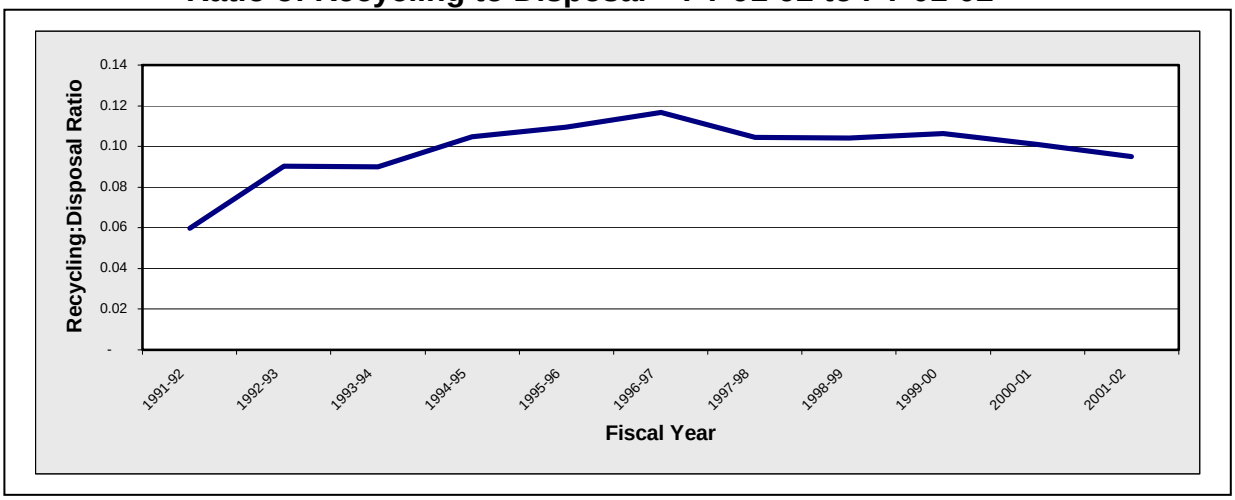
* Includes white goods, aluminum cans, steel cans and other metals.
** Includes yard waste, pallets and wood waste.
*** Includes electronics, used oil, oil filters, antifreeze and batteries.

The following figure provides a breakdown of materials recovered by local governments during FY 01-02, excluding yard waste. Fiber (paper products) constitutes 56 percent of material recovered by local governments. Fiber is also the bellwether commodity of local government recycling programs. Programs with consistent growth in fiber recovery show potential for continued strong growth. Metals comprise about 24 percent of the mix. The metals category includes white goods (appliances), which account for more than 65 percent of local government metal recovery. The third largest material recovered is glass, followed by plastics, C&D, special and other wastes.



The state experienced a nominal increase in waste disposed during FY 01-02. This slight increase, in conjunction with a very small overall decrease in recovery, resulted in a slight decrease to the ratio of recycling to disposal. This ratio does not represent the recycling rate, but rather is used to look at changes in disposal as they relate to changes in recycling. An increase in the ratio indicates that recycling grew at a greater pace; a decrease indicates disposal grew at a higher pace. The changes to recovery and disposal were collectively small enough to cause the ratio to decrease by 0.006.

Ratio of Recycling to Disposal – FY 91-92 to FY 01-02



As seen in the table below, almost 50 percent of the waste disposed and recycling collected came from 10 of the state's 100 counties. These 10 counties collectively account for less than 41 percent of the state's population. The difference between population and the level of waste generated highlights the positive correlation between waste generation and economic activity. Only Buncombe, Guilford and Durham counties provide a greater contribution to recycling than to waste disposal.

Disposal vs. Recycling in 10 Largest Waste Producing Counties

County	Disposal	Recycling	Contribution to Disposal	Contribution to Recycling*
Mecklenburg	1,302,070	56,620	13.2%	11.6%
Wake	880,136	38,260	8.9%	7.8%
Guilford	758,566	47,288	7.7%	9.7%
Forsyth	447,508	15,617	4.5%	3.2%
Cumberland	403,473	4,594	4.1%	0.9%
Durham	260,680	18,731	2.6%	3.8%
Buncombe	246,141	34,130	2.5%	7.0%
New Hanover	241,951	7,123	2.5%	1.5%
Gaston	214,185	5,093	2.2%	1.0%
Cabarrus	203,875	6,837	2.1%	1.4%
Total	**4,958,585**	**234,295**	**49.7%**	**47.8%**

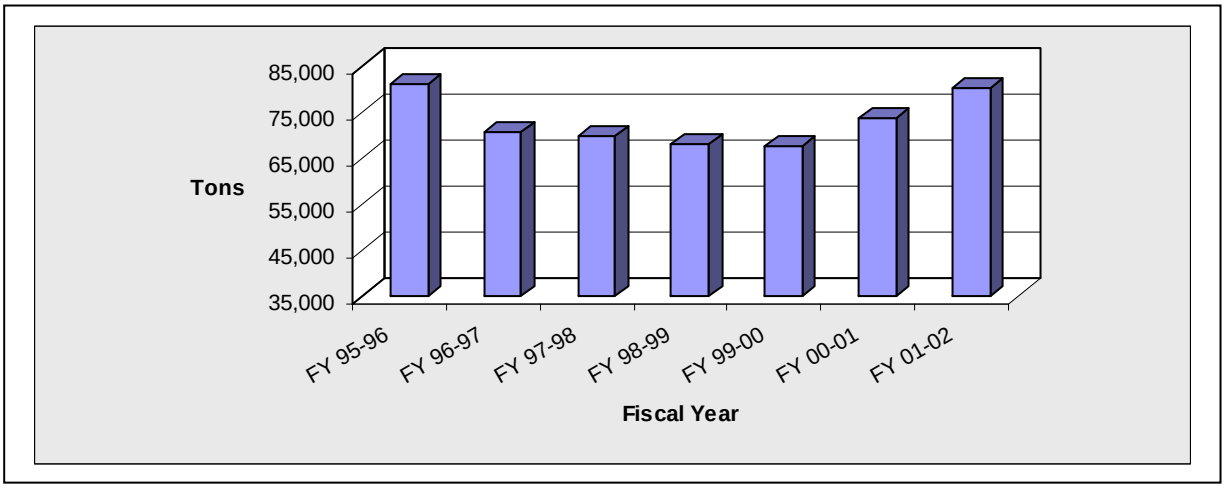
*Includes recovery from county and municipal sources. Yard waste and special waste recycling are excluded.

RECOVERY OF TRADITIONAL MATERIALS

Plastic, glass and metal container recovery grew for a second straight year, with a nine percent increase. This percentage combined with an almost two percent increase in fiber recovery, represents a positive trend for local government recycling programs. These increases occurred despite rumors throughout the state of program cuts and possible decreases in recycling services due to severe budget constraints.

Increased media attention on potential recycling program cutbacks may have helped increase recovery by bringing much needed attention to under-performing programs. It is likely, however, that other educational efforts, such as the "Recycle Guys" campaign, played a significant role in increasing local government recovery of traditional recyclables.

Local Government Container Recovery (Tons) FY 95-96 - FY 01-02



Despite positive trends in the recovery of traditional materials, significant concerns exist that dwindling participation rates have seriously hurt local government recovery efforts. The average participation rate for curbside recycling programs statewide is 57.85 percent. Increasing this rate to 70 or 75 percent would greatly improve both recovery and the cost-effectiveness of local programs.

Many local governments have invested heavily in recycling, but are failing to protect their investment by neglecting public education about recycling. Increasing participation through education can cost very little, but the potential to reduce current disposal costs and provide long-term financial and environmental savings, make it a cost-effective investment. Of the 392 local governments that provided recycling services during FY 01-02, 54 percent provided public education on recycling. Unless local governments seek to increase participation through public awareness/education campaigns or other methods, many more programs will likely be in jeopardy of being removed.

LOCAL GOVERNMENT RECYCLING PROGRAM MANAGEMENT

Contributions to recycling by curbside, drop-off, mixed waste and other programs changed very little. Recovery from other programs held constant at 17 percent. Recovery from mixed waste processing operations increased only slightly from less than one-half percent to just under one percent. Recovery from curbside programs increased one percent as a portion of the total recovery. The total percentage recovered from drop-off programs decreased one percent, which corresponded with the increase in curbside.

Total Recovery by Program Type

Program Type	Total Tons		Total Recovery	
	FY 00-01	FY 01-02	FY 00-01	FY 01-02
Curbside	189,346	204,173	41 %	42 %
Drop-off	189,548	198,516	41 %	40 %
Mixed Waste Processing	297	3,544	0 %	1 %
Other Programs	79,112	83,934	17 %	17 %

Minimal change occurred in local government recycling program management. An equal number of communities added and dropped recycling programs, resulting in little change to the populations with access to recycling. Counties rely on publicly operated drop-off collection systems while municipalities rely on curbside collection programs. A majority (79 percent) of municipal curbside programs are contracted operations. Of 245 municipal curbside recycling programs in N.C., 54 are publicly operated.

SPECIAL WASTE MANAGEMENT

The table below shows how N.C. local governments handle special wastes. Communities increased both the amount of used oil and household hazardous waste collected from the public. The number of permanent household hazardous waste sites increased from 12 to 16, while tonnages rose 5 percent. The total number of HHW programs increased as well, but one collected only paint and three programs focused solely on collection of pesticides. Oil gallons collected jumped to its highest level, although the number of programs remained even. For other materials, local government performance remained steady, with a small but notable uptick in oil filter collection.

Local Government Special Waste Management - FY 97-98 - FY 01-02

	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02
Used Motor Oil					
Number of programs	115	127	126	125	127
Gallons collected	646,646	736,436	873,548	839,234	922,501
Oil Filters					
Number of programs	8	11	14	18	20
Tons collected	~6	6.61	10.34	16.15	17.79
Antifreeze					
Number of programs	46	46	49	54	56
Gallons collected	8,770	9,568	15,977	33,304	27,668
Lead Acid Batteries					
Number of programs	84	79	90	90	86
Number collected	61,118	58,237	74,737	82,043	80,912
HHW					
Number of programs	20	17	24	24	28
Number of permanent sites	9	10	13	12	16
HHW tons collected	657.29	1,017.78	931.82	1315.3	1483.97
Total cost reported	$1,301,638 ($1,875/ton)	$1,672,271 ($1,643/ton)	$1,644,818 ($1,765/ton)	$1,792,125 ($1363/ton)	$2,180,355 ($1,469/ton)

Conversions: Oil, one gal = 7.4 lbs.; Antifreeze, one gal = 8.42 lbs.; Lead Acid Battery, one battery = 35.9 lbs.

Despite the progress in HHW and used oil, many residents in N.C. remain unserved or underserved. Eight counties offer no oil recycling programs and twenty offer only one collection site. Household hazardous waste programs are even less prevalent. Over 70 percent of N.C. counties have no HHW disposal alternative.

YARD WASTE MANAGEMENT

Yard waste has been banned from MSW landfill disposal since 1993. The amount of yard waste diverted has remained consistent, with occasional spikes resulting from natural disasters. In FY 01-02, yard waste diverted either through delivery to end-users (farmers, gardeners) or through locally operated mulch and compost sites declined to its lowest level in seven years. The table below shows a 10 percent overall drop in total yard waste managed. This reduction may be due to the effects of the drought. The only category of yard waste destinations that rose was land clearing inert debris landfills, which indicate a greater reliance on this disposal option by local governments.

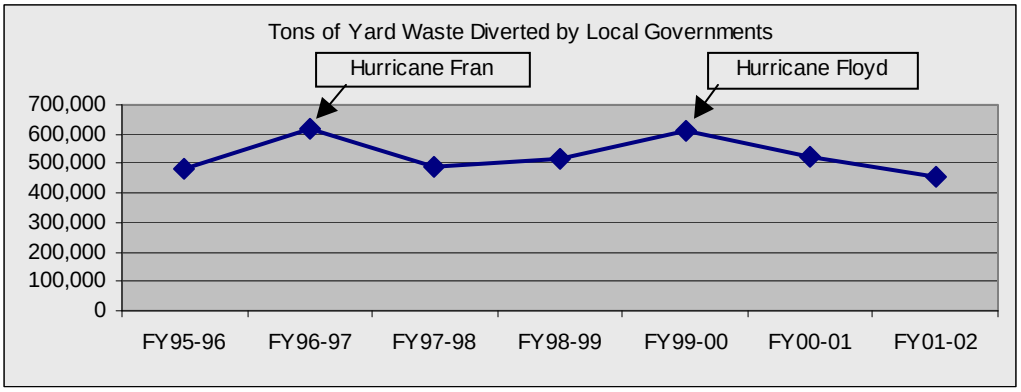
Local Government Yard Waste Management for FY 01-02

Destination of Materials	Number of Local Govts using destination	Tons Managed FY 01-02	Change from FY 00-01
End Users (direct delivery)	79	31,151	- 42%
Local mulch/compost facility	184	421,340	- 10%
TOTAL DISPOSAL DIVERSION *		**452,491**	**- 13%**
Other Public Facility	77	87,112	- 6%
Private Facility	44	49,691	- 25%
LCID Landfill	69	153,320	+ 8%
YARD WASTE TOTALS**		**655,502**	**- 10%**

* Tonnages under “Total Disposal Diversion” not included because of data redundancy/uncertainty.

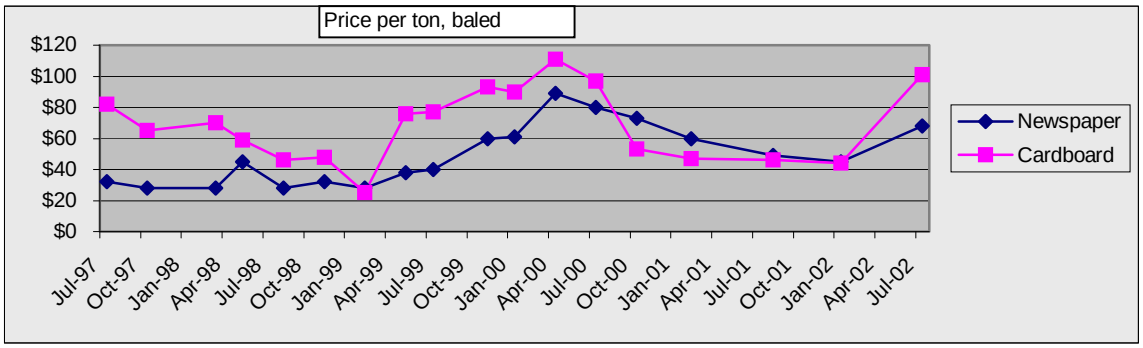
** Yard Waste Totals exclude tons for “other public facilities” (assumed captured under other categories).

Yard Waste Diverted From Disposal by Local Governments FY 95-96 – FY 01-02



RECYCLING MARKETS, PRICES & RELATED DEVELOPMENTS

After enduring low prices across the board in FY 00-01, recyclable businesses enjoyed higher prices for some key materials in FY 01-02. This finding underscores the cyclical nature of commodity price swings. Paper saw a substantial rise in market prices in early 2002. The rise was preceded by spikes in corrugated cardboard and steady increases for newsprint. Recycled Paper News, a leading paper industry journal, indicated the average national scrap paper price in June 2002 was $133.75. This is the highest since February 2001. Corrugated prices in particular were affected by strong export demand, although foreign buyers reduced year-end purchases due to a sellers market. The figure below shows the volatility of market prices since July 1997 for two of the major paper grades.



The table below shows the material prices received by three major processing centers in eastern, central, and western North Carolina through FY 01-02. On the downside, glass continued to lose value, with green glass experiencing a cost market for the first recorded time. PETE plastic also struggled through the year, while aluminum stayed steady. After a small mid-year dip, the rise in paper prices is reflected at the end of the year; steel prices finally emerged from single digits.

Recycling Market Prices For Major N.C. Processors FY 01-02

Materials	Summer 2001	Winter 2001	Summer 2002
Aluminum cans, lbs., loose	$.44	$.44	$.45
Steel cans, gross tons, baled	$5.00	$4.00	$21.00
PETE, lbs., baled	$.09	$.55	$.06
HDPE, lbs., baled	$.09	$.07	$.12
Newsprint, ton, baled	$49.00	$45.00	$68.00
Corrugated, ton, baled	$46.00	$44.00	$101.00
Office paper, ton, baled	$95.00	$83.00	$123.00
Mixed paper, ton, baled	$20.00	$20.00	$48.00
Clear glass, ton	$30.00	$24.00	$23.00
Brown glass, ton	$22.00	$17.50	$15.00
Green glass, ton	$2.00	-$5.50	-$4.00

Some local governments directly market the materials they collect. In response to the local Solid Waste Management Annual Report questionnaire, over half indicated some difficulty in accessing or maintaining markets in FY 01-02. For those who did have problems, eighteen specifically mentioned glass (especially green glass), and another thirteen cited plastics as the hardest to market. In general, the communities experiencing marketing problems were small, rural counties that are relatively distant from major processing facilities or with relatively small supplies to bring to the market. It is likely that glass, with its high weight-to-value ratio, will continue to pose a challenge to recyclers, possibly leading some to drop the material from collection programs. Plastics will remain difficult to market because of its lightweight nature and the cost of baling prior to shipment. Greater overall access to processing facilities, and in the case of glass, greater use of efficient bulk transport, may help mitigate market problems for rural communities. A significant achievement in FY 01-02 was the opening of a materials recovery facility in Onslow County. This facility receives materials from counties in eastern N.C. and can provide a solid foundation for collection programs in the south coastal region.

A new addition to some local collection programs – obsolete electronics – is a consistent cost market for local governments. Counties and cities with electronics collection programs were all charged by their vendors. In general, the price was $5 to $6 per computer monitor collected but televisions cost more. Local governments did not appear to have difficulty finding a processor. A few major facilities operate in state and larger facilities serve N.C. from out of state.

For other commodities, there was some small growth in processing capacity for pallet, gypsum, C&D and organics at a few key facilities in the state. An additional material recovery facility is expected to open in FY 02-03, while another MRF will complete capacity upgrades. A large organics facility will open in 2003 and some C&D initiatives in the Triangle area may result in a greater diversion of those materials.

LOCAL GOVERNMENT ASSISTANCE

SOLID WASTE MANAGEMENT TRUST FUND

The Trust Fund, administered by DPPEA, was created by the Solid Waste Management Act of 1989. A tax on virgin newsprint and advanced disposal fees on white goods (appliances) and tires fund it. Additional revenues can come from appropriations and contributions. The Trust Fund supports 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/demonstration projects and recycling market development (GS 130A- 309.12).

As noted in the following table, the Solid Waste Management Trust Fund received $1,001,417 in revenues in FY 01-02. When added to the July 1, 2001 balance of $1,449,557 a total of $2,450,974 was managed in the Trust Fund for FY 01-02. Expenditures were $756,862, leaving a balance on June 30, 2002 of $1,694,112 with $664,696 encumbered for incomplete grant contracts and funding not fully disbursed (grant contracts are paid as reimbursements). The unencumbered balance was $1,029,416.

The relatively large unencumbered balance at the end of FY 01-02 reflects the cancellation of normal grant cycles, a direct result of state budget problems. DPPEA did not initiate new grant contracts in the event the Trust Fund balance would be needed to cover budgetary shortfalls. However, the Trust Fund was not used for that purpose and the result was a large end-of-year balance. In normal budgetary circumstances, grant cycles reduce the balance for the fiscal year as much as $600,000. DPPEA is currently conducting grant cycles to fund city and county recycling efforts in FY 02-03.

Trust Fund Expenditures and Revenues

	Total FY 01-02
Beginning Balance	$ 1,449,557
+ Revenue	1,001,417
- Expenditures	756,862
Ending Balance	1,694,112
Encumbrances	664,696
"Uncommitted" Funds on 6/30/02	**$ 1,029,416**

Trust Fund Revenue Sources

	Total FY 01-02
Tire Tax	$ 536,119
White Goods ADF	347,246
Newsprint Tax	52
Appropriations	0
Contributions and Misc.	118,000
Total Revenues	**$ 1,001,417**

TRUST FUND REVENUE SOURCES

Trust Fund revenues came from three of the following five possible revenue sources:

- **2% Tire Tax** – Trust Fund revenues from the tax on the sale of new tires accounted for $536,119 or just under 56 percent of total revenues during FY 01-02, down slightly from $537,599 in FY 00-01.
- **White Goods Tax** – Proceeds from the ADF on white goods accounted for $347,246 or under 35 percent of total revenues for FY 01-02. White goods proceeds were 1.5 percent higher in FY 01-02 than in FY 00-01.
- **Virgin Newsprint Tax** – N.C. 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 who are unable to purchase recycled content newsprint due to availability or pricing constraints, or who are actively involved in the recovery of newspaper for recycling. During FY 01-02, $52 was received from the virgin newsprint tax. In nine years, the annual revenue from the newsprint tax has never been higher than $3,000.
- **General Appropriations** – When the Trust Fund was established in 1989, a one-time appropriation of $300,000 provided an initial fund balance. There have been no further appropriations.
- **Contributions to the Trust Fund and Miscellaneous Revenues –** DPPEA continued a recycling promotion campaign in FY 01-02 that involved a cost-sharing partnership. Local governments contributed $55,500 and private sources provided $5,000. The N.C. DOT provided $57,500 to cover litter prevention and produce handout materials.

LOCAL GOVERNMENT ALLOCATION

The Trust Fund received 88 percent of its revenues in FY 01-02 from two sources: the statewide fees on the purchase of new tires and white goods (appliances). The Trust Fund only receives a small portion of the proceeds from these fees. The total distribution arrangement of each of these fees is below.

- **Scrap Tire Tax** - During reporting period July 1, 2001-June 30, 2002, a 2 percent tax was levied on the purchase of new tires in North Carolina. The tire tax allocation is as follows:
  - 68% of revenues distributed to counties (per capita basis) for management of discarded tires.
  - 27% of revenues credited to Scrap Tire Disposal Account (administered by Solid Waste Section) for local government grants and nuisance tire site cleanup.
  - 5% of revenues credited to the Solid Waste Management Trust Fund (administered by DPPEA)
- **White Goods Tax** - During reporting period July 1, 2001-June 30, 2002 a $3 fee was levied on the purchase on all appliances. The white goods tax allocation is as follows:
  - 72% of revenues distributed to the counties (per capita basis) to pay for management of discarded white goods.
  - 20% of revenues credited to the White Goods Management Account (administered by Solid Waste Section) for grants to local governments for managing discarded white goods.
  - 8% of revenues credited to the Solid Waste Management Trust Fund (administered by DPPEA)

TRUST FUND EXPENDITURES

State budget constraints in FY 01-02 prevented DPPEA from conducting grant cycles, which is normally the major purpose and use of the Trust Fund. Grant funds awarded in FY 00-01, and described in last year's Trust Fund report, were encumbered in FY 01-02. The expenditures that did occur in FY 01-02 were in two categories: 1) continuation of the Recycle Guys partnership recycling promotional campaign, and 2) delivery of technical assistance to North Carolina communities, recycling businesses and waste generators. These are two of the explicit purposes noted for the Trust Fund in G.S. 130A- 309.12.

RECYCLE GUYS CAMPAIGN

In FY 00-01, N.C. adopted the "Recycle Guys" educational campaign, originally developed by S.C. Cartoon characters that represent different recyclable materials appear in television and radio advertisements promoting recycling, source reduction, composting and buying recycled products. DPPEA pursued this campaign to help reverse the decline in recycling participation across N.C.

Initially, DPPEA partnered with local governments and private donors to run three Recycle Guys ads on cable television. Cable was chosen because of the ability to target certain demographic profiles. The profiles were developed by DPPEA and local government partners.

In December 2001, after seeing evidence that the campaign was successfully reaching its audience, DPPEA and its partners initiated a second, year-long ad campaign. This campaign used eight Recycle Guy ads, each with a different waste reduction message. Three Spanish-language ads were added. DPPEA also worked with N.C. DOT to create a litter prevention ad using the characters. The goal was to use the popularity of the Recycle Guys to broaden anti-litter efforts.

In addition to employing a broader set of ads, the FY 01-02 campaign reached a wider audience. The initial broadcast targeted the three largest population areas of the state and reached 1.2 million households. The second contract reached rural counties surrounding the metropolitan areas. New Hanover and Onslow counties were included, which brought the number of household reached to almost 2 million. DPPEA distributed tapes of the ads to communities outside the Time Warner Cable system to be used as public service announcements or as community cable channel broadcasts.

DPPEA continues to receive feedback that the campaign is successfully increasing the awareness of recycling and waste reduction. DPPEA and partners have seen evidence that the Recycle Guys are well recognized and that the message is understood. Use of the Recycle Guys Web site quadrupled over FY 01-02. Local government partners continue to integrate the Recycle Guys into their educational efforts and are enthusiastic supporters of the campaign. Although there is some indication that recycling tonnages are increasing in the broadcast areas, it is believed that the campaign will have to be actively pursued for a number of years before large-scale participation increases are realized. Still, anecdotal evidence in key communities such as Charlotte and Mecklenburg County show some early positive effects. DPPEA will survey targeted audiences in FY 02-03 to measure recognition of the campaign.

Funding Partners For FY 01-02 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
Chatham County	$1,000
Orange County	$1,000
Johnston County	$5,000
City of Durham	$5,000
Durham County	$5,000
Onslow County	$1,000
National Association for PET Container Resources (NAPCOR)	$5,000
North Carolina Department of Transportation	$57,500
TOTAL	**$118,000**

TECHNICAL ASSISTANCE

The General Statutes direct DPPEA to use the Trust Fund to promote waste reduction and recycling. Specifically, DPPEA is to provide technical assistance to local governments and to build recycling markets. The following section lists a number of activities that DPPEA pursued in FY 01-02 to accomplish these requirements.

- **Waste Reduction Partners Program-**Waste Reduction Partners is a highly successful program that uses retired engineers and business people to provide environmental technical assistance to companies and local governments in western N.C. In a continuation of a successful project initiated in FY 00-01, DPPEA provided $20,000 in FY 01-02 to support industrial solid waste assessments and recycling activities. With this funding, WRP helped western N.C. businesses divert 16,592 tons of solid waste from landfills. This total represents an estimated $1,293,000 in avoided disposal costs. WRP conducted waste reduction activities in 13 counties: Buncombe, Henderson, Transylvania, Burke, Haywood, Polk, Rutherford, Cleveland, Mecklenburg, McDowell, Madison, Caldwell and Wilkes.
- **Staff Support-**The Trust Fund supported three staff positions in DPPEA. These staff members provide technical assistance, public education and recycling market development requirements specified in the General Statutes. Salaries, benefits and some limited operational support were financed by $150,286 from the Trust Fund.

  Recycling Market Development Specialist-Established in May 1993, this position provides marketing assistance to local governments and others involved in recyclable materials collection. As a part of the Recycling Business Assistance Center in DPPEA, this person strengthens recycling capacity for secondary materials collected throughout the state. This specialist also manages the recycling markets directory, as required by statute.

Waste Management Analyst-In addition to working with local recycling coordinators, this position is responsible for developing educational materials and programs on solid waste issues for audiences ranging from school children to adult populations. In particular, this position implements the multi-media statewide "Recycle Guys" campaign designed to boost recycling participation rates. The analyst also provides commercial waste reduction assistance.
Waste Management Analyst-This position provides technical assistance to local governments on waste reduction programs, 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 an integral component of the state Solid Waste Management Annual Report.

- **Graduate Intern Program-**Through a contract with the Water Resources Research Institute of the University of North Carolina, DPPEA hires student interns for a full year. Student projects in FY 01-02 included: 1) quantification of the generation of electronic waste, 2) cost analysis of electronics collection programs, 3) development and expansion of organic waste diversion efforts, 4) establishment of re-refined oil on state term purchasing contracts, and 5) assistance with the development of recycling markets and improvement of local programs. The FY 01-02 interns have since secured professional positions with at least a partial focus on waste reduction. Expenditures for the FY 01-02 intern contract were $39,662.
- **Temporary Assistance-**N.C. statutes require solid waste management annual reports from all counties and municipalities. These reports provide data for the state Annual Solid Waste Management Report. Statutes also require a directory of recycling markets. DPPEA used $5,508 in FY 01-02 from the Trust Fund for temporary staff to manage the large set of data required for both of these tasks. Temporary staff also provided additional technical assistance to local governments.
- **Publications and Outreach Efforts-**In FY 01-02 DPPEA used $8,477 from the Trust Fund for a number of technical assistance and outreach activities. These activities included: printing and distribution of the *Recycling Works* newsletter and fact sheets, conducting workshops and sessions at conferences (Carolina Recycling Association and N.C. chapter of the Solid Waste Association of North America) and miscellaneous expenditures to provide technical assistance to local governments and Trust Fund grantees. Normally, DPPEA would use appropriated funds for these purposes, but were unable to do so given the state budget situation.

PLANNED EXPENDITURES

In FY 02-03, the state budget is again expected to restrict Solid Waste Management Trust Fund expenditures. However, DPPEA's highest priority for next fiscal year is to support local government recycling programs by continuing and increasing the Recycle Guys campaign. Grant cycles, particularly those focused on improving and expanding local recycling efforts, will resume. Continued support of the effective Waste Reduction Partners program and participation in national coalitions seeking to promote product stewardship are also planned. Product stewardship initiatives are also planned. These encourage manufacturers to actively implement and finance management systems for their end-of-life products, thereby reducing cost and tax burdens on state and local governments.

STATE AGENCY WASTE REDUCTION EFFORTS

State agencies are directed to use products containing recycled materials by state law and Executive Order No. 8, signed in 1993 (rewritten as No. 156 in 1999 in support of N.C. Project Green, the state environmental sustainability initiative). [2] 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 towards environmental sustainability by offering recycled and environmentally preferable products at affordable prices on state contract. State agencies, and others who can buy from state term contract such as local governments, have a wide degree of choice in the purchase of high quality, cost-effective recycled products on term contract. The list of products can be seen at http://www.doa.state.nc.us/PandC/recycled.htm.

This section summarizes the efforts of state agencies to purchase recycled products. It fulfills the reporting mandate of N.C. General Statute 143-58.2(f) for FY 01-02. It compiles required purchasing reports from 26 state government department and offices, 18 constituent institutions of the University of North Carolina system, 58 community colleges and 117 local public school administrative units. During FY 01-02, 76 percent of agency reports were received (167 out of 219). This total shows 17 fewer agencies participated than in the previous fiscal year. All reporting was conducted online, saving both paper and postage. Copies of past reports may be obtained online at www.p2pays.org/buyrecycled or by calling (919) 715-6500 or (800) 763-0136.

PURCHASES OF RECYCLED PROUCTS

Paper and Paper Products- Reported agency purchases of all office paper and paper products (recycled and non-recycled) in FY 01-02 totaled $25,781,557, a 30 percent drop in overall paper purchases from the prior fiscal year. This decrease is probably due to spending constraints resulting from the state budget crisis. It may also reflect some general waste reduction and the increased use of electronic communication.

Recycled paper purchases were down 39 percent from the previous fiscal year and totaled $17,939,762. Recycled paper constituted 70 percent of total paper purchases reported, down from 80 percent the year before. This proportion fails to meet the goal set forth by Executive Order 156 [3] that "State agencies shall attempt to meet the goal that, as of FY 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."

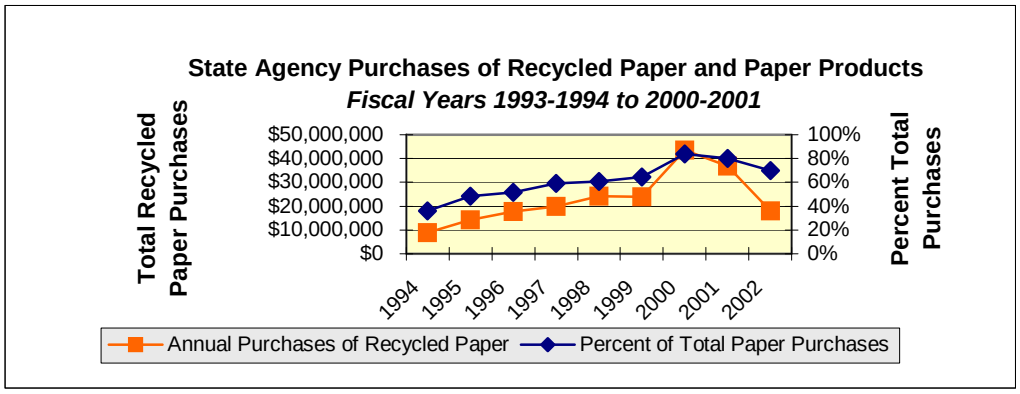
The overall percentage of recycled content purchasing was lowered considerably by large virgin paper purchases in the category of "miscellaneous paper products" (i.e. legal pads, file folders, labels, continuous feed forms). Almost two-thirds of the virgin miscellaneous paper purchases were in two agencies: Health and Human Services and Revenue. As a result, both agencies were among those with the lowest overall recycled content paper purchasing, at 27 percent and 24 percent, respectively.

Office paper and towel/tissue paper achieved a high percentage of recycled purchasing at 82 percent each. Twenty-one agencies reached the 100 percent goal this fiscal year for all paper purchases. Another 24 agencies achieved a recycled content paper purchasing rate of 95 percent or higher, and 43 percent of all agencies reporting bought recycled paper for 90 percent of their paper needs. A quarter of reporting agencies bought only recycled content office paper and over two-thirds bought only recycled content towel/tissue products.

[2] Full text of No. 156 is available online at: www.p2pays.org/ref/03/02221.pdf.
[4] G.S. 143-58.3 established a goal that at least 50% of all agency expenditures for paper and paper products are comprised of recycled product purchases. Executive Order No. 8 set a goal for agency expenditures of recycled paper and paper products of 65% in FY 97-98. Executive Order No. 156 reestablished the goal at 100% by 2001.

The FY 01-02 data does not include figures from 21 agencies that reported in FY 00-01 but not in FY 01-02. Based on FY 00-01 performance, these agencies would have added $1.3 million in recycled paper purchases in FY 01-02 and would have helped increase the recycled paper purchasing rate slightly.

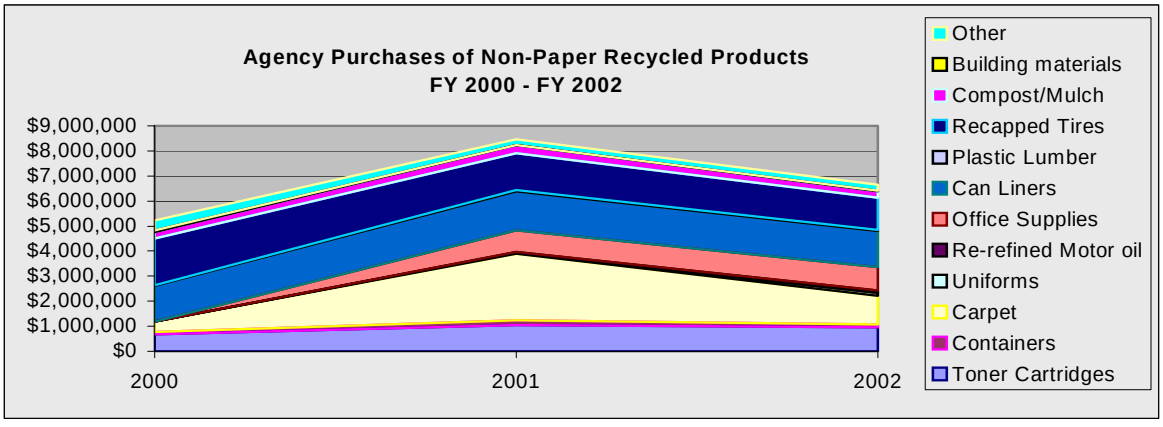
Agencies also report on their specification of recycled paper in contracted printing work. As with past years, about 60 percent of agencies consistently specify recycled content in contracted services. About 62 percent of the reported total $11,844,315 in contract printing was done on recycled paper. Reported spending on outside print orders was down 18 percent from the previous year.



The chart illustrates the trend in overall dollar amounts and percentages of recycled paper purchases over the past nine fiscal years. It demonstrates the substantial drop in paper purchases during FY 01-02, bringing it in line with paper purchasing levels not seen since 1996. The data indicates a need to enhance efforts to achieve the 100 percent goal across all agencies. A renewed emphasis and commitment from top management in directing agencies to meet the statutory and executive goals would help accomplish of the goal. A targeted outreach campaign for agencies with a high level of virgin paper purchasing is also warranted.

Administrative Support and Contract Services- Many agencies again reported a lack of support from top management for recycled product procurement. Less than two-thirds of responding agencies reported that their chief administrator had communicated the importance of buying recycled products. This level has held steady for three consecutive years. Less than half of the reporting agencies established a lead coordinator for buying recycled products. This key component to a successful recycled content procurement program should be examined as a way to increase participation.

Non-Paper Products- Agencies reported spending $6,636,199 for non-paper recycled products in FY 01-02, down 22 percent from the previous year's expenditures. As with paper, this reflects the budget shortfall. The array of recycled products purchased by agencies includes remanufactured laser toner cartridges, plastic can liners, recapped tires, plastic lumber, compost and mulch, re-refined motor oil, carpet and uniforms. Despite the overall drop in the purchasing of these products, some enjoyed an increase, such as recycled content office supplies (10%) and uniforms (230%). Purchases of compost and mulch, on the other hand, declined about 21 percent and recycled content carpet by 56 percent.



CONCLUSION

The purchase of recycled content products is a well-established practice in state government. This activity is supported by statutory and executive order requirements, as well as state term contracts that offer high quality, affordable recycled-content choices for state purchasers. Still, progress must be made to bring agencies into full compliance with the 100 percent recycled paper goal. The accomplishment, or near accomplishment of the goal by 43 percent of agencies, indicates that it is a feasible goal, given top management support and increased overall awareness of requirements and products.

A few key agencies could, with a few significant purchasing decisions, substantially increase the overall performance of state government in recycled paper purchasing. Converting the current $7.8 million in virgin paper purchases to recycled paper will allow state government to contribute substantially to the strength of recycling markets. As a major player in the collection of paper for recycling, state government stands to benefit directly from improved markets. The use of recycled products will also help N.C. achieve its environmental goals by reducing natural resource, energy and water usage, and preventing air and water pollution. In the case of a product like re-refined motor oil – which meets the exact specifications of virgin oil, is supported for use by engine manufacturers and is cheaper than virgin oil on state contract – agency purchases of the product should be automatic.

RECOMMENDATIONS

The following recommendations may help to increase recycled content purchasing in the future and help state government meet goals set forth both in Executive Order 156 and General Statutes.

- **Reissue and enforce Executive Order 156-** While Executive Order 156 continues to carry weight with most state agencies, a reissuance will provide a new focus and create additional support for recycled content purchasing. It will also strengthen DPPEA's ability to collect and manage data related to state agency purchases. Strong and active gubernatorial support can help the state successfully meet executive and legislatively mandated goals.
- **Increase administrative support and educational programs-** Disparity among agencies in the degree of support and routine communication received from top management may be the most significant barrier to increased agency participation in recycling and recycled product procurement. Administrative support is also crucial to the successful implementation of agency sustainability plans under N.C. Project Green. This program incorporates waste reduction, recycling and environmentally preferable procurement. For those agencies that have not yet prioritized waste reduction and buying recycled, it is recommended that they:
    - Implement and adhere to the goals of Executive Order 156, which states that all paper purchased have a minimum of 30% post-consumer content.
    - Issue and enforce internal policies, official memoranda and formal declarations that demonstrate administrative leadership and support for buying recycled and E.O. 156.
    - Develop and implement ongoing outreach and education programs for employees and visitors.
    - Join N.C. Project Green, pledging to achieve its goals as part of their overall commitment to environmental sustainability.
- **Increase Procurement of Non-Paper Recycled Products-** Outright expenditures for non-paper recycled products continue to lag behind those of paper purchases. Purchasing a diverse array of recycled content products not only strengthens recycling markets in N.C.; it also helps agencies fulfill their obligation to become more environmentally sustainable. To improve overall buy recycled efforts, state agencies should:
    - 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.

- **Make Purchasing Decisions Based On Full Environmental Impact Versus One-Time Cost-** To determine the full environmental impact of a product or service, it is important to look at its full life cycle analysis. By doing so, state agencies can begin to make purchasing decisions that will be of benefit in both the short and long term. Our recommendations are:
  - Begin looking at products in terms of broad environmental impacts including: durability, energy efficiency, performance, recycled content and recyclability, toxicity, biodegradability, location of manufacturer (local availability) and packaging.
  - Develop guidelines and checklists for purchasing and contractual services that take into account environmental impact.
  - Reassess accounting procedures so that agencies can receive credit for environmental purchasing.

Agencies that Purchased 100 % Recycled Paper in FY 01-02

Department of Crime Control and Public Safety
Piedmont Community College
Fayetteville Technical Community College
Wilkes County Schools
Appalachian State University
Juvenile Justice and Delinquency Prevention
Stokes County Schools
Alexander County Schools
Central Piedmont Community College
Wilson Technical Community College
Pender County Schools
Office of the Governor
Edenton-Chowan Schools
Madison County Schools
Pembroke State University
Nash/Rocky Mount Schools
UNC-Greensboro
Pamlico County Schools
Guilford County Schools
Guilford Technical Community College
Asheboro City Schools

Agencies That Failed to Report Data for FY 01-02

Administration, UNC General
Alleghany County Board of Education
Asheville City Schools
Avery County Schools
Bertie County Schools
Black Mountain Center
Bladen Community College
Bladen County Schools
Broughton Hospital
Brunswick County Schools
Cabarrus County Schools
Caldwell County Schools
Camden County Schools
Carteret Community College
Carteret County Schools
Caswell Center
Catawba County Schools
Chapel Hill/Carrboro City Schools
Chatham County Schools
Cherokee County Schools
Cherry Hospital
Clay County Board of Education
Clinton City Schools
Coastal Carolina Community College
Columbus County Schools
Dare County Schools
DHR-Div. Youth Services
Elizabeth City State University
Hoke County Board of Education
John Umstead Hospital
Kings Mountain District Schools
Lenoir County Public Schools
Lieutenant Governor's Office
Macon County Schools
Mooresville Graded School District
Mount Airy City Schools
Nash Community College
N.C. Central University
N.C. Department of Labor
N.C. Department of Public Instruction
N.C. Justice Academy
N.C. School of Science & Mathematics
N.C. School of the Arts
N.C. Special Care Center
Orange County Schools
Pasquotank County Schools
Perquimans County Schools
Pitt County Schools
Polk County Schools
Randolph County Schools
Robeson County Public Schools
Rowan-Cabarrus Community College
Rowan-Salisbury Schools
Stanly-Albemarle Schools
Thomasville City Schools
Transportation, Department of
Treasurer, Dept. of State
UNC Hospitals
Wake Technical Community College
Walter B. Jones-ADATC
Warren County Schools
Watauga County Schools
Weldon City Schools
Whiteville City Schools

WHITE GOODS MANAGEMENT

This report is based on information for FY 01-02 supplied by the counties in their Annual Financial Information Report. The AFIR is submitted annually to the Local Government Commission in the Department of State Treasurer by November 1 of each year. However, when this report was prepared on January 9, 2003 only 69 counties had submitted reports. A final analysis will be issued after additional counties submit their AFIRs.

Counties that had not reported as of January 9, 2003

Ashe	Gaston	New Hanover	Vance
Bertie	Gates	Northampton	Wake
Buncombe	Graham	Pamlico	Watauga
Camden	Haywood	Perquimans	Wayne
Chowan	Hertford	Polk	
Clay	Hoke	Robeson	
Columbus	Macon	Sampson	
Dare	Madison	Stokes	
Franklin	Moore	Tyrrell	

PROGRAM RESULTS

- The white goods management program has drastically reduced illegal dumping of appliances and other white goods in streams, road banks, woodlands and other sites during the last eight years. Removing landfill disposal fees for white goods and providing more convenient infrastructure for their collection are the cause.
- White goods funding has made it possible to clean up illegal dump sites.
- White goods programs in many counties had previously been given very low priority and were underfunded. This program has made it possible for counties to purchase specialized equipment and construct collection and loading areas to improve their white goods management.
- The quantity of white goods received at county collection sites in FY 01-02 from 69 counties was 57,637 tons, or an estimated 1,440,925 individual appliances. By comparison, only 25,749 tons or 644,000 appliances were collected in FY 91-92. Without the program, large numbers of appliances likely would have been dumped or stockpiled.

WHITE GOODS MANAGEMENT BY COUNTY GOVERNMENTS

"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." Historically, county landfills provided a designated area for scrap metals, including white goods. They then sold or gave the metals away for recycling. County management practices vary greatly. White goods have generally lower market value than other scrap metals. Recent environmental concerns about CFC refrigerants in appliances has made white goods management more difficult. Consequently, many counties charged the public special disposal fees for white goods.

White goods were banned from landfills in 1989 to encourage recycling and proper management. However, proper management of disposed white goods traditionally receives low priority. The presence of dumped white goods often encourages dumping of other wastes, such as tires, shingles and household garbage. Comprehensive white goods management laws were enacted in 1993. They included an advance disposal fee to cover the cost of white goods management. In 1998, Senate Bill 124 extended the fee for three years and reduced it to $3 per item. Previously the fee was $10 for white goods that contained CFCs and $5 for white goods that did not contain CFCs. House Bill 1854 removed the fee sunset in 2000.

A major accomplishment of the white goods management program has been to drastically reduce illegal dumping of white goods. This was achieved by requiring counties to provide collection

sites that receive white goods at no cost to the disposers. The white goods program also provides counties with funds and equipment to clean up existing white goods dump sites.

The adoption of Senate Bill 124 in 1998 encouraged counties to clean up illegal white goods dumps. Counties may use proceeds from the white goods advance disposal fee to clean entire sites with more than 50 percent of white goods. Sites with less than 50 percent of white goods may use the funds to pay for that percentage of costs incurred to remove and dispose of the white goods.

Another accomplishment was to implement proper management practices to capture and recycle CFCs. This practice avoids illegal venting of CFCs into the atmosphere. Various oils from appliance motors are also better managed, further reducing negative environmental impacts.

The white goods program has been increasingly important to counties as they deal with recent declines in scrap metal prices. Depressed prices have caused market disruptions that include the bankruptcy and closure of metal recycling companies. Counties can rely on funding and technical assistance from the white goods management program as they seek alternate markets.

Because scrap metal dealers no longer offer free hauling services, some counties may need to increase their capacity to load white goods. This may require some counties to work together when seeking contracts with metal recyclers and arranging for white goods transport.

ADVANCE DISPOSAL FEE ALLOCATION

Net white goods ADF fee collections in FY 01-02 totaled $4,522,528.79. The funds were dispersed as follows:

$ 3,125,216.99*	Allocated for direct distribution to counties
$ 871,797.32	Allocated for white goods management account
$ 347,246.33	Solid waste management trust fund
$ 181,949.63	Revenue Department cost of collections
* $ 2,155,794.39	Actual amount distributed directly to counties
$ 920,427.34	Forfeited by ineligible counties to the white goods management account

The counties did not receive the total amount of disposal fee proceeds designated in FY 01-02. Although $3,125,216.99 (or 72 percent of the net disposal fee collections) was designated for distribution, **ineligible** counties forfeited $920,427.34. These funds were distributed to the white goods management account, which receives 20 percent of the net collections. By law, DENR reports counties not eligible for fund distribution to the Department of Revenue on March 1. Counties that return to eligibility may be reinstated by notifying the Section.

COUNTY RESERVES

Some counties incur minimal costs in their white goods management programs. Consequently, about 20 counties have developed reserves. Despite reserves, some counties are reluctant to make large financial commitments for the equipment or site improvements needed to enhance white goods management.

The Solid Waste Section has encouraged county self-sufficiency by investing in the infrastructure for metal recycling programs. Metals segregated by type and kept free of contaminants have higher value to scrap metal dealers than mixed or contaminated metals.

Counties report on their white goods management program in their AFIR to the Local Government Commission by November 1. Counties with surplus funds reported the portion of funds designated for white goods expenses, such as planned site improvements or equipment purchases. Counties with non-designated funds, whose amounts are greater than 25 percent of their annual distributions, will be ineligible after March 1, 2003. Withheld funds are forfeited to the white goods management account.

COUNTIES THAT FORFEITED FUNDS

- Twenty-eight counties became ineligible for quarterly distributions of the white goods advance disposal fee proceeds in March 2002 (see following list).
- Twenty-six of the twenty-eight counties were ineligible because they reported an undesignated balance in their FY 00-01 AFIR, which exceeded the threshold amount. The threshold equals 25 percent of the amount of white goods advance disposal fee proceeds a county received, or would have received, if it had been eligible during the preceding fiscal year.
- Two of the twenty-eight counties became ineligible by not submitting their FY 01-02 AFIR by March 1, 2002 (see following list).

Counties That Became Ineligible for Advance Disposal Fees In March 2002
(Based on FY 00-01 AFIR Reports)

Alamance	Hertford	Sampson
Alexander	Jones	Scotland
Bladen	Martin	Surry
Caswell	Mecklenburg	Tyrrell
Cumberland	Onslow	Wake
Davie	Polk	Warren
Franklin	Richmond	Wilkes
Forsyth	Rowan	Yadkin
Harnett	Robeson	

Counties that did not report by March 1, 2002 were also ineligible for future distributions. Bertie and Hoke counties fell into this category. Counties that do not report by March 1, 2003 will also be ineligible for future distributions. County balances and percentages of income are listed in Appendix Table 2.

Nine counties subsequently regained eligibility when they depleted their reserve funds. Payouts resumed after they notified the Solid Waste Section of their change in eligibility.

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

Counties that will not receive advance disposal fee distributions with undesignated balances that exceed their threshold:

Alleghany	Martin
Cherokee	Mecklenburg
Cumberland	Richmond
Currituck	Rowan
Forsyth	Scotland
Guilford	Wilkes
Jackson	Yadkin
Jones	

COSTS OF WHITE GOODS MANAGEMENT

Counties can use white goods advance disposal fee proceeds for daily expenses incurred in recycling white goods. The Revenue Department disburses the proceeds quarterly.

Most county white goods programs are not self-sustaining and require subsidies. Counties may also use the funds for one-time expenses such as purchasing specialized equipment and making site improvements to better manage white goods.

Costs have increased over the past few years because of the decline in scrap metal markets. The decline is due to increased imports of metals from foreign markets. Many recyclers have gone out of business. The remaining recyclers have reduced what they will pay for the metals. Some recyclers now charge a fee to take the metals.

Sixty-nine counties reported spending $5,062,744 for white goods management during FY 01-02. This included $3,483,513 for daily costs such as hauling, freon extraction and labor. Counties spent $1,453,029 on capital improvements, such as loaders, site improvements and containers. Counties also reported spending $126,202 for the clean up of illegally dumped white goods. Daily operating costs varied greatly due to reporting, the level of services provided, geography and access to recycling markets.

Highest Operating Costs Reported

County	Cost per ton	Cost per appliance*
Rowan	$136.59	$ 5.46
Carteret	$142.44	$ 5.70
Duplin	$143.17	$ 5.73
Cumberland	$149.02	$ 5.96
Washington	$168.28	$ 6.73
Orange	$231.74	$ 9.27
Hyde	$257.59	$10.30
Montgomery	$333.90	$13.36

Lowest Operating Costs Reported

County	Cost per ton	Cost per appliance*
Cabarrus	$ 9.10	$ .36
Swain	$10.07	$ .40
Johnston	$11.77	$ .47
Guilford	$11.97	$ .48
Cherokee	$13.19	$ .53
Henderson	$16.30	$ .65
Lincoln	$17.28	$ .69
Caswell	$18.65	$ .75

*Estimate based on assumption that average appliance weight is 80 pounds.

Counties with high per unit costs tend to have strong programs, cost allocation plans, the absence of a strong market or a combination of these factors. Counties with little or no costs to dispose discarded white goods tend to have minimal programs, poor record keeping, access to a strong market or a combination of these factors. In a few counties, metals recyclers will remove white goods from county collection sites at no cost and provide CFC recovery in order to have access to the scrap metal.

Examples of capital improvements needed for white goods management are concrete pads, elevated platforms and ramps, overhead shelters and storage sheds for CFC extraction equipment. Many counties have also found it necessary to purchase several roll-off containers for white goods management.

COUNTY WHITE GOODS COLLECTED

Counties reported receiving 57,637 tons of white goods during FY 01-02 (Appendix Table 2). Since white goods contain significant amounts of recyclable metals, they are included in overall scrap metal recycling programs. Exact tonnages are unavailable since most counties do not segregate white goods from other scrap metals. Since 1991, counties have reported the estimated tonnage of white goods managed in annual county solid waste reports.

FY	Tonnage*	Estimated number of appliances**	Estimated number of appliances per capita
94-95	41,296	1,032,000	.15
95-96	37,095	927,000	.13
96-97	46,358	1,159,000	.16
97-98	39,849	996,000	.13
98-99	47,992	1,200,000	.16
99-00	47,755	1,193,875	.16
00-01	51,846	1,296,150	.16
01-02	57,637	1,440,925	.18

* Estimate based on the assumption that the average appliance weight is 80 pounds.
** Data set is composed of the 69 counties that reported by January 9, 2002.

Since white goods have value in the scrap metal market, a significant number of white goods are handled outside the county programs. Instead, retailers and individuals take them directly to metal dealers. Counties typically provide a collection site for white goods and other scrap metals at the county landfill or transfer station. Metals are then transported to various processors for recycling.

Many counties accept white goods at convenience centers located throughout the county. These are usually hauled to the white goods collection center at the landfill or to a transfer station for processing and shipping to a metal recycling company.

WHITE GOODS MANAGEMENT ACCOUNT

The White Goods Management Account was established to assist counties that incur costs exceeding their normal share of the advance disposal fee revenue. The account receives 20 percent of the revenue from the white goods advance disposal fee. It also receives funds that counties forfeit when their surplus exceeds the threshold amount.

Not all counties received adequate funding for the daily costs of their white goods management program, and many needed grants from the account. The most frequently cited reason was an extensive county collection program. Some counties with a low cost per ton incurred deficits due to high volume.

As shown below, the account began FY 01-02 with $3,064,996.03 and ended with $979,084.93. All but $49,000 of this balance was committed for county grants. Most of the account's income was diverted to the General Fund in FY 01-02 in accordance with Section 2.2(J) of SB 1005 (Session Law 2001-424). The account was allocated $868,115.84 of the white goods advance disposal fee collections but actually received $212,844.30. Also, the account would have received an additional $920,427.34, which was forfeited by counties ineligible to receive their allocation, but actually received only $223,888.22 of the forfeited funds.

WHITE GOODS DISPOSAL ACCOUNT FY 01-02

Beginning Balance (July 1, 2001)	$3,064,996.03
Funds Received during FY 01-02	$436,732.52
Total Funds Available FY 01-02	$3,501,728.55
Grants Awarded FY 01-02	$2,522,643.62
Ending Balance (June 30, 2002)	$979,084.93

WHITE GOODS MANAGEMENT ACCOUNT GRANTS

Grants totaling $767,744.64 were distributed to 34 counties in October 2001 for losses incurred between January-June 2001 (Appendix Table 3). Grants totaling **$**668,301.45 were distributed in April 2002 to 37 counties for losses incurred during July-December 2001 (Appendix Table 4).

The White Goods Management Account can be used for grants to reimburse counties that incurred deficits the previous six months for necessary equipment purchases or site improvements. In FY 01-02 capital improvement grants to twelve counties totaled $1,086,597.53 (Appendix Table 5).

DEPARTMENT OF TRANSPORTATION

This section summarizes recycling and solid waste management efforts within the N.C. Department of Transportation for FY 01-02. North Carolina 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 incorporated into the projects noted would normally contribute to the consumer and industrial waste streams, compounding the problem of declining space in landfills. All applications of recycled materials are to be consistent with economic feasibility and applicable engineering and environmental quality standards.

Efforts to utilize recycled and solid waste materials are in response to the requirements of G.S. 136-28.8 that mandate the Department use recycled materials in highway construction projects, specifically:

- 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

- Two projects included scrap chipped tires as embankment fill material – Division 6 utilized 381,190 tires and Division 8 utilized 673,796 tires.
- The use of 2,000 recycled tire drum ballasts was also reported this year.
- One project in New Hanover County utilized 67,000 cubic meters of fly ash as embankment fill.
- Two projects (Division 8 and Division 4) reported guardrail with 71,160 recycled plastic offset blocks.
- Four projects included the use of recycled concrete totaling 2,081 cubic yards.
- Several projects utilized Recycled Asphalt Pavement totaling 18,780 tons, and 45,000 square yards of milling were utilized to stabilize low shoulders in maintenance projects.
- The use of 66,000 pounds of recycled glass beads was also reported.
- 6,136 cubic yards of recycled mulch were used throughout the state.
- Division 4 used 150 cubic yards of recycled turkey litter as soil amendment.
- 100 feet of guardrail and posts were reused on projects this year.
- Wentworth Maintenance, in Division 7, used a number of recycled products including: 2,000 feet of silt fence and posts, 2,000 feet of reinforced concrete pipe, 4,000 tons of stockpiled soil, gravel and rubble, as well as 10 cords of oak wood from clearing operations to heat the maintenance facility.

See http://www.doh.dot.state.nc.us/preconstruct/highway/dsn_srvc/value/recycle/ for the list of materials DOT has used since 1989.

CONTINUOUS PROCESS IMPROVEMENT

Three entries were submitted for the 2001 Continuous Process Improvement Awards in the Environmental Sustainability category. Eight additional entries resulted in direct reduction of resource consumption or environmental impact. These eleven awards include:

- **Woody Construction Debris to Usable Lumber** – Previously, logs were accumulated from roadway cleaning debris and stored at the Pitt County sandpit. Rather than paying a landfill-tipping fee, a local contractor with a portable sawmill cut the logs into usable lumber for shelters in a maintenance yard. The contractor charged $500 for his labor. If purchased retail, the 140 pieces of lumber are worth approximately $2,000. It is estimated that tipping fees of $350 were saved. This resulted in approximate total monetary savings of $1,850 in addition to the reduced environmental impact from landfilling the logs and purchasing new lumber for the maintenance of shelters.
- **Truck Kitty Litter Box –** According to the Stormwater Pollution Prevention Plan, to avoid fluid leaks from exposure to rainfall and possibly causing the polluted rainwater from entering the storm drainage system, drip pans should be provided for all vehicles and equipment that leak. Some equipment, such as asphalt distributors with spray bars, have many places where potential leaks originate and it becomes impossible and/or impractical to provide a drip pan. The SPPP team created a CPI team to address this problem. The team created a 70’ x 66’ area that functioned similar to a kitty litter box. Several loads of stone were placed in the boxed area. Any drips or spills are contained within the box

and on the loose stone. Crews scoop up the containment material and place it in the proper storage area. The material is salvageable for maintenance use.

- **Bridgesharks –** Drift and debris constantly build up against bridge columns during heavy rains causing scouring of the river banks and silt sedimentation build-up against the debris. Before the installation of the bridgesharks, the drift had to be removed manually or with a crane. This work is dangerous, time-consuming and costly. Bridgesharks are installed on the face of the bridge columns and designed to eliminate drift accumulation on the columns. A bridgeshark is a molded polyethylene turbine attached to a stainless steel track. The rotating turbine slides up and down on the track relative to the water surface elevation and is designed to intercept and turn floating trees, logs and debris before they impact the column face. Since the bridgesharks have been installed, there has been no debris build-up.
- **Reuse of Clipped-off Aggregate Base Course Scheduled for Discarding –** On this major highway construction project, a nominal 2" of the existing 12" ABC layer was to be clipped off to establish the subgrade. This material was to be discarded and 60,600 tons of ABC was to be purchased to reconstruct the finished ABC shoulders, median and rest area ramp base course. The clipped-off ABC exceeded the tonnage to be purchased and hauled onto the site. A supplemental agreement was negotiated for a $3.25 per ton price to reuse the ABC, which resulted in savings of $863,550.
- **Construction Debris Disposal Elimination –** Waste concrete pipe and asphalt have historically been hauled to the Duplin County landfill. A concrete company, that had recently purchased equipment to recycle concrete and asphalt, was contacted and agreed to accept the material at no charge. This eliminated the disposal tipping fees and resulted in an estimated savings of $29,300.
- **Recycled Erosion Control Stone –** Riprap stone used for temporary erosion control devices on secondary roads construction has to be removed when projects are completed and permanent vegetation is established. Rather than dispose of used material, the stone is removed and stockpiled at maintenance facilities for repair and other maintenance activities. Eliminating the purchase and use of additional stone saves both money and natural resources.
- **Electronic Utilization of Pavement Condition Survey –** Personnel conduct a pavement condition survey of all primary and secondary roads every two years. The Pavement Management Unit processes and transmits this data to Division, District and County maintenance personnel. Historically, reporting has been done in a labor intensive hard copy format. Now, the Pavement Condition Survey data is available on the Pavement Management Unit Web site and a CD with the same data is distributed. Hard copies are processed only for the Pavement Management Unit and Division offices. Labor spent compiling data into binders is reduced and the cost and resources consumed by additional binders is eliminated.
- **Roadside Quail Habitat Area –** The Roadside Environmental Unit is working with the Division of Wildlife Resources to develop and enhance habitat suitable for quail on NCDOT rights-of-way in Division 12. Through selective mowing, tree removal and replacing fescue with native grasses, a 3.5 mile stretch of right-of-way should develop into a corridor for quail movement and habitation. This area incorporates two existing wildflower beds and includes a median meadow area.
- **LED Signal Head Retrofits under Transportation Improvement Program Projects –** New signal standards require retrofitting with LED displays, which provided better visibility for improved controlled intersection safety. The displays currently have a five-year warranty that reduces trouble calls and resource consumption for replacement. They also require 50 percent less power consumption than incandescent displays. Traffic Services is faced with retrofitting these new signals using maintenance or other funding sources. Traffic Engineering proposed to let the project signal contractor retrofit the signal heads while the project is ongoing. This method simplifies and expedites the replacement of traditional units.
- **International Registration Plan Clearinghouse –** As a member of the IRP, the N.C. IRP is responsible for collecting monies due from each IRP Registrant for every jurisdiction of travel and disbursing them monthly. This manual process presented several problems, which often resulted in untimely submission and lost revenue. The N.C. IRP joined the IRP Clearinghouse July 2001. As a participating jurisdiction, information can now be obtained electronically through the Clearinghouse. This streamlines the collection process and reduces the amount of paper used for forms and manual check processing.
- **IRP Internet Renewal –** The IRP Internet renewal program provides a convenient, secure method for apportioned fleets to be renewed without visiting one of two state renewal sites. It also allows

electronic payment and the availability to print new registration credentials at the customer's location. This greatly reduces the number of walk-in customers and the volume of mail generated at IRP offices.

AWARDS & PUBLICATIONS

In the 2002 Federal Highway Administration Biennial Awards for Excellence in Highway Design, three NCDOT submissions that reduced environmental impact won.

- Merit Award in Category 6, Highway-Related Projects for the Timber Pedestrian Bridge in Winston-Salem. This bridge, which crosses the Old Salem Bypass, was designed and constructed as a gateway to the historic village of Old Salem. The bridge uses the Burr Truss design to compliment the architecture of Old Salem's Moravian Heritage. The new bridge enhances safety by eliminating the need for pedestrians to cross the busy highway. It also reduces the need for automobiles inside the historic district. The construction required recycling timbers obtained from razed structures. Some timbers came from the Port of Charleston, S.C. This unique project is sensitive to, meets the needs of and fits in with the Old Salem Historic District.
- Honorable Mention in Category 3A, Major Highway Structures (above $10 million) for Neuse River Bridge. This bridge is one of the largest, single, public works projects ever undertaken in North Carolina. This project provides a complex, yet highly functional bypass at the historic town of New Bern. It was accomplished with special consideration to numerous environmental, social and historic issues posed by the community. The alignment was favored because of its smaller impact on the communities and land use.
- Honorable Mention in Category 6 for the Crabtree Creek Greenway Connector. The Crabtree Creek Greenway Connector is an urban multi-use trail linking neighborhoods along the City of Raleigh greenway system to one of the largest shopping malls in the southeast. This 5,000 foot long section of multi-use trail includes an underpass with U.S. 70. It also features approximately 1,200 feet of retaining wall to combat erosion in a floodway zone along Crabtree Creek.

NCDOT's use of 8,000 tires in a noise wall on U.S. 421 west of I-40 in Winston-Salem was featured in the April 2002 Project Development and Environmental Analysis Branch newsletter, "Centerline". This is the first use of this new product. So far, it has provided improved sound absorption, lighter weight and, therefore, less construction time. This project will ultimately lead to more use of this and similar products. It will support DOT's effort to use recycled materials in highway construction projects.

The Vegetation Management Section of the Roadside Environmental Unit is conducting a pilot project with a wildflower bed off of I-40 at the Jones Sausage Road interchange in Wake County. They will use donated compost and equipment to cover a deficient, untilled plot with a compost blanket that has an injected wildflower seed mix. The results will be compared with standard procedures and applications to determine the feasibility of increasing the use of this recycled product in beds with deficient soil characteristics. For additional information on NCDOT's use of recycled materials, see Table 6 in the Appendix or visit http://www.doh.dot.state.nc.us/preconstruct/highway/dsn_srvc/value/recycle/.

DEPARTMENT OF ADMINISTRATION

The Department of Administration continues to promote the purchase and use of reusable, refillable, repairable, more durable, and less toxic supplies and products. As efforts progress, additional products are being added to statewide and agency specific term contracts. Increasingly, products are awarded through open market bids. For more information, visit DOA's Web site at http://www.doa.state.nc.us/PandC/.

Presently, 100 percent of bids 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, where products result in waste reduction and their procurement is both practicable and cost-effective. 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 enables individuals to select needed items from an electronic catalog; 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 a vendor or prospective supplier to electronically receive and respond to requests for quotations. Participants include agencies throughout N.C. and many other public-sector buying entities in the country. E-quote is most appropriate for suppliers of goods. For agencies, it eliminates the faxing and mailing of request-for-quotes. For vendors, it eliminates the need to submit hard copies of the quotes by mail.

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

INTERACTIVE PURCHASING SYSTEM

The Division of Purchase and Contract continues to promote the electronic advertising of IFBs and RFPs. Vendor Link allows registered vendors to receive electronic notification of advertised bids.

OPEN MARKET BIDS

The division has expanded its efforts to secure products and supplies that contain recycled content, especially post consumer content. It seeks items that are reusable, refillable, repairable, more durable and less toxic. Approximately 63 open market bids that support environmental purchasing were awarded. Purchases included used equipment, packaging materials that contain post consumer recycled content and products that contain recycled content. The division also request background on companies' efforts to help protect the environment.

Some examples are:
- Two bids were awarded for aluminum stair systems. These systems contain 45 percent recycled materials.
- One bid (agency specific term contract) was awarded for truck wash oil-water separators. The units collect oil when large equipment is washed.
- Three bids awarded were for aluminum bleachers. The seatboards and footboards can be recycled after use.
- Numerous bids were awarded that included used equipment and vehicles. Savings to the state equaled $953,341.00 during this period.

STATEWIDE TERM CONTRACTS

As existing term contracts are re-bid and new term contracts developed, the Division of Purchase and Contract continues to improve. More contracts now offer a wider range of sustainable or environmentally friendly products. These term contracts are listed below.

- **Oil Filters, 060c** - Allows for multipacking, which reduces the number of individual boxes for the filters. 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 return is a more efficient appliance that uses less energy over the lifetime of the product.
- **Office Paper, 645a** - Contains both 100 percent and 50 percent post consumer and chlorine-free copy paper. All paper on this contract is recycled.
- **Remanufactured Toner Cartridges, 207a** - They are refillable so they never enter 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 their wet-lead battery counterparts. The gel sealed battery is less toxic and has an operating life that is 2 ½ - 3 times longer than the wet/lead acid variety.
- **Lateral Filing Cabinets, 425f** - Cabinets contain 5 percent recycled content. Corrugated boxes have a minimum 50 percent post consumer waste and are recyclable. The contractor re-purchases files at end of 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. Class A cabinets contain 29 percent recycled content, 3 percent post consumer recycled content and are 96 percent recyclable.
- **Wood Library Furniture, 420d** - Contractors support sustainability through different practices. Although the end product does not contain recycled content, it is made from a renewable source. Packaging is recycled, and recyclable; wood scraps are turned into mulch; blanket wrapping is used for shipping and the wood is recycled to make particleboard. Solid wood furniture is 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. Instruments can be traded-in for reconditioning. 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. Carpet removed will be recycled or diverted.
- **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** – These encourage 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 with packaging that contains 73 percent recycled content. Some lamps are low mercury and non-hazardous.
- **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 with more energy efficient lamps and ballasts. Some ballast contains no PCBs and can be disposed of in the trash.
- **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 are compliant with the 9000 guideline in the International Organization for Standardization. Packaging contains 60-100 percent recycled content.
- **Laminators & Laminating Film, 665a** – Some of the 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.

The following items purchased by state agencies meet the criteria for aiding waste reduction 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
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

More Durable (continued)
Grader blades
Grader slope attachment
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
Pens

Recyclable
Pens
Carpet
Vertical filing cabinets
Wood casegoods
Wood library furniture

Washable
HVAC filters

SCRAP TIRE MANAGEMENT

SCRAP TIRE DISPOSAL ACCOUNT

The Scrap Tire Disposal Account was created by the 1993 General Assembly and receives 27 percent of the revenues from the Scrap Tire Disposal Tax initiated on October 1, 1993. The 2002 Session removed the sunset 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 01-02 BALANCES

Balance of Funds as of July 1, 2001	$5,126,767.69
Deposits Received FY 2001-2002	$795,000.13
Total Funds in Account	$5,921,767.82
Grants to County Scrap Tire Programs	$1,532,861.42
Nuisance Tire Site Cleanup Program	$463,462.09
Processed Tire Material Grants	$259,019.51
Balance of Funds as of June 30, 2002	$3,666,424.80
Obligated funds as of June 30, 2002	$2,317,881.87
Net Balance of Funds as of June 30, 2002 *	$1,348,542.93

* $2,317,881.87 obligated as $336,827.65 for tire clean-ups and $1,981,054.22 tire recycling grants under contract.

TIRE TAX DISTRIBUTION

Of the state's 2 percent tire disposal tax revenue initiated October 1993, 62 percent is distributed to counties on a per capita basis. In the past year, the total amount distributed was $7,360,340. 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 $9,481,686.73. This provided an average of 74 cents for each of the 10 million scrap tires handled by the counties.

On January 1, 1994, counties stopped charging tipping fees to dispose of tires that were certified as generated in N.C. (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 that 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 this fiscal year, 56 counties requested $992,564 and were awarded $804,004. In the second grant cycle, 53 counties requested $1,024,935 and were awarded $811,950.

Funds are available to help counties whose costs exceed their allocation. Historically, the amount of grant funds requested by counties has surpassed availability. Scrap tire legislation requires the 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	**4/96 – 9/96**	**10/96 – 3/97**	**4/97 – 9/97**	**10/97 – 3/98**	**4/98 – 9/98**	**10/98 – 3/99**
Funds Available	$314,640.07	$301,497.02	$655,226.57	$976,245.51	$687,847.37	$633,761.66
Funds Awarded	$314,640.07	$301,497.02	$592,165.00	$602,778.28	$644,334.67	$583,093.00
Grant Requests	30	37	42	41	45	46
Funds Requested	$509,885.25	$395,822.44	$665,177.91	$677,682.00	$761,308.00	$781,603.00

Grant Period	**4/99 – 9/99**	**10/99 – 3/00**	**4/00 – 9/00**	**10/00 – 3/01**	**4/01 – 9/01**	**10/01 – 3/02**
Funds Available	$699,950.87	$663,467.43	$751,295.88	$700,221.11	$0	$0
Funds Awarded	$666,042.36	$786,511.24	$799,500.85	$709,226.95	$804,004.00	$811,050.00
Grant Requests	56	53	53	51	56	53
Funds Requested	$816,004.63	$842,931.37	$898,907.67	$730,709.37	$992,564.00	$1,024,935.00

GRANTS AWARDED

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

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. $212,420.00
  Construct additional molds to increase hard rubber tire manufacture
  COMPLETED
- Continental Tire, Inc., Charlotte, N.C. $1,520,000.00
  Develop “tire to tire” technology with 25 percent recycled content goal
- Jackson Paper, Inc., Sylva, N.C. $377,000.00
  Boiler modifications for tire derived fuel
- N.C. State University, Raleigh, N.C. $38,291.00
  Tooling development for scrap tire recycling
- TIRES, Inc., Winston Salem, N.C. $320,000.00
  Produce playground/industrial mats

TIRE CLEANUP PROGRAM

A total of 353 nuisance tire sites have been identified in North Carolina. A total of 324 have been cleaned and 21 sites have cleanups underway. Of the remaining eight sites, four are under enforcement action. Counties are encouraged to locate and clean all small tire sites through countywide cleanup activities.

	Number of Sites	Total Known Tires	Total Tires	Cleared Tires
Cleaned Up	324	6,490,573	87%	6,490,573
Under Clean Up	21	257,366	3%	133,566
Countywide Cleanup	--	697,357	9%	679,357
Remaining Sites	8	27,500	1%	0
TOTAL	**353**	**7,454,796**	**100%**	**7,303,496**

The law requires the division to address nuisance tire sites that pose the greatest threat to public health and the environment first. 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 up.

The section 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 section is committed to the N.C. Big Sweep program, with reimbursements going to counties that request funds for disposal of scrap tires collected during the statewide event.

To date 165 nuisance tire sites were cleaned using STDA funds. Cost recovery efforts collected $331,321.55 from responsible parties in 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.[4] The 2001 N.C. population was about 8.2 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 consist of 100 passenger tires, 20 truck tires or four off-road tires (tractors and other large off-road equipment).

In FY 01-02, counties reported receiving tires in three size categories: 81 percent passenger car tires, 14 percent heavy truck tires and 5 percent off-road tires. During FY 01-02 counties disposed of approximately 9,308,000 tires (8,835,000 passenger tires, 444,000 heavy truck tires and 29,000 off-road tires). Comparing tire generation to population results in 1.14 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 Table 7 of the Appendix.

In FY 01-02, 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:

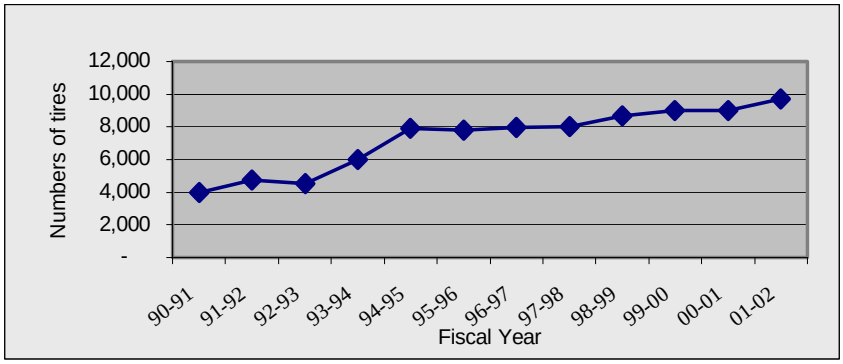
113,250 tons	Managed by counties and shipped to three processing firms
1,477 tons	Managed by counties and shipped out-of-state
9,667 tons	Tires taken directly to processing firms (not managed by counties)
124,394 tons	**Total**

Counties report receiving approximately 115,000 tons of the total 124,000 tons from N.C. disposers. The counties shipped about 113,000 tons to three private recycling facilities; the remaining 1,500 tons were shipped to out-of-state processors.

Three private N.C. processing firms received 115,000 tons from county tire programs and an additional 9,600 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.

The success of the tire program shows in 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 Solid Waste Section estimates that counties spend about $600,000 per year to manage out-of-state tires that are inappropriately disposed as North Carolina tires.

Volume of Tires FY 90-91-FY 01-02



[4]Markets for Scrap Tires. 1991. US EPA, Office of Solid Waste. EPA/530-SW-90-074A. Washington, DC.

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

The Solid Waste Section assists counties 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 Scrap Tire Disposal Account to cover cost over-runs.

COUNTY TIRE DISPOSAL COSTS

Counties report spending a total of $9,481,686.73 for scrap tire disposal (Appendix Table 7). The reported costs for scrap tire disposal varied greatly; price's ranged from a low of $35 to a high of $188 per ton (Appendix Table 8). Some counties with unusually high tire costs incurred capital improvements and equipment purchases. Also, 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 errors in recordkeeping or reporting by the counties. 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 in North Carolina. N.C. processors report that contracts with counties typically charge $60-$70 per ton, including transportation and trailer rental costs. Counties at a distance from processing facilities may pay as much as $70-$90 per ton.

The average tire disposal cost in FY 01-02 was $82 per ton. The number of county programs totaled 95 including three regional programs [Carteret, Craven and Pamlico (CRSWMA); Chowan, Perquimans and Gates; Mitchell and Yancey Counties].

APPENDIX
TABLE 1
COUNTY WHITE GOODS PROGRAM DESCRIPTIONS

County	Tons	Operating Costs	Cost Per Ton	Capital Improvements	Cleanup Costs	Contractor
Alamance	971	$38,000.00	$39.13	$65,210.00	$0.00	D H Griffin
Alexander	0	16,905.00	No Data	0.00	260.00	Stateline Scrap
Alleghany	418	11,263.00	26.94	0.00	0.00	Gordon Iron
Anson	411	0.00	0.00	0.00	0.00	Metal Recycling
Avery	406	28,647.00	70.56	0.00	0.00	Johnson City Iron
Beaufort	875	99,301.00	113.49	0.00	0.00	GDS
Bladen	286	15,309.00	53.53	0.00	0.00	Stateline Scrap
Brunswick	1,424	74,223.00	52.12	0.00	0.00	E Coast Recycle
Burke	1,530	44,588.00	29.14	5,780.00	0.00	Stateline Scrap
Cabarrus	748	6,806.00	9.10	331,767.00	0.00	Stateline Scrap
Caldwell	900	37,712.00	41.90	0.00	0.00	Foothills Env
Carteret	410	58,402.00	142.44	0.00	1,620.00	Waste Industries
Caswell	307	5,726.00	18.65	17,006.00	0.00	Dons Auto
Catawba	931	67,602.00	72.61	0.00	0.00	Tri State Scrap
Chatham	928	77,611.00	83.63	0.00	0.00	Stateline Scrap
Cherokee	245	3,231.00	13.19	5,678.00	0.00	Jack Millsaps
Cleveland	1,980	239,353.00	120.89	0.00	0.00	Carolina Recycle
Craven	2,337	171,098.00	73.21	0.00	0.00	Andrea Dixon
Cumberland	1,168	174,051.00	149.02	0.00	0.00	United Salvage
Currituck	484	62,487.00	129.11	0.00	0.00	Tri State Scrap
Davidson	844	21,943.00	26.00	105,850.00	0.00	Pugh Auto
Davie	204	19,902.00	97.56	0.00	0.00	
Duplin	690	98,788.00	143.17	0.00	0.00	Meshaw Brothers
Durham	1,395	131,405.00	94.20	6,673.00	24,832.00	Atlantic Scrap
Edgecombe	2,555	56,848.00	22.25	80,356.00	0.00	United Salvage
Forsyth	2,147	78,076.00	36.37	408,203.00	0.00	Pugh Auto
Granville	838	39,263.00	46.85	0.00	29.00	United Salvage
Greene	294	15,596.00	53.05	0.00	0.00	Tri State Scrap
Guilford	2,654	31,773.00	11.97	7,633.00	92,461.00	D H Griffin
Halifax		5,167.00	No Data	0.00	0.00	
Harnett	423	55,669.00	131.61	0.00	0.00	Dunn Scrap Iron
Henderson	2,300	37,484.00	16.30	0.00	2,500.00	Stateline Scrap
Hyde	99	25,501.00	257.59	0.00	0.00	GDS
Iredell	451	0.00	0.00	137,162.00	0.00	L Gordon Iron
Jackson	1,629	0.00	0.00	0.00	0.00	Webster
Johnston	631	7,430.00	11.77	70,000.00	0.00	Atlantic Scrap
Jones	105	4,724.00	44.99	0.00	0.00	Andrea Dixon
Lee	694	18,867.00	27.19	11,347.00	0.00	Stateline Scrap
Lenoir	1,596	119,175.00	74.67	0.00	0.00	Fussell Salvage
Lincoln	1,408	24,331.00	17.28	5,000.00	0.00	Tri State Scrap
Martin		16,733.00	No Data	0.00	0.00	
McDowell	768	33,872.00	44.10	0.00	0.00	Tri State Scrap
Mecklenburg	3,294	244,911.00	74.35	0.00	0.00	Southern Metals

APPENDIX
TABLE 1 (cont'd)
COUNTY WHITE GOODS PROGRAM DESCRIPTIONS

County	Tons	Operating Costs	Cost Per Ton	Capital Improvements	Cleanup Costs	Contractor
Mitchell	433	$46,323.00	$106.98	$16,400.00	$0.00	Johnson City Iron
Montgomery	31	10,351.00	333.90	0.00	0.00	Uwharrie Env
Nash	1,207	130,485.00	108.11	0.00	4,500.00	United Salvage
Onslow	750	39,161.00	52.21	0.00	0.00	E Coast Mobile
Orange	846	196,050.00	231.74	1,500.00	0.00	D H Griffin
Pasquotank	631	53,712.00	85.12	108,679.00	0.00	United Salvage
Pender	0	90,109.00	No Data	0.00	0.00	Southern Metals
Person	430	12,910.00	30.02	0.00	0.00	United Salvage
Pitt	1,380	78,255.00	56.71	0.00	0.00	ECVC
Randolph	1,284	56,434.00	43.95	0.00	0.00	Pugh Auto
Richmond	154	9,279.00	60.25	0.00	0.00	Stateline Scrap
Rockingham	1,548	43,226.00	27.92	1,000.00	0.00	D H Griffin
Rowan	152	20,761.00	136.59	0.00	0.00	Tri State Scrap
Rutherford	579	56,056.00	96.82	0.00	0.00	Tri State Scrap
Scotland		0.00	No Data	0.00	0.00	
Stanly	1,044	22,642.00	21.69	0.00	0.00	Stateline Scrap
Surry	470	0.00	0.00	56,213.00	0.00	Pugh Auto
Swain	499	5,023.00	10.07	0.00	0.00	Phillips Metals
Transylvania	304	5,934.00	19.52	11,572.00	0.00	Stateline Scrap
Union	1,606	41,692.00	25.96	0.00	0.00	Stateline Scrap
Warren	328	20,282.00	61.84	0.00	0.00	United Salvage
Washington	356	59,906.00	168.28	0.00	0.00	E Coast Mobile
Wilkes	521	20,875.00	40.07	0.00	0.00	Stateline Scrap
Wilson	698	82,028.00	117.52	0.00	0.00	Harper Auto
Yadkin		34,721.00	No Data	0.00	0.00	
Yancey	608	27,525.00	45.27	0.00	0.00	Johnson City Iron
Total	**57,637**	**$3,483,513**		**$1,453,029**	**$126,202**	

APPENDIX
TABLE 2
WHITE GOODS PROGRAM ALLOCATIONS

County	Disposal Tax Allocation	Undesignated Ending Balance	Threshold*
Alamance	$51,003.60	($24,824.00)	0%
Alexander	13,105.09	0.00	0%
Alleghany	4,157.59	3,731.00	90%
Anson	9,831.35	1,200.00	12%
Avery	6,727.99	(29,445.00)	0%
Beaufort	17,478.89	(344,779.00)	0%
Bladen	12,567.10	(12,114.00)	0%
Brunswick	28,604.37	(86,302.00)	0%
Burke	34,739.64	(2,977.00)	0%
Cabarrus	51,220.66	(28,908.00)	0%
Caldwell	30,111.59	0.00	0%
Carteret	23,106.08	(11,756.00)	0%
Caswell	9,153.60	(8,772.00)	0%
Catawba	55,242.32	(12,355.00)	0%
Chatham	19,248.14	(3,978.00)	0%
Cherokee	9,468.80	3,435.00	36%
Cleveland	37,485.11	0.00	0%
Craven	35,553.62	(41,142.00)	0%
Cumberland	117,959.07	50,223.00	43%
Currituck	7,099.06	2,837.00	40%
Davidson	57,352.35	0.00	0%
Davie	13,594.95	(2,468.00)	0%
Duplin	19,143.72	0.00	0%
Durham	87,138.28	(402,257.00)	0%
Edgecombe	21,579.43	(21,768.00)	0%
Forsyth	119,210.49	473,004.00	397%
Granville	18,946.91	0.00	0%
Greene	7,390.97	(7,643.00)	0%
Guilford	164,194.09	134,142.00	82%
Halifax	22,269.21	0.00	0%
Harnett	35,545.47	(21,278.00)	0%
Henderson	34,802.53	(64,836.00)	0%
Hyde	2,273.44	(15,723.00)	0%
Iredell	47,916.93	0.00	0%
Jackson	12,919.18	5,585.00	43%
Johnston	47,772.54	(63,317.00)	0%
Jones	4,033.78	22,232.00	551%
Lee	19,114.97	248.00	1%
Lenoir	23,172.84	0.00	0%
Lincoln	24,890.45	5,209.00	21%
Martin	9,934.19	4,022.00	40%
McDowell	16,440.94	(32,267.00)	0%
Mecklenburg	271,954.20	289,784.00	107%

APPENDIX
TABLE 2 (cont'd)
WHITE GOODS PROGRAM ALLOCATIONS

County	Disposal Tax Allocation	Undesignated Ending Balance	Threshold*
Mitchell	$ 6,096.44	$ (85,896.00)	0%
Montgomery	10,442.32	0.00	0%
Nash	34,029.68	0.00	0%
Onslow	57,831.34	0.00	0%
Orange	46,134.50	(137,792.00)	0%
Pasquotank	13,583.29	(48,433.00)	0%
Pender	16,061.72	(205,137.00)	0%
Person	13,876.00	621.00	4%
Pitt	52,199.91	(7,048.00)	0%
Randolph	50,885.96	(23,648.00)	0%
Richmond	18,085.21	36,922.00	204%
Rockingham	35,733.72	(7,752.00)	0%
Rowan	50,772.26	365,297.00	719%
Rutherford	24,470.47	(43,933.00)	0%
Scotland	13,987.79	10,328.00	74%
Stanly	22,641.83	(30,781.00)	0%
Surry	27,740.30	(19,010.00)	0%
Swain	5,041.82	0.00	0%
Transylvania	11,423.18	2,357.00	21%
Union	48,439.78	(12,871.00)	0%
Warren	7,799.69	(5,127.00)	0%
Washington	5,321.31	(105,191.00)	0%
Wilkes	25,535.56	83,908.00	329%
Wilson	28,734.39	(213,204.00)	0%
Yadkin	14,169.44	13,269.00	94%
Yancey	$6,921.30	($166,226.00)	0%

*Calculated by dividing undesignated ending balance by disposal tax allocation. (Counties that exceed 25 percent are ineligible for disposal tax proceeds.)

APPENDIX
TABLE 3
GRANT REQUESTS & AWARDS
FROM THE WHITE GOODS DISPOSAL ACCOUNT FOR LOSSES
JANUARY - JUNE 2001

County	ADF Proceeds Received For 6 Month Period	Grant Request	Grant Awards
Ashe	$4,555.24	$8,444.84	$8,434.86
Brunswick	13,253.54	24,211.28	24,211.28
Camden	1,285.00	5,351.00	5,350.59
Chatham	9,003.21	51,719.53	51,719.53
Clay	1,602.39	2,000.16	2,000.16
Cleveland	17,637.23	105,335.34	105,335.34
Columbus	9,996.02	7,334.46	7,334.46
Craven	8,105.00	92,234.64	92,233.92
Currituck	3,332.76	31,905.75	31,905.75
Duplin	8,477.07	27,982.90	27,982.90
Edgecombe	10,292.80	8,997.01	8,997.01
Graham	1,432.83	16,363.15	16,363.15
Hyde	1,068.83	4,131.17	4,131.17
Jackson	5,677.66	29,242.34	29,242.34
Lenoir	11,087.89	32,565.11	32,565.11
Macon	5,453.38	13,972.06	13,971.78
Madison	3,615.07	991.47	991.47
McDowell	7,742.18	3,863.42	3,863.42
Mecklenburg	64,322.68	25,632.88	25,632.88
Mitchell	2,798.27	18,876.91	18,876.91
Moore	13,773.76	22,542.61	22,542.61
Northampton	3,991.00	22,434.00	22,434.48
Orange	10,991.38	63,274.33	63,274.33
Pamlico	1,262.13	8,853.07	7,714.67
Pender	7,423.49	46,036.51	46,036.51
Pitt	24,359.35	8,824.36	8,824.36
Randolph	12,650.91	9,803.75	9,803.75
Rockingham	17,095.30	7,810.32	7,810.32
Rutherford	11,526.02	12,780.50	12,780.50
Washington	1,286.97	11,101.73	9,940.93
Watauga	7,770.18	2,776.37	2,776.37
Wayne	21,516.32	29,337.49	29,337.49
Yadkin	3,617.92	4,845.08	1,369.23
Yancey	3,208.01	11,955.06	11,955.06
Totals	**$331,211.79**	**$773,530.60**	**$767,744.64**

APPENDIX
TABLE 4
GRANT REQUESTS & AWARDS
FROM THE WHITE GOODS DISPOSAL ACCOUNT FOR LOSSES
JULY - DECEMBER 2001

County	ADF Proceeds Received For 6 Month Period	Grant Request	Grant Awards
Ashe	$5,064.24	$4,098.08	$4,098.08
Brunswick	15,269.22	22,115.18	22,115.18
Camden	1,432.00	4,740.00	4,740.02
Carteret	12,334.19	19,306.56	19,306.56
Chatham	10,274.79	25,780.15	25,780.15
Cherokee	5,054.51	2,592.61	2,592.61
Cleveland	20,009.82	98,225.84	98,225.84
Craven	18,978.00	68,387.00	68,386.22
Currituck	3,789.53	28,767.84	28,767.84
Duplin	10,219.05	41,313.27	41,313.27
Edgecombe	11,519.26	19,588.03	19,588.03
Gaston	39,520.90	58,952.63	12,619.63
Graham	1,659.49	20,077.19	20,077.31
Granville	10,114.00	14,038.00	14,038.00
Halifax	11,887.46	338.90	338.90
Haywood	11,232.90	17,591.10	17,591.10
Hyde	1,213.58	15,582.82	15,582.82
Jackson	6,896.35	36,363.65	36,363.65
Lenoir	12,370.00	16,623.00	15,973.17
Macon	6,209.47	5,173.08	5,173.08
McDowell	8,776.29	8,088.44	8,088.44
Mitchell	3,254.32	18,322.21	18,322.21
Moore	15,574.22	17,930.50	17,930.50
Orange	24,626.93	62,009.17	36,500.17
Pasquotank	3,144.01	25,730.19	25,730.19
Pe/Ch/Ga	7,640.22	3,474.95	3,474.95
Pender	8,573.86	34,058.22	34,058.22
Person	7,407.11	1,864.69	1,864.69
Pitt	27,864.69	10,260.95	10,260.95
Polk	3,806.00	3,103.77	3,103.77
Randolph	27,163.29	4,200.74	4,200.74
Rockingham	19,074.92	1,907.37	1,907.37
Rutherford	13,062.51	12,372.75	12,372.75
Warren	0.00	1,141.76	1,141.76
Washington	1,231.68	10,418.78	8,809.91
Yadkin	3,279.68	6,967.82	2,683.75
Yancey	3,694.64	5,179.62	5,179.62
Totals	**$393,223.13**	**$746,686.86**	**$668,301.45**

APPENDIX
TABLE 5
GRANT AWARDS & RESERVED FUNDS
FROM THE WHITE GOODS DISPOSAL ACCOUNT
FOR CAPITAL IMPROVEMENTS IN FY 01-02

County	Grant Amount	Explanation
Ashe	$95,456.80	Track hoe
Cherokee	37,432.62	Two trailers, 50% cost of building, freon extraction equipment
Cleveland	165,166.04	Building, skid-steer loader, used truck with knuckleboom, rolloffs
Columbus	124,251.00	Rolloff truck and containers
Duplin	16,055.00	19% of rolloff truck
Edgecombe	80,356.00	Knuckleboom truck to service convenience centers
Haywood	178,792.00	White goods processing area/ concrete pad
Lee	9,758.87	11% of the cost of a roll-off trash collection vehicle
Macon	80,479.74	Concrete pad, ramp, retaining wall, building
Madison	76,725.00	Roll-off truck, 40 cubic yard container
Pasquotank	108,808.00	Roll-off truck, 11 roll-off containers
Yadkin	113,316.46	White goods processing area (building, bobcat, grading, concrete pad)
	$1,086,597.53	

APPENDIX
TABLE 6
N.C. DOT RECYCLING AND SOLID WASTE MANAGEMENT SUMMARY

Description	Use	Quantity	
Waste scrap tires			
Chipped tires	Roadbed embankment component	1,054,986	TIRES
Tire sidewalls	Drum ballasts	2,000	EA
Glass			
Glass beads	In paint & long life pavement markings	33	TONS
Plastic	Guardrail offset blocks	71,160	EA
Fly ash	Concrete mix additive	71	LBS
	Roadbed embankment component	67,000	CY
	Flowable fill	20	CY
Recycled asphalt pavements	Additive to asphalt pavements	18,226	TONS
	Hot-in-place recycling	8,770	CY
Asphalt pavement millings	Additive to asphalt pavements	37,000	SY
Hardwood bark mulch	Soil amendment	6,136	CY
Poultry litter compost	Fertilizer	150	CY
Recycled asphalt cement	Cement	28	TONS
***Wooden breakaway posts**	Guardrail offset blocks	11,194	EA
***Unclassified excavation**	Borrow	3,403,809	CY
***Recycled concrete**	Fill material	2,081	CY
	Class B stone	600	CY
***Recycled steel**	Steel beams	4,022	LBS
	Guardrail	100	FT
***Reused materials**	Silt fence and posts	2000	FT
	Reinforced concrete pipe	2000	FT
	Gravel and rubble	4000	TONS
	Clearing (heat)	10	CORDS

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

APPENDIX
TABLE 7
COUNTY REPORTS OF TIRE DISPOSAL ACTIVITIES

County	2% Tax Revenue	Tons	Total Costs	Net	Contractor
Alamance	$119,613.63	1,438.46	$102,418.35	$17,195.28	Central Carolina Tire
Alexander	30,734.06	407.81	29,598.75	1,135.31	N/A
Alleghany	9,750.39	117.22	15,621.00	(5,870.61)	US Tire
Anson	23,056.48	292.87	19,697.60	3,358.88	Tire Disposal Service
Ashe	22,248.98	430.36	27,953.29	(5,704.31)	US Tire
Avery	15,778.50	168.35	19,681.20	(3,902.70)	US Tire
Beaufort	40,991.51	543.85	65,174.00	(24,182.49)	Central Carolina Tire
Bertie	17,975.06	205.75	10,020.00	7,955.06	Central Carolina Tire
Bladen	29,472.35	531.01	49,254.00	(19,781.65)	Central Carolina Tire
Brunswick	67,082.96	1,155.72	87,213.50	(20,130.54)	Central Carolina Tire
Buncombe	188,573.62	2,816.03	194,305.98	(5,732.36)	US Tire
Burke	81,471.39	1,331.89	91,161.55	(9,690.16)	US Tire
Cabarrus	120,146.16	1,967.14	109,330.13	10,816.03	US Tire
Caldwell	70,617.69	1,053.85	92,433.50	(21,815.81)	US Tire
Camden	6,291.17	63.00	11,128.00	(4,836.83)	Central Carolina Tire
Caswell	21,467.02	135.74	12,799.42	8,667.60	Central Carolina Tire
Catawba	129,554.29	2,565.10	189,592.51	(60,038.22)	US Tire
Chatham	45,140.75	670.00	54,538.00	(9,397.25)	Central Carolina Tire
Cherokee	22,206.23	294.01	27,143.00	(4,936.77)	US Tire
Clay	8,019.89	131.24	12,877.00	(4,857.11)	US Tire
Cleveland	87,910.07	1,406.28	134,166.58	(46,256.51)	US Tire
Columbus	49,937.19	1,232.00	93,852.00	(43,914.81)	Central Carolina Tire
CRSWMA	111,075.38	1,889.10	162,778.93	(51,703.55)	Central Carolina Tire
Cumberland	276,637.58	2,926.47	247,839.00	28,798.58	Central Carolina Tire
Currituck	16,648.73	351.31	33,180.40	(16,531.67)	Waste Management
Dare	27,449.66	296.67	11,500.58	15,949.08	N/A
Davidson	134,502.72	1,805.61	118,008.22	16,494.50	US Tire
Davie	31,882.86	247.20	22,872.90	9,009.96	US Tire
Duplin	44,895.86	550.53	40,792.46	4,103.40	Central Carolina Tire
Durham	204,356.69	2,706.89	238,017.02	(33,660.33)	Central Carolina Tire
Edgecombe	50,608.09	567.20	44,516.00	6,092.09	Central Carolina Tire
Forsyth	279,572.45	5,534.40	438,368.42	(158,795.97)	US Tire
Franklin	43,280.94	586.37	43,391.38	(110.44)	Central Carolina Tire
Gaston	173,629.03	2,057.00	173,262.23	366.80	US Tire
Graham	7,290.72	132.16	16,608.00	(9,317.28)	Carolina Tire & Recycling (SC)
Granville	44,434.30	547.70	46,639.87	(2,205.57)	Central Carolina Tire
Greene	17,333.31	1,498.61	244,801.86	(227,468.55)	Central Carolina Tire
Guilford	385,068.00	8,126.40	560,721.60	(175,653.60)	Central Carolina Tire
Halifax	52,225.74	747.00	69,575.40	(17,349.66)	Central Carolina Tire
Harnett	83,361.23	801.18	80,118.00	3,243.23	Central Carolina Tire
Haywood	49,350.05	628.43	84,838.05	(35,488.00)	Waste Recovery (Atlanta)
Henderson	81,618.90	1,338.24	151,041.64	(69,422.74)	US Tire
Hertford	20,574.95	205.39	38,708.42	(18,133.47)	Central Carolina Tire
Hoke	30,928.88	405.52	28,074.59	2,854.29	Central Carolina Tire
Hyde	5,331.67	141.93	13,084.53	(7,752.86)	Central Carolina Tire

APPENDIX
TABLE 7 (cont'd)
COUNTY REPORTS OF TIRE DISPOSAL ACTIVITIES

County	2% Tax Revenue	Tons	Total Costs	Net	Contractor
Iredell	$112,374.81	2,455.90	$192,222.58	($79,847.77)	US Tire
Jackson	30,298.03	365.08	49,285.80	(18,987.77)	Jack Millsap
Johnston	112,036.16	1,682.38	117,946.53	(5,910.37)	Central Carolina Tire
Jones	9,460.01	244.82	17,376.41	(7,916.40)	Central Carolina Tire
Lee	44,828.44	662.41	34,943.01	9,885.43	Central Carolina Tire
Lenoir	54,344.92	886.78	65,672.97	(11,328.05)	Central Carolina Tire
Lincoln	58,373.10	1,241.00	101,295.00	(42,921.90)	US Tire
Macon	27,280.36	680.48	58,612.18	(31,331.82)	US Tire
Madison	17,935.03	166.98	0.00	17,935.03	US Tire
Martin	23,297.68	424.95	31,446.30	(8,148.62)	Central Carolina Tire
McDowell	38,557.30	845.51	71,089.80	(32,532.50)	US Tire
Mecklenburg	637,786.97	11,586.00	788,557.00	(150,770.03)	US Tire
Mitchell	14,297.39	390.00	37,745.50	(23,448.11)	US Tire
Montgomery	24,489.32	205.75	27,776.98	(3,287.66)	Central Carolina Tire
Moore	68,422.98	700.53	45,062.37	23,360.61	Central Carolina Tire
Nash	79,806.40	1,299.40	107,701.20	(27,894.80)	Central Carolina Tire
New Hanover	146,839.31	2,759.64	223,742.69	(76,903.38)	Central Carolina Tire
Northampton	20,122.50	333.36	23,527.40	(3,404.90)	Central Carolina Tire
Onslow	135,626.05	1,949.46	154,904.09	(19,278.04)	Central Carolina Tire
Orange	108,194.65	1,082.93	132,820.00	(24,625.35)	Central Carolina Tire
Pasquotank	31,855.55	654.20	61,883.55	(30,028.00)	Central Carolina Tire
Pe/Ch/Ga	30,263.37	698.85	63,893.00	(33,629.63)	Central Carolina Tire
Pender	37,667.94	554.22	54,776.40	(17,108.46)	Central Carolina Tire
Person	32,541.99	481.00	45,630.00	(13,088.01)	Central Carolina Tire
Pitt	122,419.25	2,101.29	163,630.00	(41,210.75)	Central Carolina Tire
Polk	16,761.63	243.20	20,915.00	(4,153.37)	US Tire
Randolph	119,337.77	2,975.54	247,520.00	(128,182.23)	Central Carolina Tire
Richmond	42,413.44	1,459.41	51,102.85	(8,689.41)	Central Carolina Tire
Robeson	112,691.60	735.71	91,500.00	21,191.60	Central Carolina Tire
Rockingham	83,802.70	1,329.46	87,135.20	(3,332.50)	Central Carolina Tire
Rowan	119,071.10	1,219.09	189,709.85	(70,638.75)	US Tire
Rutherford	57,388.13	1,271.69	134,367.65	(76,979.52)	US Tire
Sampson	55,073.15	823.90	67,306.21	(12,233.06)	Central Carolina Tire
Scotland	32,804.15	497.34	32,327.00	477.15	Central Carolina Tire
Stanly	53,099.64	854.49	79,565.84	(26,466.20)	US Tire
Stokes	40,865.86	339.46	22,400.77	18,465.09	US Tire
Surry	65,056.57	883.26	115,466.01	(50,409.44)	Central Carolina Tire
Swain	11,824.10	102.50	8,775.00	3,049.10	US Tire
Transylvania	26,789.66	347.95	30,874.74	(4,085.08)	US Tire
Tyrrell	3,755.99	39.22	3,673.96	82.03	Central Carolina Tire
Union	113,600.96	1,660.99	114,359.64	(758.68)	US Tire
Vance	39,219.14	430.00	66,000.00	(26,780.86)	Central Carolina Tire
Wake	576,491.71	6,069.99	589,834.65	(13,342.94)	Central Carolina Tire
Warren	18,291.85	322.44	24,022.64	(5,730.79)	Central Carolina Tire
Washington	12,479.53	384.50	N/A	N/A	Central Carolina Tire

APPENDIX
TABLE 7 (cont'd)
COUNTY REPORTS OF TIRE DISPOSAL ACTIVITIES

County	2% Tax Revenue	Tons	Total Costs	Net	Contractor
Watauga	$38,986.10	634.00	$6,842.00	($7,855.90)	US Tire
Wayne	103,342.65	1,142.73	124,138.20	(20,795.55)	Central Carolina Tire
Wilkes	59,886.01	1,048.66	94,419.00	(34,532.99)	US Tire
Wilson	67,387.89	2,222.00	130,675.00	(63,287.11)	Central Carolina Tire
Yadkin	33,230.17	543.26	34,721.10	(1,490.93)	US Tire
Yancey	16,231.84	348.40	33,794.80	(17,562.96)	US Tire
Totals	**$7,319,099.98**	**115,431.10**	**$9,481,686.73**		

APPENDIX
TABLE 8
TIRE DISPOSAL EXPENSES INCURRED BY COUNTIES

County	Total Costs	Cost Per Tire
Alamance	$102,418.35	$.71
Alexander	29,598.75	.73
Alleghany	15,621.00	1.33
Anson	19,697.60	.67
Ashe	27,953.29	.65
Avery	19,681.20	1.17
Beaufort	65,174.00	1.20
Bertie	10,020.00	.49
Bladen	49,254.00	.93
Brunswick	87,213.50	.75
Buncombe	194,305.98	.69
Burke	91,161.55	.68
Cabarrus	109,330.13	.56
Caldwell	92,433.50	.88
Camden	11,128.00	1.77
Caswell	12,799.42	.94
Catawba	189,592.51	.74
Chatham	54,538.00	.81
Cherokee	27,143.00	.92
Clay	12,877.00	.98
Cleveland	134,166.58	.95
Columbus	93,852.00	.76
CRSWMA	162,778.93	.86
Cumberland	247,839.00	.85
Currituck	33,180.40	.94
Dare	11,500.58	.39
Davidson	118,008.22	.65
Davie	22,872.90	.93
Duplin	40,792.46	.74
Durham	238,017.02	.88
Edgecombe	44,516.00	.78
Forsyth	438,368.42	.79
Franklin	43,391.38	.74
Gaston	173,262.23	.84
Graham	16,608.00	1.26
Granville	46,639.87	.85
Greene	244,801.86	1.63
Guilford	560,721.60	.69
Halifax	69,575.40	.93
Harnett	80,118.00	1.00
Haywood	84,838.05	1.35
Henderson	151,041.64	1.13
Hertford	38,708.42	1.88
Hoke	28,074.59	.69
Hyde	13,084.53	.92
Iredell	192,222.58	.78
Jackson	49,285.80	1.35
Johnston	117,946.53	.70
Jones	$17,376.41	$.71
Lee	34,943.01	.53
Lenoir	65,672.97	.74
Lincoln	101,295.00	.82
Macon	58,612.18	.86
Madison	0.00	.00
Martin	31,446.30	.74
McDowell	71,089.80	.84
Mecklenburg	788,557.00	.68
Mitchell	37,745.50	.97
Montgomery	27,776.98	1.35
Moore	45,062.37	.64
Nash	107,701.20	.83
New Hanover	223,742.69	.81
Northampton	23,527.40	.71
Onslow	154,904.09	.79
Orange	132,820.00	1.23
Pasquotank	61,883.55	.95
Pe/Ch/Ga	63,893.00	.91
Pender	54,776.40	.99
Person	45,630.00	.95
Pitt	163,630.00	.78
Polk	20,915.00	.86
Randolph	247,520.00	.83
Richmond	51,102.85	.35
Robeson	91,500.00	1.24
Rockingham	87,135.20	.66
Rowan	189,709.85	1.56
Rutherford	134,367.65	1.06
Sampson	67,306.21	.82
Scotland	32,327.00	.65
Stanly	79,565.84	.93
Stokes	22,400.77	.66
Surry	115,466.01	1.31
Swain	8,775.00	.86
Transylvania	30,874.74	.89
Tyrrell	3,673.96	.94
Union	114,359.64	.69
Vance	66,000.00	1.53
Wake	589,834.65	.97
Warren	24,022.64	.75
Washington	N/A	N/A
Watauga	56,842.00	.90
Wayne	124,138.20	1.09
Wilkes	94,419.00	.90
Wilson	130,675.00	.59
Yadkin	34,721.10	.64
Yancey	33,794.80	.97