North Carolina

SOLID WASTE MANAGEMENT

Annual Report

JULY 1, 2003 - JUNE 30, 2004

State of North Carolina
Michael F. Easley, Governor

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

Reduce--Reuse--Recycle

Acknowledgements

This is the 13th 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. Special thanks go to the following staff for providing data and information for this annual report:

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TABLE OF CONTENTS
N.C. SOLID WASTE MANAGEMENT ANNUAL REPORT
FISCAL YEAR 2003-2004

CHAPTER 1
PAST, PRESENT AND FUTURE

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 522 (100 county and 422 municipal) local government annual reports, 332 (including 15 out-of-state) permitted solid waste management facilities and 195 state agencies, institutions and schools. These reports represent activities related to the management of solid waste for the period July 1, 2003 through June 30, 2004.

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

Key Findings

- The state per capita disposal rate is 1.27 tons per person per year, a 4 percent increase over the 1.23 rate from last fiscal year or an increase of *18 percent* from the FY 91-92 base year.
- North Carolina communities disposed of 10,713,444 tons of waste in North Carolina and out-of-state facilities. This represents an increase of 476,484 tons from the previous fiscal year.
- North Carolina permitted solid waste management landfills received a total of 9,674,396 tons of solid waste during FY 03-04. Almost 109,000 tons originated from other states, a decrease of 24,342 import tons over the previous period. South Carolina and Virginia accounted for all imported waste.
- Ten North Carolina counties with 39 percent of the population accounted for 46 percent of the solid waste disposed in the state. Sixty-two counties exported at least some waste to landfills in Virginia, South Carolina, Tennessee and Georgia.
- Major materials recovered by North Carolina local governments during FY 03-04 were fiber (55 percent), metals (23 percent) and glass (11 percent).
- For the fifth straight year the number of local government curbside programs declined, although the number of households served grew.
- Measurable and steady progress toward waste reduction initiatives do not appear evident in the 2003 version of local government ten-year solid waste management plans. A majority of the county solid waste programs are reactive rather than progressive.
- NC continues to rely heavily on exporting waste. Over one million tons of waste was exported in FY 03-04 compared to 108,000 imported tons.

Recommendations

Again, most North Carolina counties have not halted the trend of increased waste generation and disposal. The state has moved forward with improvements to the state's solid waste management methods. Gains include better record keeping, the ability to calculate landfill capacity, enhanced public participation and additional strategic planning. *However, the goal of decreasing per capita waste disposal is not progressing*. To decrease future waste disposal it is vital to implement the following goals:

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

Solid Waste Disposal

This past year, the amount of waste disposed in North Carolina increased as it has for the past decade. Both the total amount of waste disposed and the amount disposed on a per capita basis increased. Hurricanes continue to have a large impact on our waste disposal figures. The increase in disposal seen in coastal counties is due to both Hurricane Isabel in September 2003 and the ongoing demolition and construction in coastal communities. This may explain the large, 4 percent increase in the current per capita disposal rate from the previous year. The trend may continue in the next report cycle due to the 2004 damage in the mountain communities.

The state measures changes in waste disposal rates by comparing the current per capita waste disposal base year (FY 91-92) per capita rate. (**Formula: Total Tons Disposed ÷ Population = Per Capita Disposal Rate**). Negative numbers indicate a decrease in the per capita disposal rate; positive numbers an increase. Waste reduction is a change from the base year, not a change from year to year. As seen in the following table, North Carolina continues to increase the absolute amount of waste disposed. The per capita increases have continued for *eight consecutive years.*

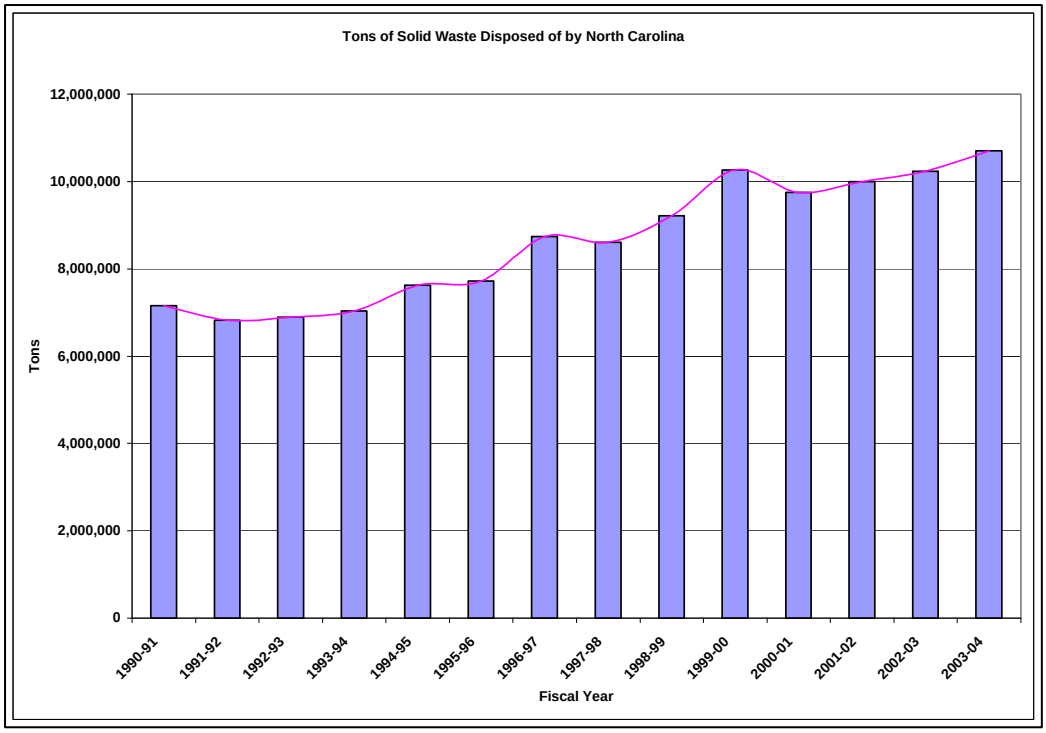
Fiscal Year	Tons Disposed	Population	Per Capita Disposal Rate	Change from 1991-1992
2003-2004	10,713,444	8,418,090	1.27	18 %
2002-2003	10,236,960	8,323,375	1.23	14 %
2001-2002	9,999,284	8,188,008	1.22	13 %
2000-2001	9,752,510	8,049,313	1.21	12 %
1999-2000	(adjusted*) 9,937,355	7,938,062	1.26	16 %
1999-2000	10,267,137	7,938,062	1.30	20 %
1998-1999	9,214,323	7,797,501	1.19	10 %
1997-1998	8,607,578	7,645,512	1.13	5 %
1996-1997	(adjusted*) 8,041,734	7,490,812	1.08	0 %
1996-1997	8,741,727	7,490,812	1.17	8 %
1995-1996	7,722,795	7,336,228	1.06	-2 %
1994-1995	7,624,144	7,180,525	1.07	-1 %
1993-1994	7,038,505	7,036,927	1.00	-7 %
1992-1993	6,890,818	6,892,673	1.00	-7 %
1991-1992	(managed**) 7,257,428	6,781,321	(Base Year Rate) 1.08	
1991-1992	6,822,890	6,781,321	1.01	
1990-1991	7,161,455	6,632,448	1.08	

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

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

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

In the mid 1990s, state waste disposal rates increased significantly. Even allowing for two natural disasters, the disposal increase is considerable. The rebounding economy was one cause, but when both the state and nation entered a recession, the expected waste reduction did not occur. The reporting period that ended on June 30, 2004 closed with a 476,484-ton increase over the previous period. As seen last year, the recession analysis model no longer appears useful when analyzing waste management changes.



Past waste and per capita disposal trends help estimate the amount of waste attributed to Hurricane Fran in FY 96-97. Counties reported actual totals following Hurricane Floyd in FY 99-00, so the figure is more precise. During FY 03-04, another hurricane, Isabel, impacted our state and waste disposal, mainly in coastal communities. The exact amount of waste attributed to Hurricane Isabel is unknown; however, observing the monthly disposal figures for coastal counties indicates large increases following Hurricane Isabel.

No discernible pattern appeared from analysis of individual counties' year-to-year trends. In FY 03-04, the 10 North Carolina counties that hold 39 percent of the state's population produced nearly 46 percent of the waste. These large counties, mainly with populations over 175,000, dramatically impact North Carolina disposal totals. However, any county can significantly impact state disposal needs at any given time. For example, Davidson County showed a very large increase this past year, the result of a one-time cleanup at a manufacturing site.

Landfill Capacity Needs

North Carolina currently has 41 operational MSW landfills. The total remaining capacity of all North Carolina landfills measures approximately 230.5 million cubic yards with room for approximately 137 million tons of MSW waste. The estimate was obtained using the state's average utilization factor of .60 tons of waste per cubic yard of air space. The estimate does not include waste exported to other states, an unknown variable subject to change.

If North Carolina's rate of landfill use remains steady at last year's rate of 633,000/tons per month, one might assume the state has 18.1 years of landfill capacity. However, the capacity figure is misleading. (Please see the next table.) Much of the state's capacity is not widely available due to permit conditions, franchise arrangements and distance. This remaining capacity also assumes a current level of imported waste. Obviously, increases in the importing of waste into North Carolina could decrease capacity even further.

Limiting factors include the fact that the Camp Lejeune landfill is for Marine Corps base use only; the Alamance County landfill is permitted to accept only Alamance County waste; and the Upper Piedmont

landfill is permitted for a maximum 600 tons per day. Many landfills' franchise agreements only allow them to accept waste from a particular distance around the landfill. Some landfills chose not to accept waste from other jurisdictions, although their permit and franchise allow it. Additionally, landfill owner/operators may elect not to construct or use all of the permitted space.

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

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

Total MSW Landfill Capacity Analysis for North Carolina

Volume Airspace Used (yd^3)	95,805,976
Tons Disposed	57,083,570
2003-2004 Tons Disposed	7,606,671
Months of Operation	
Utilization Factor (tons/yd^3)	.60
Lifetime Ave. Tons Disposed Per Month	576,011.9
2003-2004 Ave. Tons Disposed Per Month	633,889.3

	Permitted	***Total***
Original Available Airspace (yd^3)	132,927,669	326,334,692
Remaining Airspace (yd^3)	37,121,693	230,528,716
Remaining Capacity for Tonnage (tons)	22,118,022.8	137,354,710.4
Remaining Capacity in Months	34.8	217.2
Remaining Capacity in Years	2.9	18.1

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

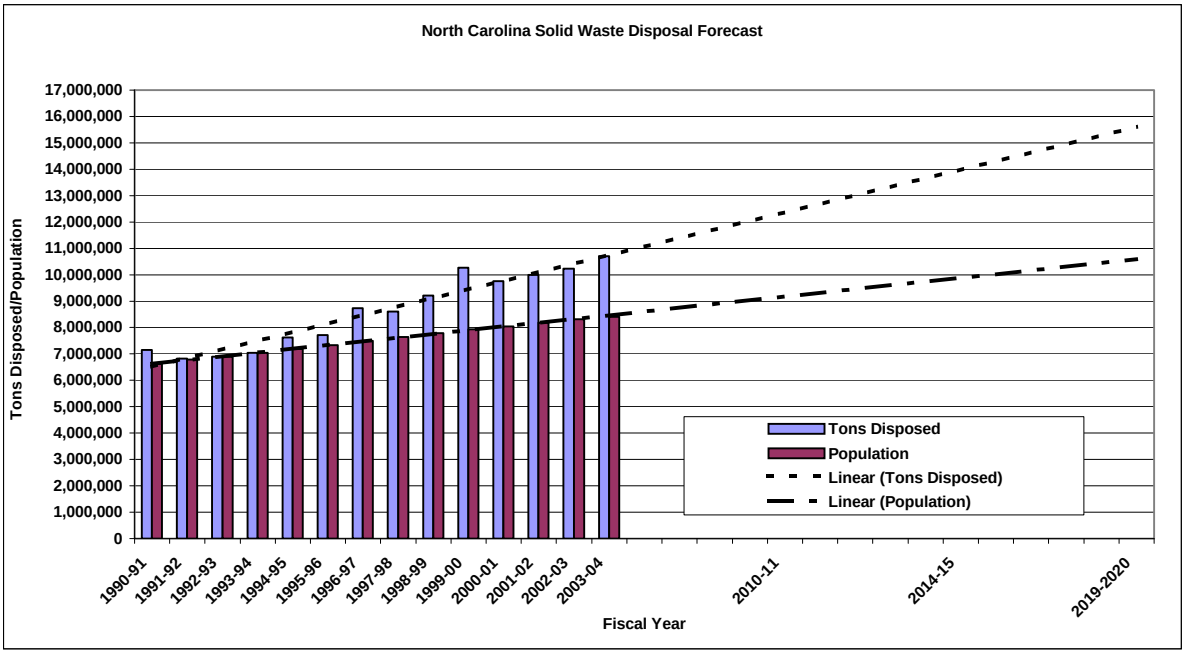
Calculations

- Avg. Tons Disposed Per Month = Tons Disposed / Months of Operation
- 2003-2004 Avg. Tons Disposed Per Month = 2003-2004 Tons Disposed / 12 months
- Utilization Factor = Tons Disposed / Volume of Airspace Used
- Remaining Airspace = Original Available Airspace – Volume of Airspace Used
- Remaining Capacity for Tonnage = Remaining Airspace x Utilization Factor
- Remaining Capacity in Months = Remaining Capacity for Tonnage / 03-04Avg.Tons Disposed Per Mo.
- Remaining Capacity in Years = Remaining Capacity in Months / 12 months

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

Future Waste Disposal Needs

Regression analysis helps forecast future waste disposal. In other words, historical trends are used to predict future amounts. Factoring in absolute population growth, North Carolina will dispose of approximately 14 million tons in 10 years and close to 16 million tons in 15 years. This amount equals nearly a ton and a half of waste for every resident by 2012. The forecast does not include the impact of natural disasters such as hurricanes, or imported waste. The obvious implication of this trend is that demand for landfill space will increase with time as populations grow, less waste is diverted and imports become a larger portion of waste disposed.



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. Reduction is measured on a per capita basis. Since FY 91-92, *waste disposal increased 18 percent - from 1.08 to 1.27 tons per person per year*. The statewide goal is unmet and the state per capita rate continues to increase, although several counties achieved the state's waste reduction goal.

Three fundamental, interrelated reasons that contributed to the failure are changes in the dynamics of waste disposal, a lack of commitment to waste diversion, and economics.

Waste management dynamics changed dramatically after the state-wide reduction 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 decrease landfill disposal as expected. Additionally, the U.S. Supreme Court overturned legislation on flow control and prohibited local governments from directing waste to certain disposal facilities. Legally, waste is a commodity and allowed free movement.

The commitment to reduce waste has waned over the years. Local governments perceive the 40 percent goal 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. In addition, anticipated landfill bans never materialized.

The economics of landfill disposal evolved since the 1989 adoption of the goal. As private landfill owners competed for tonnages, tipping fees remained low. Landfills did not become as expensive to operate as initially projected. Landfill customers readily adapted to slightly higher tip fees and did not pursue waste reduction as a way to control costs. The combination of strong state and national economies of the early 1990s, moderate disposal costs, and local communities establishing their own goals, reduced the motivation to divert materials from landfills.

Public Participation Initiative

Efforts to gain local government approval to site or expand landfills can be difficult. Landfills are an essential component of any comprehensive program that safely and economically manages solid waste, but court challenges of recent decisions for new MSW landfills are common. For many years, North Carolina's landfills were mostly county owned and operated. These facilities primarily served the county where they were located. Today, most of North Carolina's municipal solid waste goes to regional landfills located inside or outside of the state. Local governments, private waste management companies, or a combination of the two may own these regional landfills. Compared to local landfills, they serve much larger geographic areas.

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

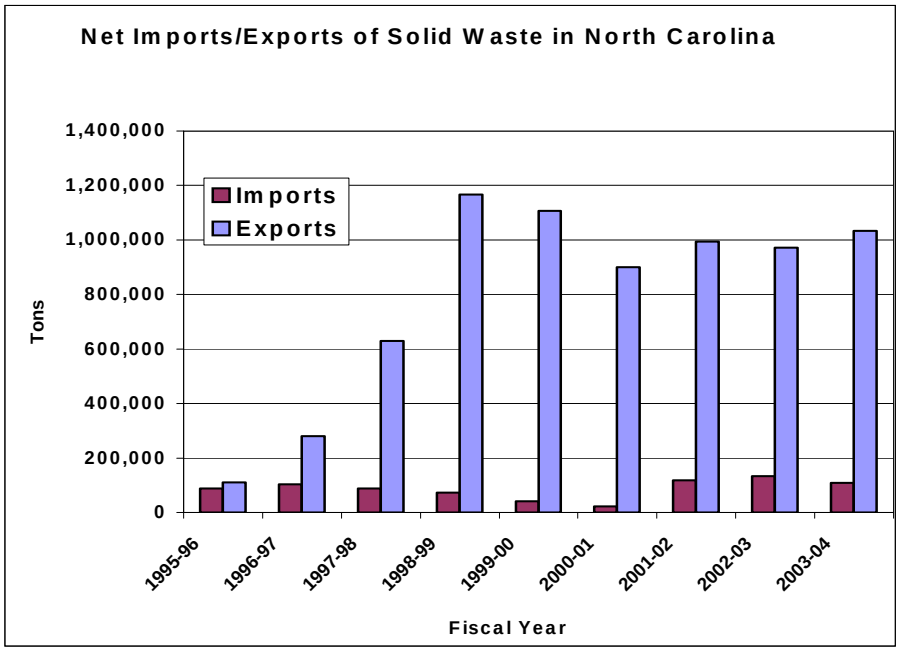
Public response to proposed landfills is intensely negative, especially from citizens who would neighbor proposed sites. The response is consistent and applies equally to regional facilities and "local" facilities that only serve the county where they are located. Local elected officials cite negative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

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

Even with the absence of landfill applications, the public participation component in Rutherford and Camden county educated residents on the landfill siting and review process, and provided another avenue to promote an exchange of ideas among state and local officials and residents.

Imports & Exports

North Carolina continues to export more waste than import. Exported waste accounts for approximately ten percent, or a total of 1,048,111 tons of the total waste disposed in the past fiscal year. Compared to fiscal year 2002-2003 numbers, this 76,825-ton increase represents a sizeable increase in exported waste.



In FY 95-96, North Carolina exported waste to one South Carolina landfill. During FY 02-03, 11 out-of-state landfills received North Carolina waste. Sixty-two North Carolina counties currently export at least some waste to 13 out-of-state landfills and two transfer stations. Back and forth movement - where waste leaves the state only to re-enter for disposal - has continued for the third consecutive year. A transfer station in South Carolina received 96,001 tons of waste from Mecklenburg County, then sent the waste back to North Carolina for disposal. For this reason, the amount has not been included in the report's import or export totals. Imports continue to increase since some North Carolina landfills are located near state borders. In FY 95-96, only one landfill, located in Forsyth County, received imported waste. Currently, nine North Carolina landfills receive imported waste. North Carolina transfer station reports and voluntary reports from out-of-state facilities provide the data used to track imports.

CHAPTER 2
GOVERNMENT WASTE REDUCTION ACTIVITIES

Annual reports received from local governments provide data on source reduction, reuse, recycling and composting activities statewide as well as other aspects of solid waste management. Data from these reports develop a picture of waste reduction efforts in North Carolina and the relative effectiveness of these programs and trends in program implementation.

Source Reduction and Reuse Programs

The number of local governments with source reduction and/or reuse programs changed very little during FY 03-04. The slight decrease from 112 governments with program to 109 governments with programs is most likely due to fluctuations in program reporting. Most governments overlook source reduction and reuse programs as cost-effective components of a comprehensive waste reduction program. Local governments are encouraged to take advantage of grants that are available for swap shops and backyard composting programs as well as free junk mail reduction materials available from the Division of Pollution Prevention and Environmental Assistance.

Local Reduction/Reuse/Recovery Programs

Program Type	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	FY 02-03	FY 03-04
Source Reduction Programs							
Backyard Composting	81	53	59	64	67	69	68
Grass Cycling	43	41	36	35	29	38	38
Xeriscaping	13	12	11	8	8	11	14
Junk Mail Reduction	55	57	64	64	61	65	63
Enviroshopping	35	35	32	31	27	32	31
Promotion of Non-toxics	35	30	31	33	27	27	28
Other	1	5	6	3	4	2	1
Reuse Programs							
Swap Shops	17	22	23	28	34	33	31
Paint Exchange	25	27	23	19	19	19	18
Waste Exchange	14	8	8	4	3	4	6
Pallet Exchange	N/A	7	7	9	6	5	9
Other	6	15	10	8	9	11	7
Local Governments with Programs	**116**	**123**	**110**	**117**	**109**	**112**	**109**

Local Government Recovery Programs

Total local government recovery decreased by almost 97,000 tons in FY 03-04. The primary reason for the decrease was a decline in organic materials recovered, predominantly yard waste. Although the influence of Hurricane Isabel can be seen in the slightly elevated organics total, the hurricane did not have the same level of impact as ice storms that occurred during FY 02-03. The recovery of organics is by far the most volatile tracked category. Hurricanes, ice storms and droughts can create significant swings in organics recovery from year to year. In order to track actual trends in recovery, it is important to evaluate changes with the organics category excluded.

During FY 03-04 non-organics recovery increased by 3,337 tons or 0.7 percent. During the same period, the state's population grew by 1.1 percent, indicating a weak growth in recycling. The weak growth is partially attributed to a continued decline in curbside recycling programs. Twenty-one communities discontinued curbside recycling programs during FY 03-04, while the only notable addition of a curbside

program was the city of Brevard, which reinstated a discontinued program. The 21 discontinued programs accounted for more than 2,100 tons of recovery during FY 02-03.

Another significant change during FY 03-04 was a decline in paper recovery. For the first time in seven years, the amount of paper recovered by local governments declined despite increases in all other categories (organics excluded). Part of this decline is due to a recalculation of the ratio used to breakout materials reported as commingled. The ratio is recalculated every couple years to accurately reflect current recovery trends, however, even using last year's ratio, total paper would have still experienced a noticeable decline.

Several factors may have resulted in the decrease in total paper recovery. The net decrease in recycling programs definitely had an effect, but other factors such as economic conditions, improved use of electronic media, reporting irregularities and a continuing increase in tonnage reported as commingled may also have played a role in the decrease. The amount of material reported as commingled over the past five years has increased by more than 92,000 tons, increasing the difficulty in determining the exact quantities of each commodity recovered.

Local Government Recovery (Tons) and Performance Measures

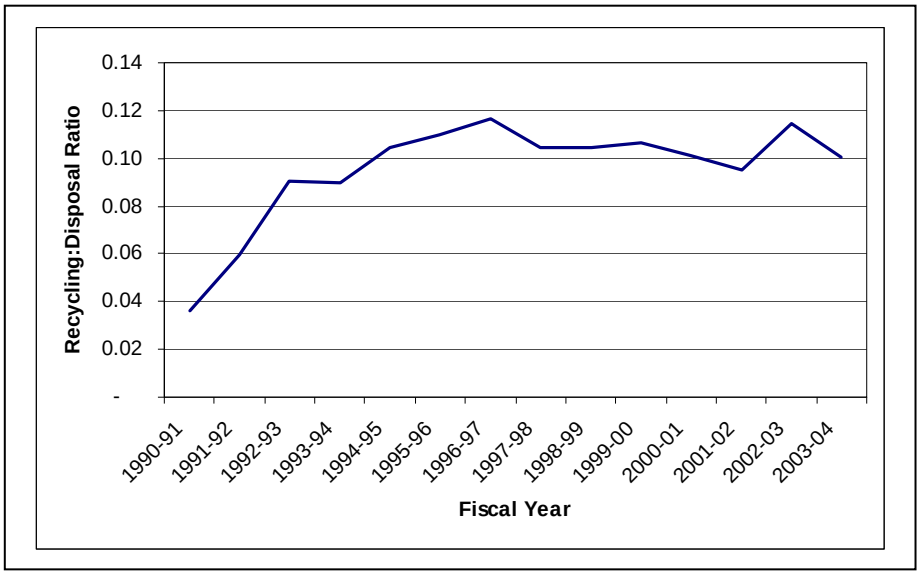
Material	FY 94-95	FY 95-96	FY 96-97	FY 97-98	FY 98-99
Total Paper	185,270	212,577	228,025	216,121	233,339
Total Glass	38,088	49,601	44,978	43,449	41,623
Total Plastics	12,339	16,253	13,699	14,399	14,835
Total Metal*	59,483	65,977	77,252	81,262	77,564
Total Organics**	495,034	498,583	640,410	504,554	525,033
Special Wastes***	2,466	3,212	3,230	3,527	3,817
Construction and Demolition Debris	N/A	N/A	N/A	N/A	N/A
Other	5,987	333	12,762	35,977	63,794
Totals	**798,667**	**846,536**	**1,020,356**	**899,290**	**960,005**
Per Capita Recovery (lbs.)	**226.19**	**235.59**	**279.19**	**242.03**	**254.40**
Recovery Ratio (Recycling:Disposal)	**0.10**	**0.11**	**0.13**	**0.11**	**0.10**

Material	FY 99-00	FY 00-01	FY 01-02	FY 02-03	FY 03-04
Total Paper	241,859	263,365	267,840	275,538	267,371
Total Glass	41,826	46,936	49,891	51,433	52,117
Total Plastics	14,474	15,062	17,269	16,807	18,679
Total Metal*	86,480	92,634	114,786	109,723	114,097
Total Organics**	638,757	540,582	468,901	689,027	589,124
Special Wastes***	4,907	4,947	5,426	5,926	6,271
Construction and Demolition Debris	59,598	15,406	17,648	20,002	24,084
Other	5,329	6,120	5,896	4,626	4,773
Totals	**1,093,032**	**985,052**	**947,657**	**1,173,082**	**1,076,516**
Per Capita Recovery (lbs.)	**285.61**	**243.66**	**231.47**	**281.88**	**255.76**
Recovery Ratio (Recycling:Disposal)	**0.11**	**0.10**	**0.10**	**0.11**	**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 ratio of recycling to disposal decreased slightly to 0.10 in FY 03-04. The decreasing slope in the figure below indicates that disposal grew more than recycling during the year. The ratio has remained relatively constant over the past 10 years, with spikes occurring in years that weather events increased the amount of yard waste managed.

Ratio of Recycling to Disposal – FY 90-91 to FY 03-04



At the request of several counties, analysis of the top 10 waste producing counties includes diversion that occurred through mulching and composting activities. Some local governments made significant investments in mulching and composting facilities and annually incur the cost of collection and facility operation. Yard waste is banned from disposal in MSW and C&D landfills. The most common management options for yard waste are mulching, composting grinding for boiler fuel and disposal in land clearing and inert debris landfills (LCIDs).

North Carolina's top 10 waste producing counties continue to represent almost half of all waste disposed in the state. When mulching and composting is included, these counties represent roughly 47.5 percent of all local government diversion in the state. When just recycling (including special waste) is included, the top ten counties account for almost 49 percent of local government recycling activities.

Disposal vs. Recycling in Ten Largest Waste Producing Counties FY 03-04

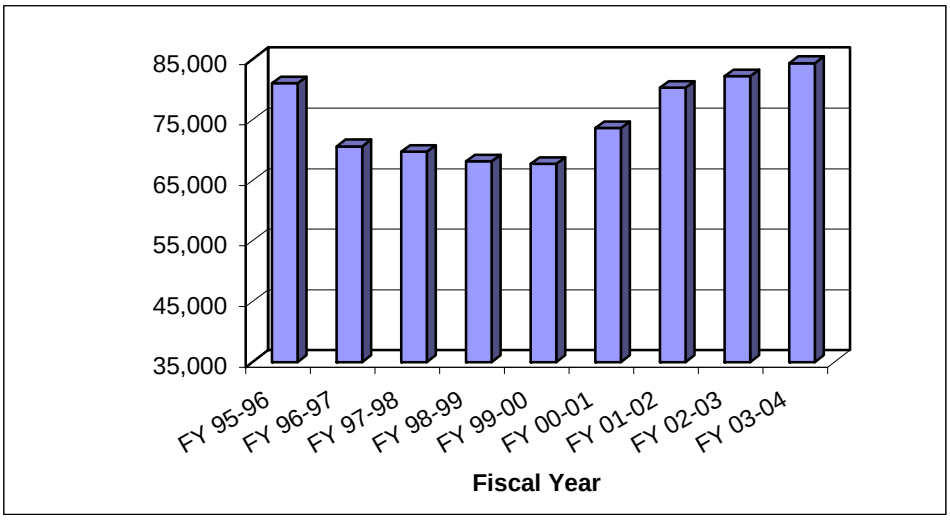
County	Disposal	Recycling	Mulching & Composting	Contribution to Disposal	Contribution to Diversion
Mecklenburg	1,266,434	56,355	72,172	11.84 %	11.94 %
Wake	920,251	43,818	47,969	8.60 %	8.53 %
Guilford	659,224	41,606	14,185	6.16 %	5.18 %
Forsyth	550,614	19,466	43,961	5.15 %	5.89 %
Cumberland	358,348	3,987	31,566	3.35 %	3.30 %
Buncombe	319,594	33,775	3,846	2.99 %	3.49 %
Durham	294,289	17,604	18,009	2.75 %	3.31 %
New Hanover*	264,387	10,283	11,685	2.47 %	2.04 %
Cabarrus	254,210	5,854	18,623	2.38 %	2.27 %
Gaston	226,625	5,149	12,245	2.12 %	1.62 %
Total	**5,113,976**	**237,897**	**274,261**	**47.80 %**	**47.58 %**

* New Hanover County local governments utilize private companies for mulching and composting. Due to the structure of the annual reporting process, tonnages handled by private mulching and composting companies are generally excluded. There is an attempt to include these tonnages in the table above.

Recovery of Traditional Materials

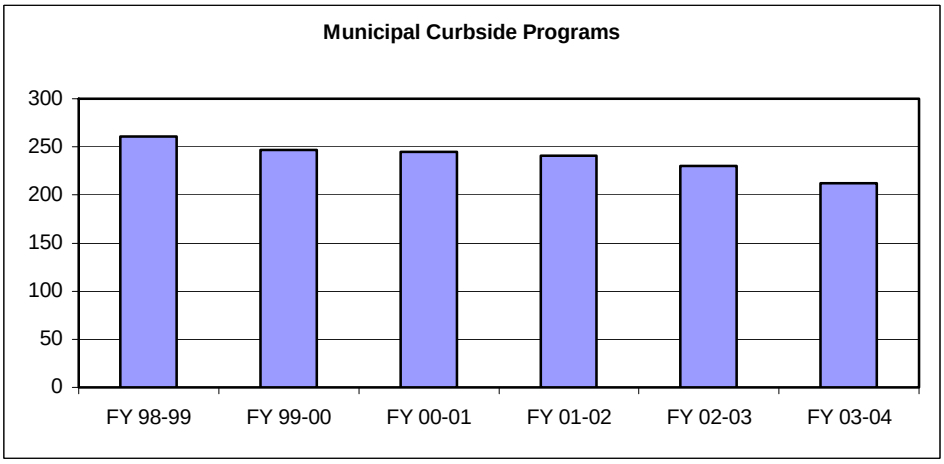
Container recovery grew by 2.64 percent during FY 03-04 to an all time high of 84,383 tons. This represents four straight years of strong growth in the recovery of glass, plastic and metal containers. Plastic container recovery grew the most during the year, potentially highlighting the ever increasing market share for plastic drink and food containers. Brown glass recovery also grew substantially during FY 03-04, however, green glass recovery declined by almost 16 percent. The large decrease in green glass recovery may be the result of fewer communities collecting green glass, a decreasing market share for green glass or the co-marketing of brown and green glass as brown glass. It is likely some combination of all three.

Total Recovery in Tons FY 95-96 to FY 03-04



Local Government Recycling Program Management

The number of local government curbside programs fell again during FY 03-04. The drop to 212 municipal curbside programs represents five straight years of declines. Although most of the programs dropped have been from small towns, some larger towns have recently discontinued curbside programs. During FY 03-04 the town of Smithfield was the largest community to eliminate curbside recycling; however, the city still maintains a drop-off recycling program. Since 1999, approximately 55,000 households have lost access to curbside recycling due to program cuts. This equates to more than 6,000 non-recovered tons of material. Despite the loss of curbside recycling for 55,000 households over the past five years, the number of households served has actually grown from 960,000 to 1.3 million households. This is mainly due to annexations and growth in the cities and towns with programs.



Drop-off programs continue to contribute more to recycling than any other type of program. Roughly 45 percent of all material recovered by local governments comes from drop-off recycling programs. The ability of these programs to handle special wastes, white goods and scrap metal is the primary reason why they contribute more than curbside programs. During FY 03-04, contributions from mixed waste processing dropped to less than 0.5 percent. Recovery from mixed waste processing will likely remain extremely low in the future.

Recovery by Program Type

Program Type	Percent of Total Recovery
Curbside	39 %
Drop-off	45 %
Mixed Waste Processing	< 1 %
Other Programs	16 %

Special Waste Management

The collected amount of special wastes, including motor oil, oil filters, lead acid batteries, and household hazardous waste (HHW), continued to grow slowly in FY 03-04. The number of new programs, however, is not increasing; leaving many citizens in North Carolina unserved or underserved in the collection of these materials. As in FY 02-03, citizens in over 70 percent of the counties in North Carolina have no alternative to disposal for their household hazardous wastes, and some have no access to publicly operated oil collection sites. Most jurisdictions do not offer oil filter and anti-freeze collection. As a result, it is likely that much of this material is still being disposed or at least stockpiled.

The N. C. Department of Agriculture and Consumer Services' pesticide container recycling program remains a relatively popular way for local governments to offer diversion opportunities for at least that portion of HHW – 69 communities offered these services in FY 03-04. In addition, with the cost of HHW programs so high, 22 jurisdictions offer alternative low cost, paint-only collection programs to the public.

Local Government Special Waste Management FY 99-00 – FY 03-04

	FY 99-00	FY 00-01	FY 01-02	FY 02-03	FY 03-04
Used Motor Oil					
No. of programs	126	125	127	125	124
Gallons collected	873,548	839,234	903,951*	907,123	939,916
Oil Filters					
No. of programs	14	18	20	21	19
Tons collected	10.34	16.15	17.79	18.64	24.07
Antifreeze					
No. of programs	49	54	56	58	63
Gallons collected	15,977	33,304	27,668	26,308	26,767
Lead Acid Batteries					
No. of programs	90	90	86	86	90
No. collected	74,737	82,043	80,912	92,292	100,217
HHW					
No. of programs	24	24	28	31	32
No. of permanent sites	13	12	17	17	17
HHW tons collected	931.82	1315.3	1483.97	1540.59	1760.17
Total cost reported	$1,644,818 ($1,765/ton)	$1,792,125 ($1363/ton)	$2,180,355 ($1,469/ton)	$2,161,359 ($1,403/ton)	$2,430,012 ($1,381/ton)

Conversions: Oil, 1 gal = 7.4 lbs; Antifreeze, 1 gal = 8.42 lbs; Lead Acid Battery, 1 battery = 35.9 lbs

Yard Waste Management

Fiscal Year 03-04 saw an expected drop in yard waste tonnages from the previous year, in which ice storms inflated vegetative debris totals. Still, there was some effect of hurricane damage in northeastern North Carolina, and overall yard waste tonnages exceeded the "normal" half million ton mark. About 10 percent of diverted tonnage went from local government collection services directly to the public (e.g.,

leaves delivered to farmers and gardeners). Public mulch and compost programs handled the bulk of diverted yard waste. About 15 percent each of yard waste totals were delivered to private facilities or LCID landfills. But the consistent diversion of grass, leaves, limbs, brush, and stumps shows that after 10 years, the state yard waste disposal ban is working well and achieving substantial annual waste reduction.

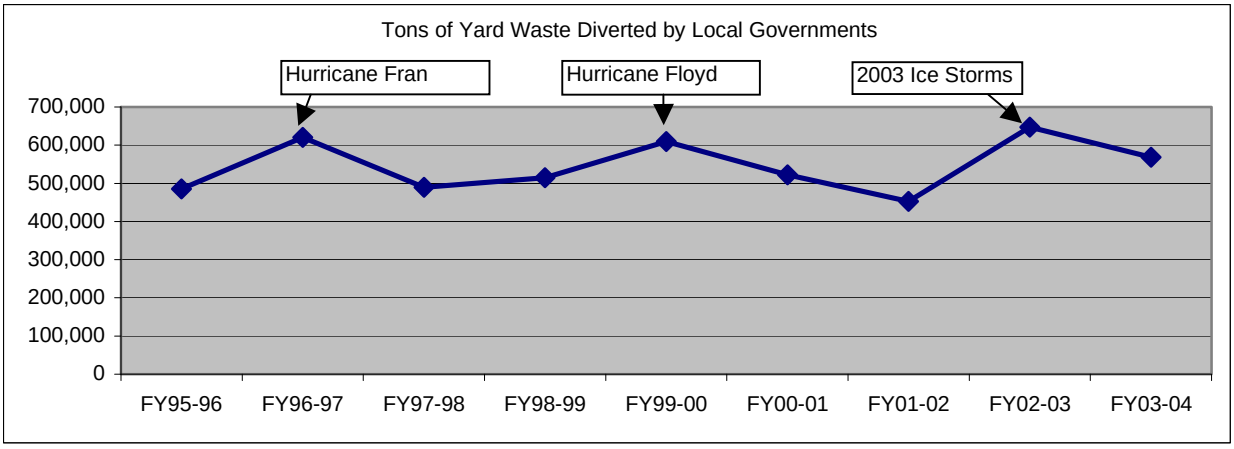
Local Government Yard Waste Management FY 02-03 and FY 03-04

Destination of Materials	FY 02-03 tons managed	FY 03-04 tons managed	Percentage Change
End Users (direct delivery)	64,164	58,954	- 8 %
Local mulch/compost facility	582,677	509,553	- 11 %
TOTAL DISPOSAL DIVERSION*	**646,841**	**568,507**	**- 12 %**
Other Public Facility**	125,990	83,800	- 33 %
Private Facility	152,567	120,543	- 21 %
LCID Landfill	133,505	137,369	3 %
YARD WASTE TOTALS	**932,913**	**826,419**	**- 11 %**

* Tonnages under the row for "Total Disposal Diversion" are not included in diversion because of data redundancy, uncertainty about actual disposition of the waste, and actual disposal of noted tonnages.

** Yard Waste Totals exclude tons for "other public facilities" - it is assumed these tons were captured under other categories.

Yard Waste Diverted From Disposal by Local Governments, FY 95-96 – FY 03-04



Recycling Markets, Prices, and Related Developments

From FY 02-03 through FY 03-04, recycling markets were remarkably strong across the board. Demand for all of the most commonly collected materials has been robust, and prices have been above average and stable, rising through the course of FY 03-04 for many of the commodities. End users of recovered glass, plastics, metals, and fiber have consistently indicated a need for more supply – in the case of U.S. plastics reclaimers, the lack of supply has almost reached a crisis point, especially as demand from China has increasingly pulled recycled resins away from domestic users.

The industrial growth of China has fueled a steadily rising appetite for raw materials, which it satisfies more and more with recycled commodities. China is now by far the leading importer of U.S. generated wastepaper. In the meantime, domestic users of recyclable commodities have also maintained their appetite for secondary resources, showing interest in getting more supply. The primary glass processor in North Carolina has indicated that the state's glass mills are asking for more "cullet" (recycled glass), which replaces virgin materials and helps lower energy usage at their plants. A study by N. C. State University completed in 2004, showed that the pallet repair and recycling industry is also capable of processing much more material. A manufacturer who started making wood flooring from pallets in 2004 had trouble getting enough feedstock to feed his operation. Users of wood waste for fuel and composting

paid higher prices that normal in FY 03-04 and in some cases ran short of material as supply failed to meet demand.

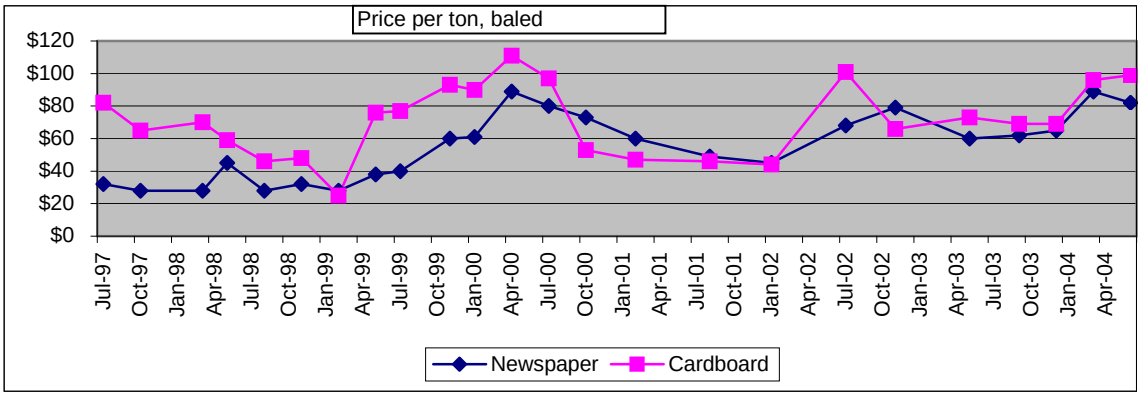
The table below shows trend of prices received by major recycling processors in FY 03-04 for some of the most common commodities. The table shows the consistency of prices, and in some cases the rise in prices over the year. Steel cans in particular experienced a dramatic increase, reflecting strong worldwide demand for finished steel that drove metal scrap prices higher. Plastics also remained at above-average price rates providing evidence of the supply "crisis" for this material.

Composite Recycling Market Prices Received by Major NC Processors, FY 03-04

Materials	Fall 2003	Winter 2004	Spring 2004	Summer 2004
Aluminum cans, lbs., loose	$ .46	$ .49	$ .54	$ .56
Steel cans, gross tons, baled	$ 48.00	$ 65.00	$116.00	$105.00
PETE, lbs. Baled	$ .10	$ .13	$ .14	$ .13
HDPE, lbs., baled	$ .14	$ .17	$ .16	$ .15
Newsprint, ton, baled	$ 62.00	$ 65.00	$ 89.00	$ 82.00
Corrugated, ton, baled	$ 69.00	$ 69.00	$ 96.00	$ 99.00
Office paper, ton, baled	$125.00	$133.00	$120.00	$143.00
Mixed paper, ton, baled	$ 30.00	$ 39.00	$ 50.00	$ 54.00
Clear glass, ton	$ 22.00	$ 24.00	$ 24.00	$ 24.00
Brown glass, ton	$ 21.00	$ 19.00	$ 19.00	$ 19.00
Green glass, ton	$ - 4.00	$ - 5.00	$0	$0

The figure below shows the price trends for two bellwether recyclables over the past seven years – newspaper and cardboard. Since 1999, newspaper has stayed over $40/ton, bringing stability to revenues for this material. Cardboard has been a little more volatile, but has also demonstrated strong market prices since a market low in March 1999. For both grades, the trend toward higher prices can be seen for the past two fiscal years, achieving $60/ton or better throughout that period.

Prices Paid for Newspaper and Corrugated Cardboard – July 1997 through June 2004



Ten Year Solid Waste Management Plans

North Carolina General Statute 130A, otherwise known as The Solid Waste Management Act of 1989, regulates the management of solid waste in North Carolina and requires local governments to become proactive, rather than reactive, solid waste planners.

The legislation prescribed a minimum content for local government 10-year comprehensive solid waste management plans, commonly referred to as plans. The plans offer an opportunity to examine, from a holistic standpoint, the overall effectiveness and efficiency of the solid waste management system locally and when analyzed, across the state. A solid waste plan provides an environmentally sound and economically efficient way for local governments to manage non-hazardous waste.

Staff from the Divisions of Waste Management and Pollution Prevention and Environmental Assistance provides resources and technical assistance for plan development. All 100 North Carolina counties design plans, either individually or regionally, in-house or through an outside entity. Public participation is required to incorporate input from a variety of public and private sources.

Not mandated to embrace the state waste reduction goal of 40 percent, counties make a "good faith" effort to define their own goal. Counties have the option to revise previous goals but must establish new goals to provide 10 years of planning. The primary objective of the planning process is to identify solid waste management needs and address them through programs, financing, political and community support. Strategies to achieve the objective include benchmarking, defining measurable goals and revising plans if circumstances or variables significantly change.

Plan Comparison

A sampling of counties correlates plans developed in 2000 with those of 2003. An analysis of 25 counties from last year's annual report ranked the counties by amount of waste disposed. The selection includes 10 counties disposing of the most waste, plus every sixth county. This sampling method encompasses a variety of circumstances that influence a county's ability to plan, implement and fund comprehensive solid waste management programs.

The primary finding, continuing the trend seen in the previous plan analysis, shows a decline in the FY 05-06 waste reduction goals originally developed in 1997. Fifteen of the 100 county FY 05-06 goals decreased in the 2000 revisions. The 1997 Reduction goal averages of 22.96 percent decreased to 13 percent in the 2000 plans and 10.33 percent in the 2003 plans. At the county level, waste generation appears to be associated with consumer spending and production levels. As local economies and populations expand, county infrastructure needs increase. Strained budgets attempt to maintain or enhance capital improvements and provide service levels at a comparable growth rate. With goals not mandated, local infrastructure needs continue to be a budget priority - at the expense of solid waste initiatives.

Of the 25 counties surveyed, Edgecombe, Greene, Jones and Surry achieved their FY 05-06 waste reduction goal. Review of 2000 and 2003 plans did not indicate aggressive waste reduction programs in three of the four counties. However, Jones County has a variable rate disposal system which studies show produces the desired effect of reducing disposal amounts. It appears the achievement of the 2005 goal from the other three counties may be a combination of population loss or low growth and moderate unemployment rates. Edgecombe experienced a 1.2 percent decrease in population; Surry a 1.14 percent increase and Greene a 2.52 percent increase between 2000 and 2002. October 2003 unemployment rates for the counties range from 4.3 to 9.6 percent.[1] This corresponds to the state growth rate of 2.8 percent and 6.1 percent unemployment rate over the same period.

Some communities in North Carolina have adopted strong waste reduction policies and are implementing programs to achieve their reduction goals. Among these counties are Chatham, Orange, Coastal Regional Solid Waste Management Authority (Carteret, Craven and Pamlico counties), Davidson, Pitt and Stokes. Two initiatives assist these counties in goal achievement, (1) programs targeting specific waste generation sectors and (2) multi-faceted education outreach.

Plans for these counties *target specific waste generation sectors* with programs designed to capture recyclable office and school paper, corrugated cardboard, multi-family housing recyclables or non-traditional recyclables. Several plans describe aggressive in-house buy-recycled programs and accompanying paper recycling programs. The second common component is a comprehensive education program. Education initiatives targeting the general population, tourists, schools and businesses appear to have an effect in slowing or reversing both waste generated and disposed. Continuous, multi-faceted approaches to education initiatives reinforce waste reduction objectives.

[1] http://cmedis.commerce.state.nc.us/countyprofiles/

The above counties decreased tons disposed despite increases in population, building activity or tourism. The progress in reducing waste ranged from 9 to 45 percent.

In the following table, seven counties decreased and six increased their FY 05-06 reduction goal. Non-attainment of original goals may prompt the dramatic (22.96 to 13.00 percent) goal decreases between 1997 and 2000. The 2003 plans show less decline (10.33 percent). While the goals show an overall decrease, anticipated tons increased primarily due to Wake County's goal increase from 1 to 10 percent.

Comparison of 25 County Goals and Accompanied Waste Reduction

COUNTY	4/00 Population *	7/05 est. Population *	Population Change	FY 05/06 GOAL 2000 Plan	FY 05/06 GOAL 2003 Plan	Anticipated Tons Reduced ** 2000 Plan	Anticipated Tons Reduced ** 2003 Plan
BUNCOMBE	206,310	218,677	12,367	0.40	0.30	6,085	4,563
CABARRUS	131,063	150,447	19,384	0.05	0.05	1,192	1,192
CHATHAM	49,329	55,689	6,360	0.35	0.35	2,738	2,738
CLEVELAND	96,290	99,523	3,233				
CRAVEN	91,523	94,067	2,544	0.40	0.22	1,252	688
CUMBERLAND	302,963	315,122	12,159	0.05	0.10	748	1,496
DURHAM	223,314	243,322	20,008	0.05	0.05	1,230	1,230
EDGECOMBE	55,606	53,596	-2,010	0.05	0.05		17
FORSYTH	306,067	325,957	19,890	-0.05	-0.05		
GASTON	190,301	194,077	3,776	0.03	0.01	139	46
GREENE	18,974	20,664	1,690	0.03	0.03	62	62
GUILFORD	421,048	446,189	25,141	0.11	0.15	3,402	4,639
HOKE	33,646	39,446	5,800	0.05	0.10	357	713
JONES	10,403	10,347	-56	0.10	0.10		
MECKLENBURG	695,370	789,940	94,570	0.16	0.14	18,611	16,285
NEW HANOVER	160,327	176,575	16,248		0.05		999
NORTHAMPTON	22,086	21,903	-183	0.10	0.10		
PERQUIMANS	11,368	11,890	522	0.12	0.02	77	13
PERSON	35,623	38,118	2,495	0.05	0.03	153	92
POLK	18,324	19,562	1,238	0.32	-0.05	487	
ROBESON	123,245	128,970	5,725	0.30	0.30	2,113	2,113
ROCKINGHAM	91,928	93,370	1,442	0.15	0.17	266	302
SURRY	71,219	73,717	2,498	0.10	0.10	307	307
WAKE	627,866	744,024	116,158	0.01	0.10	1,429	14,287
WATAUGA	42,693	43,497	804	0.06	0.06	59	59
SUM	**4,036,886**	**4,408,689**	**371,803**			**40,708**	**51,843**
AVERAGE (blank cells = Goal of zero)				**13.00%**	**10.33%**	**2,143**	**2,592**

* Office of State Planning 10/19/04 NOTE: Tons/person/yr. based on FY 02-03 Annual Reports

**Formula = Positive population change multiplied by 1.23 tons/person/year less positive Goal percentage

Finite local resources limit programs and services. This could result in more counties shifting recycling and waste reduction responsibility from the public to the private sector.

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Key Findings

- Measurable and steady progress toward waste reduction initiatives do not appear evident. Progress is questionable with cursory long-term planning and numerous Plans reactive rather than progressive.
- Data limitations and lack of standardized full cost accounting procedures preclude accurate program cost comparisons.
- Current funding levels do not result in increased waste reduction initiatives and effective diversion numbers.

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

CHAPTER 3
LOCAL GOVERNMENT ASSISTANCE

Solid Waste Management Trust Fund

This chapter details for FY 03-04 the activities and expenditures of the Solid Waste Management Trust Fund. The Division of Pollution Prevention and Environmental Assistance (DPPEA) in the Department of Environment and Natural Resources administers the trust fund, created by the Solid Waste Management Act of 1989 (SB 111). It is funded by a portion of the revenues from a fee on the sale of new tires, a tax on virgin newsprint, and an advanced disposal fee on white goods (appliances). Additional revenues can come from appropriations and contributions. The purpose of the trust fund is to support a range of solid waste management activities including: technical assistance to local governments, businesses, and other entities on solid waste issues; public educational programs; research and demonstration projects; and recycling market development (G.S. 130A- 309.12).

As noted in the table below, the Solid Waste Management Trust Fund received $951,377 in revenues in FY 03-04. When added to the beginning balance on July 1, 2003 of $2,131,232, a total of $3,082,609 was managed in the trust fund for FY 03-04. Actual expenditures were $892,708, leaving a fund balance at the end of FY 03-04 of $2,189,901. However, a total of $1,207,927 of that balance was encumbered for standing grant contracts already awarded and for which funding had not been fully disbursed (grant contracts are paid on a reimbursement basis). The unencumbered balance at the end of FY 03-04 was $981,974. An additional set of grant contracts were being encumbered at the end of the fiscal year, which further reduced the available balance.

Trust Fund Expenditures

	Total FY 03-04
Beginning Balance	$ 2,131,232
+ Revenue	$ 951,377
- Expenditures	$ 892,708
Ending Balance	$ 2,189,901
Encumbrances	$ 1,207,927
Unencumbered funds on 6/30/04	$ 981,974

Revenue Sources

	Total FY 03-04
Tire Tax	$ 569,845
White Goods ADF	$ 332,888
Newsprint Tax	$ 49
Appropriations	$ 0
Contributions and Misc.	$ 48,595
Total Revenues	$ 951,377

Trust Fund Revenue Sources

Trust fund revenues in FY 03-04, as indicated in the table above, came from four of five possible revenue sources identified in the General Statutes. Activity from each source is described below:

- **2% Tire tax** – Trust fund revenues from the tax on the sale of new tires accounted for $569,845, an increase of almost 5% from FY 02-03. Tire revenue accounted for close to 60 percent of total trust fund revenues for FY 03-04.
- **White Goods Tax** – Proceeds from the advanced disposal fee (ADF) on white goods accounted for $332,888 or just over 35 percent of total revenues for FY 03-04. White goods proceeds were down 6.6 percent from FY 02-03.
- **Virgin Newsprint Tax** – North Carolina newspaper publishers that fail to meet state-required purchasing goals for recycled content newsprint must pay a $15 per ton tax on the virgin newsprint they consume. The law allows wide exemptions for companies 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 03-04, $49 was received from the virgin newsprint tax. Compliance with the law has been consistent - in 10 years, the annual revenue from the newsprint tax has never been higher than $3,000.
- **General Appropriations -** When the Trust Fund was established in 1989, a one-time appropriation of $300,000 provided an initial fund balance. Since that time, there have been no further appropriations.
- **Contributions to the Trust Fund and Miscellaneous Revenues –** DPPEA continued a recycling promotion campaign in FY 03-04 that entailed a cost-sharing partnership with local governments and private sector contributors. Local governments contributed $25,995 toward the campaign. Federal

funds accounted for $12,000 in contributions and other state agencies provided $10,600 in resources for the program. The list of Recycle Guys partners is provided in Attachment A to this report.

Trust Fund Expenditures

FY 03-04 was an active year for grant-making and waste reduction outreach. Trust fund resources were also used to continue delivery of technical assistance to North Carolina communities, recycling businesses, and waste generators. These activities are three of the explicit purposes noted in G.S. 130A-309.12, and are described in detail below.

- **Community Waste Reduction and Recycling Grants**

The Community Waste Reduction and Recycling Grants (CWRARGs) are a standard annual grant cycle that DPPEA offers to local government and non-profit recycling programs. The cycle provides support for specific projects that enhance the effectiveness of local and non-profit recycling efforts. The CWRARGs usually include targeted grant categories designed to increase activity in certain program areas or to increase the recovery of certain commodities.

Because of an available large balance in the trust fund, DPPEA held two separate CWRARG grant cycles in FY 03-04, one in the fall of 2003 and the other in the spring of 2004. Both were initiated with a Request For Proposals circulated to local governments and non-profit agencies involved in waste reduction. Funding categories included backyard composting, buy recycled activities, and general recycling activities.

In the first round, 23 proposals were received and evaluated for funding using a "blind vote" scoring process with specific point criteria. Twenty-two proposals were selected for funding totaling $355,595 in grant awards. In the second round, 19 proposals were received and 16 projects funded for a total of $258,792 (one of these projects was combined with one funded in the Recycling Business Assistance Grants, described below). Details on the grantees and projects are provided in Attachment B.

In addition to the CWRARG cycles, DPPEA conducts a related, ongoing request for proposals to develop "Swap Shops," which are community reuse centers open to the public. This open grant round resulted in one award in FY 03-04 to the city of Raleigh.

- **Business Recycling Grants**

Similarly to the community-related grants, DPPEA conducted two grant cycles in FY 03-04 targeted at improving markets through the expansion of recycling businesses statewide. The strength and capacity of the private recycling infrastructure is vital to diverting materials from disposal. Many recycling businesses need a small boost in financial assistance to increase their ability to handle more and different kinds of recyclable materials. The FY 03-04 Business Recycling Grants were designed to help companies move to a higher level of material-handling capacity, which in turn offers new market opportunities to local government recycling programs and waste generators.

The first Business Recycling Grant cycle in the fall of 2003 attracted 34 proposals. Eighteen proposals were awarded a total of $450,000 in funding. Two awards were later turned down by the grantees when their project plans changed, leaving 16 total awards. In the spring grant round, a smaller amount of funding was offered, and a fewer number of proposals were received. Of the nine projects submitted, four were selected for funding for a total of $87,500. Details on the grantees and their projects are described in Attachment C.

- **Recycling Guys Campaign**

One of the greatest waste management challenges in North Carolina is increasing household participation in local government recycling programs. Low participation harms the efficiency of local recycling programs and fails to supply materials needed by recycling businesses.

To raise participation rates, DPPEA continued the successful "Recycle Guys" educational campaign in FY 03-04, completing an ongoing broadcast cycle for the advertisements that prove very popular with children. A special effort was made to reach the Latino community through a short-term broadcast campaign on a Spanish-speaking television channel in the Triangle area. In addition, DPPEA started targeting a slightly older demographic with new ads more appealing to teen and young adult audiences.

DPPEA also initiated a number of other efforts to educate and promote recycling in new ways:

- DPPEA used cinema ads in key communities around the state to increase public awareness of different aspects of recycling – for example, the number of jobs created by recycling in North Carolina and the products that recyclable materials are turned into.
- DPPEA also created and distributed four new posters that feature the Recycle Guys characters promoting recycling, source reduction, composting, and buying recycled products.
- To further assist and integrate the Recycle Guys characters into local programs, DPPEA produced and sent out labels for use on drop-off containers across the state.
- New promotional materials – stickers, tattoos, and pencils were produced and given to local recycling coordinators to help promote local programs.
- DPPEA targeted recycling participation in heavy tourist areas along the coast by distributing refrigerator magnets with recycling information to hotels and rental units.

These efforts are designed to spread the recycling outreach program into new areas and new media, and provide local programs with needed materials and assistance. DPPEA held a series of workshops in the summer of 2004 to train local recycling coordinators how to use the Recycle Guys materials effectively, and to preview a new promotional campaign being developed for next fiscal year.

Technical Assistance Activities

The general statutes direct DPPEA use the trust fund to promote waste reduction and recycling generally, and specifically provide technical assistance to local governments and build recycling markets. The following section lists activities that DPPEA pursued in FY 03-04 to accomplish these requirements:

- **Waste Reduction Partners Program**

The Waste Reduction Partners (WRP) is a highly successful program using retired engineers and business professionals to provide environmental technical assistance to companies and local governments in western North Carolina. In a continuation of funding from the three previous years, DPPEA provided $25,000 to WRP in FY 03-04 in support of industrial solid waste audits and other recycling activities. With this funding, WRP helped western North Carolina businesses and other entities divert 14,800 tons of solid waste from landfills. The estimated pollution prevention savings for businesses served by Waste Reduction Partners in FY 03-04 totaled $1.11 million. During the fiscal year, WRP conducted solid waste reduction work in 19 different western counties.

- **Staff Support**

To accomplish the technical assistance, public education, and recycling market development requirements in the general statutes, the trust fund was used in FY 03-04 to support staff positions in the DPPEA. A total of $338,931 was expended to pay for salaries, benefits and some limited operational support. These positions are described below:

Recycling Market Development Specialist - 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 is responsible for strengthening recycling capacity for secondary materials collected throughout the state. Among other duties, it manages the recycling markets directory required by state statute.

Recycling Market Development Specialist - This position is housed part-time with the N. C. Department of Commerce and is responsible for working with local and state economic developers to recruit recycling businesses to North Carolina. This position successfully facilitated the location of two new recyclers in the state in FY 2004, and provided technical assistance to numerous existing companies.

Recycling Market Development Specialist - This position focuses on building the recycling infrastructure for the diversion of construction and demolition debris and wood waste, which together constitute one third of the state's waste stream. In addition to managing grants and conducting other

technical assistance, this position produces the *Recycling Works* newsletter, which keeps recycling companies and community recycling programs abreast of market developments, material prices, and news about grants and available assistance.

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 in North Carolina.

Waste Management Analyst - This position is responsible for providing technical assistance to local governments on their waste reduction programs, including solid waste planning and full cost accounting (statutory requirements for local governments). The position also manages recycling program data from state-mandated local waste reduction reports, which in turn allows completion of this report.

Waste Management Analyst (DPPEA) – This position manages the WasteTrader waste exchange service, provides direct assistance to commercial and industrial waste generators, helps manage grants and the local reporting process, and is responsible for many training and outreach activities to local recycling programs.

Organics Recycling Specialist (DPPEA) - This position provides technical assistance to local governments, recycling businesses, waste generators, and the general public on the reduction and composting of organic waste streams, including yard wastes, which are banned from disposal by statute.

- **Graduate Intern Program**

Through a contract with the Water Resources Research Institute (WRRI) in the University of North Carolina, DPPEA hires student interns for a full year. Student projects in FY 03-04 included: 1) continuation and expansion of the Recycle Guys campaign, 2) development of best management case studies on local recycling programs, 3) promotion of the use of re-refined oil and other recycled products by state and local agencies, and 4) assistance with the development of recycling markets and improvement of local programs.

Product Stewardship Initiatives

"Product Stewardship" is a growing movement by state and local governments to increase manufacturer responsibility for the environmental impacts of their products, including the diversion of those products from disposal to recycling. Greater manufacturer responsibility for end-of-life products will reduce cost and tax burdens on state and local governments. In FY 03-04, North Carolina participated in product stewardship initiatives by supporting the activities of the national Product Stewardship Institute and by helping lead a multi-state effort to encourage producer responsibility for beverage containers.

Lightweight Aggregate Project

The disposal of coal ash and other industrial by-products is becoming a more difficult issue, and one that contributes to the increase in waste disposal in North Carolina. To help address this problem, DPPEA supported in FY 03-04 the work of the N. C. State University Minerals Research Laboratory to develop a value-added lightweight aggregate product from coal ash, organic bio-solids, and other materials. This project is conducted in partnership with private industry and is focused on demonstrating the effectiveness of a production-level facility for the lightweight aggregate product.

Publications and Outreach Efforts

DPPEA used trust fund resources in FY 03-04 for a number of technical assistance and outreach activities, including: printing and distributing the *Recycling Works* newsletter and other fact sheets; conducting workshops and sessions at conferences of the Carolina Recycling Association and N. C. chapter of the Solid Waste Association of North America; and travel to provide technical assistance to local governments and trust fund grantees. Normally, DPPEA would use appropriated funds for these purposes but were unable to given the state budget shortfalls.

Temporary Assistance

North Carolina statutes require solid waste management annual reports from all counties and municipalities, which in turn provides data for the State Annual Solid Waste Management Report. In addition, N. C. statutes require the keeping of a directory of recycling markets. DPPEA used temporary labor in FY 03-04 to manage the large set of data required for both of these tasks, and to increase the amount of technical assistance resources available to local governments.

Planned Expenditures For FY 04-05

In FY 04-05, the Solid Waste Management Trust Fund will be used to provide technical assistance to local government recycling programs and to recycling businesses statewide. As part of that effort, DPPEA will conduct both a community-based and recycling business grant cycle, helping directly expand collection and processing capacity for recyclable materials. A series of workshops is planned on electronics recycling, increasing plastic bottle collection, and promoting greater beneficial use of landfill gas. DPPEA will further work to increase the reach of the Recycle Guys campaign, and develop a new promotion campaign designed to encourage a commitment to recycling by teen-agers and young adults. The trust fund will continue to support the effective Waste Reduction Partners program in western North Carolina, and help North Carolina participate in national coalitions seeking to promote product stewardship.

All questions regarding the North Carolina Solid Waste Management Trust Fund may be directed to Scott Mouw, Chief, Community and Business Assistance Section, Division of Pollution Prevention and Environmental Assistance, at 919-715-6512.

Attachment A: Trust Fund Revenue Sources

The North Carolina Solid Waste Trust Fund received 95 percent of its revenues in FY 03-04 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 described below:

Scrap Tire Tax - During this reporting period (July 1, 2003 - June 30, 2004), a 2 percent fee was levied on the purchase of new tires in North Carolina. The tire tax allocation is as follows:

- 68 percent of revenues are distributed to the counties on a per capita basis to pay for the proper management of discarded tires.
- 27 percent of revenues are credited to the Scrap Tire Disposal Account (administered by the Solid Waste Section) for local government grants and nuisance tire site cleanup.
- 5 percent of revenues are credited to the Solid Waste Management Trust Fund (administered by the Division of Pollution Prevention & Environmental Assistance).

White Goods Tax - During this reporting period (July 1, 2003 - June 30, 2004); a $3 fee was levied on the purchase on all appliances. The white goods tax allocation is as follows:

- 72 percent of revenues are distributed to the counties on a per capita basis to pay for the proper management of discarded white goods.
- 20 percent of revenues are credited to the White Goods Management Account (administered by the Solid Waste Section) for grants to local governments for managing discarded white goods.
- 8 percent of revenues are credited to the Solid Waste Management Trust Fund (administered by the Division of Pollution Prevention & Environmental Assistance**)**

FUNDING PARTNERS FOR THE FY 03-04 RECYCLE GUYS CAMPAIGN

The Solid Waste Trust Fund received an additional approximate five percent of its revenues from partners and other funding sources supporting the Recycle Guys educational campaign, as detailed below.

Partner Name	**Amount Given**
Mecklenburg County	$5,000
Town of Cary	$5,000
City of Raleigh	$5,000
Wake County	$4,000
Davidson County	$2,500
City of Burlington	$2,500
Orange County	$1,000
New Hanover County	$995
NC Dept of Transportation	$10,000
UNC-Charlotte	$600
US EPA	$12,000
TOTAL	$48,595

Attachment B: 2004 Community Waste Reduction and Recycling Grant Projects

GRANTEE	AMOUNT	GRANT DESCRIPTION
Buncombe County	$20,000	Buncombe County will improve and expand its household hazardous waste program and construct a permanent electronics recycling facility at its landfill.
Chatham County	$5,000	Chatham County will work with the National Soft Drink Association to increase recycling in its public school system and purchase recycling containers to help that effort.
City of Charlotte	$23,500	The city of Charlotte will develop and implement its "Mark of Distinction" education and outreach program to increase recycling participation in minority neighborhoods.
City of Conover	$12,735	The city of Conover will purchase a mobile recycling trailer and modify an existing recycling truck.
City of Durham	$24,550	The city of Durham will purchase special event recycling bins and develop a Latino outreach program.
City of Greensboro	$12,960	The city of Greensboro, in conjunction with UNC-G, Guilford County, and the City of High Point, will hold a one day electronics collection event in the Spring of 2005.
City of Raleigh	$25,000	The city of Raleigh will adopt the National Soft Drink Association's radio and billboard recycling ads designed to increase public awareness and commitment to recycling.
Dixie Classic Fairgrounds	$20,000	Dixie Classic Fairgrounds will purchase a 4 wheel drive tractor with front end bucket to improve its composting operation.
Edgecombe County	$12,500	Edgecombe County will purchase containers and implement a mixed paper recycling program.
Franklin County	$16,000	Franklin County will expand its recycling program by including all county office buildings in its mixed paper collection project.
Gaston County	$18,000	Gaston County will create a billboard advertising campaign to raise residents' awareness about recycling facilities available in the county.
Greene County	$17,000	Greene County will purchase containers and conduct public outreach to increase the amount of recyclables received at its convenience centers.
Habitat For Humanity of Forsyth County	$15,000	Habitat for Humanity will purchase a forklift, used baler, and other materials to support a wood recycling program and to recycle waste generated in its operations.
Hyde County	$11,145	Hyde County will make improvements to its convenience sites and work to improve participation in curbside recycling.
Iredell County	$22,000	Iredell County will implement a school recycling program, work to increase participation in curbside recycling, and enhance the current aluminum recycling program.
Iredell County	$4,500	Iredell County will implement a backyard composting education and bin distribution program.
Jackson County	$25,000	Jackson County will add four containers at recycling centers to expand collection of recyclable paper.
Keep Wayne County Beautiful	$25,000	Keep Wayne County Beautiful will implement a paper recycling program in all 31 county schools.
Land-of-Sky Regional Council	$25,000	Land of Sky will help Buncombe County and City of Asheville Schools set up a school recycling program & conduct related outreach activities.
Lee County	$21,275	Lee County will implement a new educational program and expand some waste reduction activities to public buildings in the county.

GRANTEE	AMOUNT	GRANT DESCRIPTION
Madison County	$11,365	Madison County will add cardboard collection to its existing services and develop a public education program.
McDowell County	$3,600	McDowell County will conduct a Master Composter Course for the county's convenience center staff. The county will also sponsor an Earth Day celebration and compost bin giveaway.
Mecklenburg County	$25,000	Mecklenburg County will develop and distribute 50,000 Wipe Out Waste guides designed to increase public awareness of recycling opportunities.
Mecklenburg County	$15,000	Mecklenburg County will implement a television, radio, and news campaign to educate businesses about their commercial recycling ordinance and decrease the amount of paper going to the landfill.
New Hanover County	$25,000	New Hanover County will begin recycling construction and demolition waste at the county landfill, using the grant to purchase signage and a loader, and hire manual laborers to sort materials.
Orange County	$25,000	Orange County will purchase a crusher to reduce glass recycling costs.
Orange County	$10,000	Orange County will adopt the National Soft Drink Association's radio and billboard recycling ads.
Pasquotank County	$5,000	Pasquotank County will test asphalt paving made with recycled glass at a county collection site.
PCG SWM Commission	$24,520	The PCG Commission will implement a mobile home recycling program for the three county region.
Rutherford County	$4,900	Rutherford County will send recycling brochures to county households, erect bulletin boards, and publish a video to promote recycling.
Scotland County	$20,000	Scotland County will construct a permanent HHW facility and implement a paint, oil, battery and antifreeze collection program.
Town of Hope Mills	$4,140	The town of Hope Mills will purchase recycled content containers and benches labeled to educate the public about green purchasing.
Town of Kernersville	$3,780	The town of Kernersville will create a purchasing manual and conduct training for purchasers, businesses, and residents to improve the buy-recycled program.
Town of Kernersville	$23,107	The town of Kernersville will upgrade from recycling bins to carts, present a composting workshop, electronics recycling day event, develop a pallet exchange program and print a residential brochure in English & Spanish.
Town of Woodfin	$13,850	The town of Woodfin will establish a curbside recycling program.
Tyrrell County	$3,960	Tyrrell County will make general physical improvements on and increase education about the county's recycling program.
Wayne Opportunity Center	$25,000	Wayne Opportunities Center will support the county's new school recycling program and commercial recycling efforts with expanded processing capacity.

Attachment C: 2004 Recycling Business Grant Projects

GRANTEE	AMOUNT	GRANT DESCRIPTION
CompuTel IG	$20,000	CompuTel will purchase a truck with a hydraulic tailgate to increase its coverage area and provide a more rapid response to its clients.
Confidential Shredding	$20,000	Confidential Shredding will purchase a mobile shredding truck and customer security containers to expand paper recycling collection and document destruction services by offering on-site paper shredding services to customers.
Curbside Management	$30,000	Curbside Management will purchase collection bins, refurbish a truck, and install a floor level sort line to implement a paper and cardboard recycling collection program for commercial customers.
ECVC	$17,500	ECVC will install and utilize a trommel screen with an outside drive to remove contaminants from mixed glass cullet.
Edwards Custom Sawmilling & Lumber	$7,500	Edwards will purchase a 4-sided planer and related equipment to process urban old growth timber into lumber to be used by cabinet shops, flooring manufacturers, and custom furniture manufacturers.
Elizabeth City Glass	$20,000	Elizabeth City Glass will purchase and install capital equipment to support a pre-cast cement production process that will use C&D pane glass, ceramics, and post-consumer container glass as feedstock aggregate for a variety of end-use products.
Ensley Corp.	$25,000	Ensley Corporation will construct a concrete storage pad and a ramp from the facility loading docks to the outside ground to enable expansion of HDPE plastic recycling.
Habitat ReUse Center- Wake County	$35,000	The Habitat Reuse Center will expand its deconstruction services and focus on commercial buildings. (NOTE: Habitat's Business Recycling grant is combined with a CWRAR grant)
Inter-Faith Food Shuttle	$25,000	Inter-Faith Food Shuttle will purchase a truck to expand its food collection services from Triangle area grocery stores.
Jackson Paper Manufacturing	$12,500	Jackson Paper will study paper-based poultry bedding vs. wood based litter to see the differences in modeled precipitation and associated nitrogen and phosphate leachate and run-off.
Kamlar Corp.	$25,000	Kamlar Corporation will purchase a front-end loader with solid tires and a clamshell-clamping bucket to expand wood waste recycling.
McGill Environmental Systems	$45,000	McGill will establish the company's third major composting facility in N.C. in Pitt County (NOTE: This grant turned down when McGill's business development plans changed)
Oaks Unlimited	$30,000	Oaks Unlimited will install equipment to mill pallet deckboards into pre-finished flooring ready for installation. The finished product will be boxed and ready for distribution.
Orange Recycling Services	$35,000	ORS will install a semi-automated "mini MRF" to assist in sorting commingled containers, and separately commingled paper.
Paper Stock Dealers - Raleigh	$20,000	Paper Stock Dealers will purchase capital equipment to implement a corrugated cardboard and office paper recovery program for businesses and schools.
Preserve Business Systems	$20,000	PreServe will expand its post industrial recycled plastic grinding capacity by purchasing a large capacity and heavy duty grinder and supporting equipment.
Reily Recovery Services, Inc.	$25,000	Reily Recovery Services will purchase a flatbed truck with hydraulic boom and forklift attachment; and acquire and distribute 100 specially designed collection boxes for recycled vinyl siding.

GRANTEE	AMOUNT	GRANT DESCRIPTION
Scotland Neck Heart Pine	$20,000	Scotland Neck Heart Pine will purchase and install an in-line gang ripsaw for re-dimensioning sawn planks recovered from old buildings.
Shimar Recycling	$20,000	Shimar will install a horizontal baler to assist in their ability to process a greater amount of material more economically and efficiently.
Synergy Recycling	$20,000	Synergy will purchase a 26" box truck with lift-gate to assist in the "milk run" collection of electronics from customers around the state.
Union Gypsum	$45,000	Union Gypsum will add a new building and equipment to process gypsum drywall, poultry litter, and sawdust.
Weyerhaeuser	$35,000	Weyerhaeuser will install equipment to expand processing capacity for commercial office paper and cardboard. (NOTE: Grant turned down when Weyerhaeuser implemented alternative paper recovery plans).

CHAPTER 4
STATE AGENCY WASTE REDUCTION EFFORTS

State law and executive order directs state agencies to use products containing recycled materials. Executive Order 156 was signed in 1999 in support of N.C. Project Green, the state environmental sustainability initiative, and was an updating and strengthening of the original initiative of Executive Order 8, signed in 1993.[2] Purchasing recycled and other environmentally preferable products improves 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 content products.

North Carolina state government has continued to make progress toward environmental sustainability by offering recycled and environmentally preferable products at affordable prices on state contract. Currently, over 20 categories are on term contract that offer products with recycled content materials, and several more products available offer some sort of environmentally preferable attribute, including recycled content packaging or energy efficiency. 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 is available at:
www.doa.state.nc.us/PandC/recycled.htm

This chapter 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 fiscal year 2004. It compiles purchasing reports required from 26 state government department and offices, 16 constituent institutions of the University of North Carolina, 57 community colleges, and 96 local public school administrative units. In FY 03-04, reports were received from 88 percent of agencies (195 out of 221), 2 percent more than the previous fiscal year. Most of the agencies that did not report have not complied with reporting requirements for at least the past four years. This data fluctuates somewhat each year. For example, twelve agencies that did not report last year reported this year and eight agencies that usually report did not report this year. All reporting was conducted online, saving paper and postage.

The N.C. Division of Pollution Prevention and Environmental Assistance (DPPEA) is the agency charged with compiling data from agency reports and publishing this summary. Copies of this and past reports are available on-line at **www.p2pays.org/epp** or by calling (919) 715-6505 or (800) 763-0136.

Purchases of Recycled Products

Paper and Paper Products. Reported agency purchases of all office paper and paper products (recycled and non-recycled) in FY 03-04 totaled $43,733,680. Last year's paper purchases were reported at $41,284,807, which reflects a six percent increase in overall paper purchases from the previous year. Over the last five years, state paper consumption has maintained a steady rate, as electronic communication has grown and spending constraints have leveled off.

Recycled paper purchases were up 3.5 percent from the previous fiscal year and totaled $33,555,918. Recycled paper constituted 77 percent of total paper purchases reported, a two percent decrease from last year. True purchases of recycled content paper and paper products probably are not apparent because some purchasers were not aware that it was the only paper on state term contract. This year the decrease reflects the virgin paper that is now back on state term contract and available at a lower price. The recycled content paper is a little over a dollar more than virgin paper, but the current contract also includes a higher delivery charge for recycled content paper. Although waste reduction techniques, such as double-sided printing and using one-sided pages for fax machines could easily neutralize the difference, this setback could prove to be significant in reaching goals set by executive order.

[2] Full text of No. 156 is available online at www.p2pays.org/epp/reports.asp.

This is the third year in which agencies failed to meet the goal set forth by Executive Order 156 [3] "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." Unfortunately, due to some of the issues discussed, recycled content office paper only represented 79 percent of the total office paper purchases, which is a 5 percent decrease from last year.

More than half of the miscellaneous paper purchased, including items such as legal pads, file folders, labels, and continuous feed forms contain recycled content materials. This is a category that has remained consistent for the last seven years. Education could easily improve the numbers, especially considering many of these products are available on term contracts with recycled content. More positively, towel/tissue paper achieved an exceptionally high percentage of 91 percent containing recycled content, which is a 3 percent increase from last year.

Twenty-seven agencies succeeded in reaching the 100 percent goal this fiscal year for all paper purchases, four more than last year. This is a slowly climbing number that hopefully represents an overall effort to reach compliance under the executive order. Another 33 agencies achieved a recycled content paper purchasing rate of 95 percent or higher, and 45 percent of all agencies reporting bought recycled paper for 90 percent of their paper usage needs. About a quarter of reporting agencies purchased all their office paper with recycled content, and over a third bought all recycled content towel/tissue products.

As another element of recycled paper usage, agencies also report on their specification of recycled content products in contracted work. Approximately 56 percent of agencies consistently specified recycled content in contracted services last fiscal year. Reported spending on outside print orders was $15,161,323, a two percent increase from the previous year. Of the reported total, 51 percent was on recycled paper, down from 65 percent last year. This decrease in recycled content paper used on print jobs could reflect the cost differential from recycled content to virgin paper.

Figure 1. State Agency Total Purchases of Recycled Paper and Paper Products Fiscal Years 1994-2004

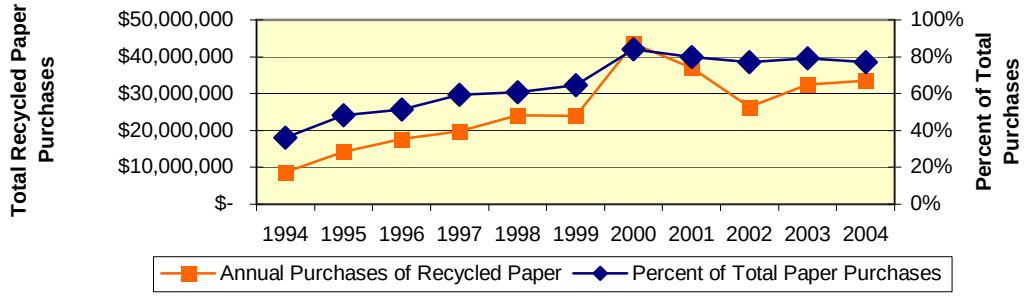


Figure 1 illustrates the trend in overall dollar amounts and percentages of recycled paper purchases over the past eleven fiscal years, including this year's increase in overall recycled content paper purchases. The data indicates a need to enhance efforts to achieve the 100 percent goal across all agencies. A renewed emphasis and commitment from top management in directing agencies to meet the statutory and executive goals would help the accomplishment of the goal. There is an obvious need for a targeted campaign of outreach to agencies with a high level of virgin paper purchasing.

Policy and Administrative Support This year, agencies were again asked to report if they had buy-recycled policies or goals in place. A mere 38 percent of the reporting agencies responded positively to

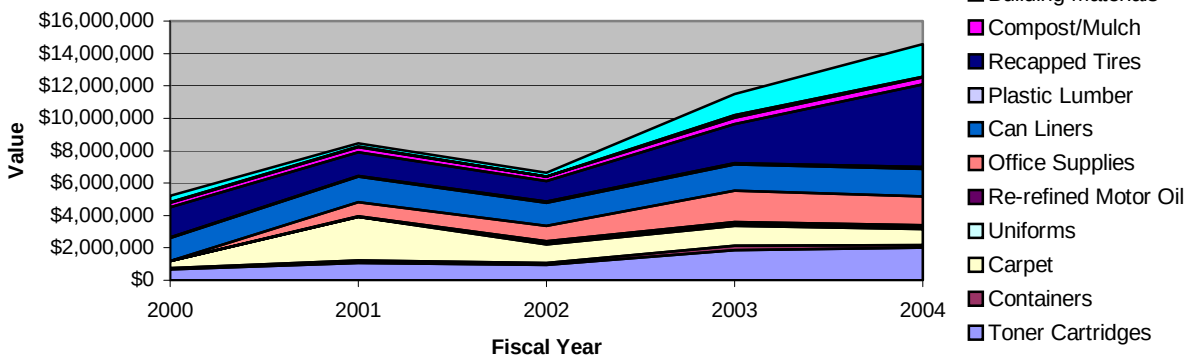
[3] G.S. 143-58.3 established a goal that at least 50 percent of all agency expenditures for paper and paper products are comprised of recycled product purchases. Executive Order No. 8 set a goal for agency expenditures of recycled paper and paper products of 65 percent in Fiscal Year 1998. Executive Order No. 156 reestablished the goal at 100 percent by the Year 2001.

this question, which reflects a slight increase from last year, perhaps from the new agencies that reported. Agencies are also reporting that fewer administrators are communicating the importance of purchasing recycled content products. Consistent with past year's data, only slightly more than half of the agencies report receiving this message, and this percentage is on a continual decrease since 1997. Lead coordinators for buy-recycled efforts hold steady at less than half of the reporting agencies having this kind of administrative support. The general statutes or executive order does not require agencies to develop a policy, but it could be the first step to improving our State's efficiency in recycled content product purchases. Agencies are responsible for purchasing recycled content products, as well as designating a lead coordinator. Executive Order 156 requires administrator encouragement, which is a key component to a successful recycled content procurement program. Examining these factors could be a way to increase participation significantly.

Non-Paper Products Agencies reported spending $14,593,230 on non-paper recycled products in FY 03-04, up 27 percent from the previous year's expenditures. This number continues to increase as purchasers become more educated about the products they buy, and as the array of recycled products increase and become more available on term contracts and through vendors. Examples include remanufactured laser toner cartridges, plastic can liners, recapped tires, plastic lumber, compost and mulch, re-refined motor oil, carpet and uniforms.

Total expenditures of the recycled non-paper products reflect numbers similar to last year. They are illustrated below in **Figure 2**. The size of the colored categories represents the total dollars of purchases in that category and the height in that fiscal year represents total purchases of non-paper recycled products. Reports revealed minor fluctuations in most categories with the exception of building materials, which decreased from $150,296 last year to $32,414 this year. There is nearly a 60 percent increase in the "other" category though, which may reflect some of these expenditures. Re-refined motor oil purchases were also down by 34 percent, which could be a result of some changes over the past fiscal year in the contract. This contract is going out for bid again in FY 04-05 and will hopefully yield a stable, cost efficient, reliable vendor that can maintain the contract for a more significant time.

Figure 2. Agency Purchases of NonPaper Recycled Content Products
Fiscal Years 2000-2004



Other Environmental Purchasing Efforts. Some state agencies excelled beyond buying recycled, and now tackle more sustainable issues like environmentally preferable purchasing (EPP). EPP, or green purchasing, includes a host of attributes considered to decrease the impact of purchases on the environment. For example, many agencies, including the University of North Carolina at Chapel Hill, North Carolina State University, Fayetteville Technical Community College, and the Department of Transportation, started green building initiatives for new facilities or added greening energy and water elements in older buildings. Green buildings require architects and contractors to consider many things from building placement, water and energy use, and more environmentally friendly products.

Other initiatives in state government include the vast efforts of Motor Fleet Management to increase environmental initiatives. Of Motor Fleet's nearly 8,000 vehicles, over 3,300 vehicles are alternative fuel cars and 46 are hybrid cars. Along with E85 (a mix of ethanol and gasoline for the alternative fueled cars), motor fleet purchases compressed natural gas and propane, and uses re-refined motor oil in all fleet vehicles.

Conclusion

The purchase of recycled content products is a well-established practice in state government, 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 to full compliance with the 100 percent recycled content paper goal. The accomplishment or near accomplishment of the goal by nearly half of the reporting agencies indicates that it is feasible, given top management support and increased overall awareness of requirements and products.

With a few significant purchasing decisions, several key agencies could substantially increase the overall performance of state government in recycled paper purchasing. Converting the current $10.2 million in virgin paper purchases to recycled paper will allow North Carolina 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 North Carolina achieve its environmental goals by reducing natural resource, energy and water usage, and preventing air and water pollution. For example, re-refined motor oil meets the exact specifications of virgin oil, engine manufacturer's support it's use, and it is on state contract at comparable cost to virgin oil. 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 in both Executive Order 156 and general statutes.

I. Reinvigorate 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 the ability for DPPEA 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.

II. 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 content product procurement. Administrative support is also crucial to the successful implementation of agency sustainability plans under N.C. Project Green that incorporate 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 will have a minimum of 30 percent post-consumer content (by FY 00-01).
- Issue and enforce internal policies, official memoranda, and formal declarations that demonstrate administrative leadership and support for buying recycled and Executive Order 156.
- Develop and implement ongoing outreach and education programs for employees and visitors and take advantage of the assistance DPPEA can offer.
- Commit to N.C. Project Green by participating in their monthly meetings and pledging to achieve its goals as part of their overall commitment to environmental sustainability.

III. Increase Procurement of Non-Paper Recycled Content Products. Outright expenditures for non-paper recycled products continue to lag behind those of paper purchases. A vast variety of products is available with recycled content materials, which is apparent from the federal government's purchasing regulations under Executive Order 13101. Their *Comprehensive Procurement Guidelines* feature over fifty items in eight categories, including paper, non-paper office, construction, landscaping, park and recreational, transportation, vehicles, and miscellaneous products (visit http://www.epa.gov/cpg/ for more

information). Purchasing a diverse array of recycled content products not only strengthens recycling and job markets in North Carolina, 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.

IV. 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 the full life cycle analysis of a product. By doing so, state agencies can begin to make purchasing decisions that will be of benefit in both the short and long term.

- 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. Utilize government programs, nonprofit organizations, and third party certifiers for assistance, including US EPA (www.epa.gov/opptintr/epp/index.htm), Green Seal (www.greenseal.org), Energy Star (www.energystar.gov), and American Forest and Paper Associations (www.afandpa.org).
- 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 Percent Recycled Paper in FY 03-04

Alamance Community College
Alexander County Schools
Appalachian State University
Ashe County Board of Education
Asheboro City Schools
Carteret County Schools
Central Piedmont Community College
Edenton-Chowan Schools
Fayetteville Technical Community College
Franklin County Schools
Guilford County Schools
Johnston County Schools
Mitchell County Schools
Northampton County Schools
Pamlico Community College
Pamlico County Schools
Pembroke State University
Pender County Schools
Piedmont Community College
Roanoke Rapids City Schools
Sampson County Schools
UNC Charlotte
UNC Greensboro
Wake Technical Community College
Wilkes County Schools
Wilson Technical Community College
Winston-Salem State University

Agencies that Failed to Report Data for FY 03-04

Administrative Office of the Courts
Alleghany County Board of Education
Avery County Schools
Bertie County Schools
Catawba County Schools
Cherokee County Schools
Clay County Board of Education
Clinton City Schools
Columbus County Schools
Dare County Schools
Edgecombe Community College
Elizabeth City State University
Harnett County Schools
Hoke County Board of Education
Kannapolis City Schools
Kings Mountain District Schools
Lenoir County Public Schools
Madison County Schools
Orange County Schools
Pasquotank County Schools
Pitt County Schools
Robeson County Public Schools
Thomasville City Schools
UNC Hospitals
Warren County Schools

CHAPTER 5
WHITE GOODS MANAGEMENT

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

Key Findings

- County governments are managing increasing numbers of white goods. County white goods programs continue to prevent the wide-scale illegal dumping of white goods by offering disposal, at no cost, to the citizen.
- A number of counties will continue to be dependent on cost over-run grants for the near future, in order to finance their operating costs. Several counties with high operating expenses should reevaluate their program.
- The number of counties requesting cost over-run grants stayed roughly the same while the amounts requested fell.
- Total money requested by counties for cost over-run grants decreased approximately 20 percent and probably is due to an increase in the value of scrap metal in overseas markets.
- Some counties appear to be slow in exploiting the rising value of their scrap metals. Counties with existing contracts and arrangements with haulers and recyclers are unable or unwilling to re-negotiate more profitable conditions.
- The revenues of the White Goods Grants Program continue to fall due to the decreasing numbers of ineligible counties.
- Cost over-run grant amounts requested are expected to swell when the present sharp increase in the value of scrap metal subsides, leading to greater financial strain on the program.
- Greater accountability by counties can ensure that white goods revenues fund white goods expenses.

This interim report is based on information supplied by counties' Annual Financial Information Reports, submitted to the Office of State Treasurer. AFIRs are due by Dec. 1. Fifty-four counties had submitted by Dec. 23, 2004. A final report will be available on the Solid Waste Section Web site, http://wastenot.enr.state.nc.us/, when the remaining counties submit their AFIRs. Aside from many AFIRs being late, many have blank or erroneous entries.

Counties that did not report as of December 23, 2004

Beaufort	Bertie	Buncombe	Burke
Camden	Carteret	Caswell	Cherokee
Chowan	Clay	Columbus	Davidson
Davie	Franklin	Gates	Graham
Halifax	Henderson	Hertford	Hoke
Hyde	Jackson	Lincoln	Mitchell
Montgomery	Moore	Nash	Northampton
Pamlico	Perquimans	Pender	Pitt
Richmond	Robeson	Rowan	Scotland
Tyrrell	Vance	Wake	Warren
Watauga	Wayne	Yancey	

Financial Update

- **The white goods management account no longer runs a large surplus**. The number of counties that forfeit their tax proceeds declined significantly while grant requests declined only slightly. In FY 98-99, 42 counties forfeited tax proceeds. However, by the fourth quarter of FY 03-04, only eight counties had forfeited their proceeds.

- The amount of forfeited funds available for redistribution dropped 75 percent in recent grant periods, at the same time that county requests for cost overrun grants have recently decreased approximately 20 percent.
- Many counties that allowed reserve funds to accrue in the past are now depleting those funds to pay for daily operations and program infrastructure.

Advance Disposal Fee

Net white goods ADF collections in FY 03-04 totaled $4,512,673.73 and dispersed as follows:

$ 3,093,284.73	Allocated for direct distribution to counties
$ 859,245.76	Allocated for white goods management account
$ 343,698.30	Solid Waste Management trust fund
$ 216,445.94	N.C. Revenue Department cost of collections
$ 2,553,991.73	Actual amount distributed directly to counties
$ 539,293.00	Forfeited by ineligible counties

Although $ 3,093,284.73 (72 percent of the net disposal fee collections) is for distribution, ineligible counties forfeited $539,293. The forfeited funds went to the white goods management account, which receives 20 percent of net collections.

White Goods Management Account

The impetus of the White Goods Management Account is to help counties whose costs exceed their share of ADF revenue. The account receives twenty percent of white goods ADF revenues. It also receives funds forfeited by counties whose surplus exceeds the threshold amount. By the end of FY 03-04, the White Goods Management Account had $1,030,414 in projected commitments and a balance of $898,588.75, which was slightly lower than the starting balance of $979,084.93. These commitments include $500,000 for grant request for the first half of the next fiscal year and $530,414 for capital improvement grant obligations. This account is used to fund counties that incur deficits in their white goods accounts and provide capital improvement funds to counties to upgrade program infrastructure. Counties received $200,119.45 in excess of the proceeds received for distribution in FY 03-04.

WHITE GOODS DISPOSAL ACCOUNT BALANCE FY 03-04

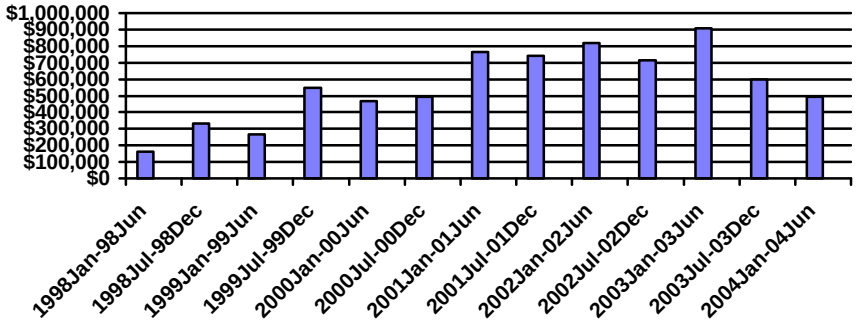
Beginning Balance (July 1, 2003)	$ 979,084.93
Funds Received during FY 03-04	$ 1,398,538.76
Cost Overrun Grants Disbursed in FY 03-04	$ 987,933.30
Capital Improvement Grants Paid in FY 03-04	$ 610,724.91
Monies Needed for Future Grant Awards*	$ 1,030,414.00
Ending Balance (June 30, 2004)	$ 898,588.75

*Includes $530,414 reserved for capitol improvement grants and $500,000 reserved for next round of overrun grants.

White Goods Management Account Grants

This graph shows total amounts of money requested by counties for cost over-run grants in recent grant periods decreased. This probably is due to the increasing value of scrap metal. Over $385,450 in grants went to 30 counties for losses incurred January-June 2004; $463,885.06 was

Increase in Total Requests for White Goods Grants

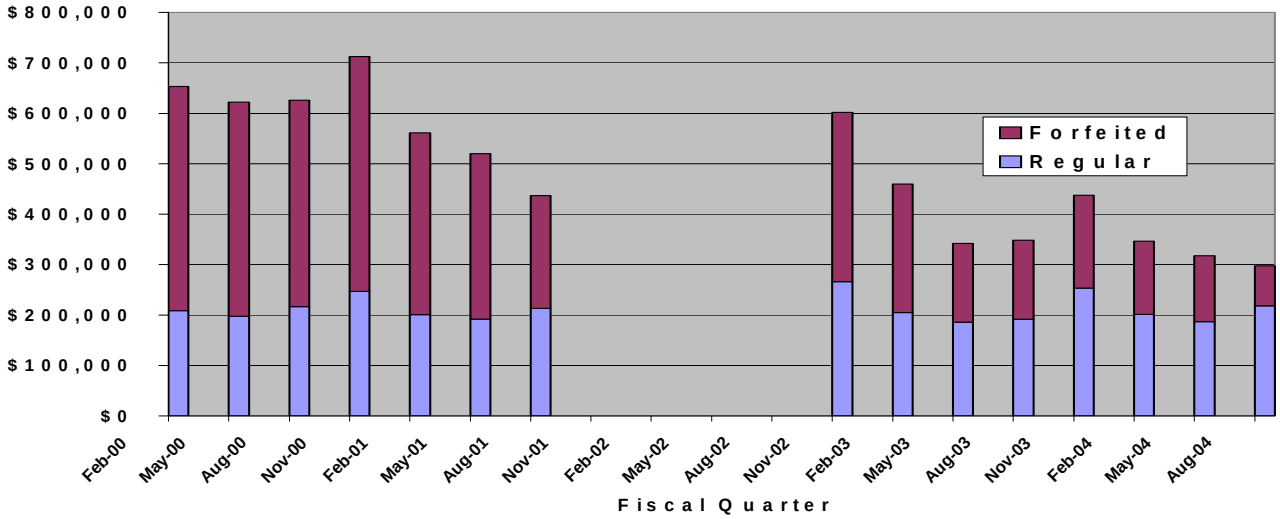


distributed to 34 counties for losses incurred July-December 2003.

Sixteen counties received capital improvement grants totaling $610,724.91. *In FY 03-04, counties requested $1,460,060.09 in cost overrun and capitol improvement grants, but the fee produced only $*1,398,538.76 *in revenues.*

As the graph shows, the total of the amounts requested have decreased gradually but slightly in recent grant periods. As the following graph depicts, the amount of available funds dropped significantly at the same time grant requests declined only slightly.

White Goods Revenues Received Since the Year 2000



Note: Blank areas indicate no revenue received

Program Results

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

In FY 03-04, 54 county collection sites took in 44,715 tons, or an estimated 1,117,875 appliances. This compares to the 25,749 tons, or 644,000 appliances, collected in FY 91-92 by all counties. Without the program, dumping or stockpiling large numbers of appliances could occur.

White Goods Management by County Governments

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

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

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

Though the white goods program has had many accomplishments, some problems remain. These include the limited accountability by counties to assure the exclusive use of tax disbursements and grants solely for the management of white goods.

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

Counties That Forfeited Funds

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

Beaufort	Bertie	Caswell	Chowan
Columbus	Currituck	Dare	Durham
Forsyth	Franklin	Gates	Haywood
Hertford	Hoke	Jones	Macon
Montgomery	Pamlico	Pender	Polk
Richmond	Robeson	Sampson	Tyrrell
Wake	Wilkes	Yadkin	

Counties That Will Become Ineligible for Advance Disposal Fees In March 2005
(Based on FY 03-04 AFIR Reports)

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

Anson	Jones
Catawba	Polk
Forsyth	Sampson
Granville	Surry

Counties that do not submit their AFIR by March 1, 2005 will be ineligible to receive tax proceeds.

White Goods Management Costs

Counties can use the white goods ADF proceeds disbursed quarterly by the Department of Revenue for daily expenses incurred to recycle white goods. Funds for one-time expenses, such as purchasing specialized equipment and making site improvements for better management, is also an option for local governments. Many county programs are not self-sustaining and require subsidies. Expenses for these programs include fuel, labor and the cost of associated items. Poor planning design is a major factor in counties with low and high program costs. This means that counties with minimal costs are not necessarily more efficient than counties with high costs. Some counties with low program costs are marginally in compliance with the law's intent.

The 54 reporting counties spent $3,663,561.00 in FY 03-04. Of this total, $3,004,803 was for daily operations, $419,751 for capital improvements, and $143,883 to clean up illegal disposal sites.

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

Highest Operating Costs Reported

County	Cost per ton	Cost per appliance*
Washington	$343.77	$13.75
Alexander	$328.43	$13.14
Gaston	$319.21	$12.77
Cumberland	$211.30	$ 8.45
Durham	$161.17	$ 6.45
Orange	$151.09	$ 6.04
Harnett	$131.61	$ 5.26
Mecklenburg	$122.71	$ 4.91
Ashe	$122.07	$ 4.88
Cleveland	$109.85	$ 4.39

Lowest Operating Costs Reported

County	Cost per ton	Cost per appliance*
Anson	$ 0.56	$0.02
Iredell	$ 1.86	$0.07
Cabarrus	$ 5.56	$0.22
Wilson	$ 6.70	$0.27
Guilford	$10.97	$0.44
Caldwell	$18.89	$0.76
Granville	$20.89	$0.84
Greene	$25.40	$1.02
Catawba	$25.97	$1.04
Forsyth	$27.47	$1.10

*Estimate assumes an average appliance weight of 80 pounds.

Outsourcing loading and transport to the recycler can reduce some costs. Other counties use in-house labor to sort and segregate metals, recover CFCs or extract motors or oil. Overall, operating costs by counties do not seem restricted by geography. Instead, analysis suggests that a correlation to distance to markets, extent of programs, extent of record keeping, and cost allocation plans among counties have a greater effect on county costs.

Tonnage Collected by Counties

In FY 03-04, 54 counties reported processing 44,715 tons of white goods. This translates into 1,117,875 individual appliances (assuming 25 appliances per ton), or about .14 appliances per person in North Carolina.

For information on a specific county program, please see the *Data, Statistics, Reports and Planning* page on the Solid Waste Section Web site (http://wastenotnc.org).

CHAPTER 6
SCRAP TIRE MANAGEMENT

Scrap Tire Disposal Account

The 1993 General Assembly created the Scrap Tire Disposal Account (STDA). The account receives 27 percent of its revenues from the Scrap Tire Disposal Tax initiated Oct. 1, 1993. The 2002 General Assembly removed of 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 Aug. 12, 1997 distribution, the fund allocates 50 percent for cost overrun grants, 10 percent for clean up of nuisance tire sites and 40 percent for processed tire material market development grants.

Balance of Funds as of July 1, 2003	$3,544,238.55
Deposits Received FY 2003-2004	$3.097,427.30
Total Funds in Account	$6,641,665.85
Grants to County Scrap Tire Programs	$1,649,566.67
Nuisance Tire Site Cleanup Program	$176,230.87
Processed Tire Material Grants	$514,196.90
Balance of Funds as of June 30, 2004	$4,301,671.41
Obligated funds as of June 30, 2004*	$3,116,399.45
Net Balance of Funds as of June 30, 2004*	$1,185,271.96

* $3,116,399.45 obligated: $757,101.95 for tire cleanup, $2,359,297.50 for tire recycling grants under contract and under negotiation

Tire Tax Distribution

Per capita distribution to counties from the state's tire disposal tax revenue, initiated October 1993, amounts to 68 percent. In the past year, the total amount distributed was $7,749,883.99. This subsidized tire disposal costs for the counties, but did not cover many counties' total expenses. The total distributed to the counties represented 75 percent of the total reported disposal costs of $10,379,216.51. This provided an average of 74 cents for each of the 10.5 million scrap tires handled by the counties.

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

Counties whose scrap tire costs exceed the amount they receive in their allocation of the tire tax, can apply for a grant to cover the deficit. For the first grant cycle of FY 03-04, 61 counties requested $1,011,560 and were awarded $821,583. In the second grant cycle, 61 counties requested $1,107,106 and received $816,985.

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 waste management division to consider county efforts to avoid free, out-of-state tire disposal and county program efficiency when making decisions about grant awards.

Grant Period	**10/97 – 3/98**	**4/98 – 9/98**	**10/98 – 3/99**	**4/99 - 9/99**	**10/99 - 3/00**	**4/00 – 9/00**
Funds Available	$976,245.51	$687,847.37	$633,761.66	$699,950.87	$663,467.43	$751,295.88
Funds Awarded	$602,778.28	$644,334.67	$583,093.00	$666,042.36	$786,511.24	$799,500.85
Grant Requests	41	45	46	56	53	53
Funds Requested	$677,682.00	$761,308.00	$781,603.00	$816,004.63	$842,931.37	$898,907.67

Grant Period	**10/00 – 3/01**	**4/01 – 9/01**	**10/01 – 3/02**	**4/02 - 9/02**	**10/02 - 3/03**	**4/03 - 9/03**
Funds Available	$700,221.11	$ 0*	$ 0*	$ 792,399.37	$ 694,963.10	$ 788,202.47
Funds Awarded	$709,226.95	$804,004.00	$ 811,050.00	$ 820,685.00	$ 821,583.00	$ 816,985.00
Grant Requests	51	56	53	57	60	61
Funds Requested	$730,709.37	$992,564.00	$1,024,935.00	$1,052,145.00	$1,011,560.00	$1,107,106.00

*Used balance in other STDA fund.

Grants Awarded

The goal of the division's grant program is to make scrap tire recycling sustainable in North Carolina. 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
  Construct additional molds to increase hard rubber tire manufacture
  COMPLETED
- Continental Tire, Inc., Charlotte, N.C. $1,520,000
  Develop "tire to tire" technology with 25 percent recycled content goal
  COMPLETED
- Jackson Paper, Inc., Sylva, N.C. $377,000
  Boiler modifications for tire derived fuel
  COMPLETED
- N.C. State University, Raleigh, N.C. $38,291
  Tooling development for scrap tire recycling
  COMPLETED
- TIRES, Inc., Winston-Salem, N.C. $320,000
  Produce playground/industrial mats
  COMPLETED
- Texas Encore Materials, Inc. (Carolina Materials LLC), Belmont, N.C. $983,360
  Manufacture extruded sheets from processed tire material
- Roll-Tech LLC, Hickory, N.C. $855,937
  Equipment acquisition for manufacturing solid rubber wheels

Tire Cleanup Program

Of the 358 identified nuisance tire sites in North Carolina, 335 are now clean and 20 sites have cleanups underway. The remaining three sites are either under investigation or enforcement action. Counties are encouraged to locate and clean all small tire sites through countywide cleanup activities.

Status	Number of Sites	Total Known Tires	Total Tires	Cleared Tires
Cleaned Up	335	7,484,566	93%	7,484,566
Under Clean Up	20	493,845	6%	123,530
Remaining Sites	3	17,708	1%	0
TOTAL	**358**	**7,996,119**	**100%**	**7,608,096**

The law requires the division to first address nuisance tire sites that pose the greatest threat to public health and the environment. At the start of the program, efforts and actions to clean top priority sites were developed and initiated, as funds were available. As cleanup funds were received through quarterly distributions, additional priority sites were cleaned.

The division has established and implemented a specific cleanup plan for each known nuisance tire site. With discovery of new sites, prompt investigation leads to a cleanup plan for each site within 30 days. Implementing the plan as soon as possible minimizes potential threats to human health and the environment. The section is committed to the North Carolina Big Sweep program, with reimbursements going to counties that request funds to dispose of scrap tires collected by the statewide event.

To date, STDA funds cleaned 188 nuisance tire sites. Cost recovery efforts collected $366,366.16 from responsible parties for nine of these sites. Two 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] Based upon the 2003 North Carolina population of approximately 8.4 million residents, tire generation is estimated as equal. 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. A ton of tires consists of 100 passenger tires, 20 truck tires, or four off-road tires (tractors and other large off-road equipment).

In FY 03-04, counties reported receiving tires in three size categories: 81 percent passenger car tires, 15 percent heavy truck tires and 4 percent off-road tires. During FY 03-04 counties disposed of approximately 10,506,000 tires (10,040,000 passenger, 436,000 heavy truck and 30,000 off-road). Comparing tire generation to population results in 1.25 scrap tires per person.

Tire Volume

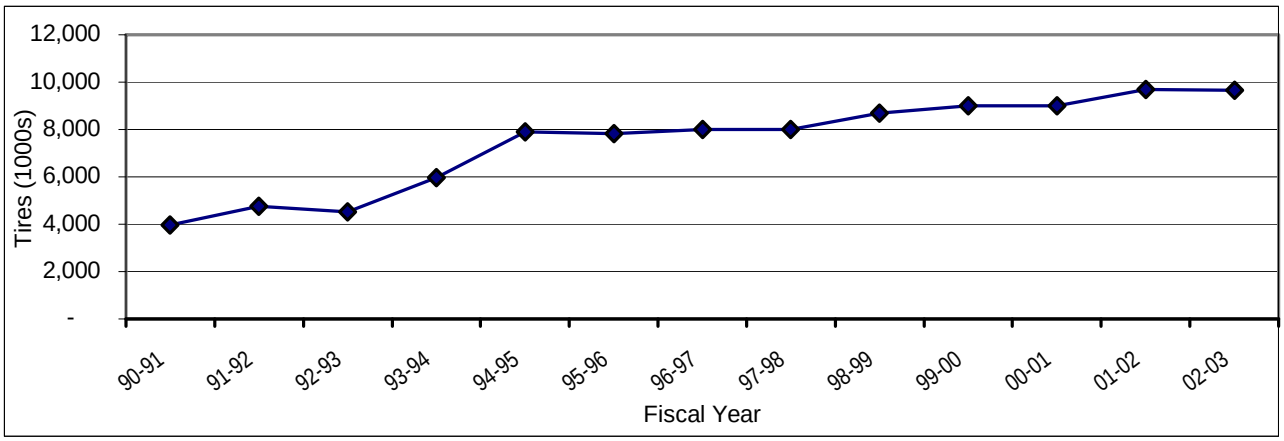
All counties are required to provide facilities for scrap tire disposal and to report on their management programs. An appendix located at the end of this chapter presents a summary of the data.

In FY 03-04, North Carolina businesses and individuals disposed of approximately 143,300 tons of tires. County disposal facilities and private processing facilities managed these tires:

132,926 tons	Managed by counties and shipped to three processing firms
1,444 tons	Managed by counties and shipped out-of-state
9,000 tons	Tires taken directly to processing firms (not managed by counties)
143,370 tons	**Total**

The counties shipped about 133,000 tons to three private North Carolina recycling facilities; the remaining 1,444 tons went to an out-of-state processor. An additional 9,000 tons came directly from disposers not participating in county tire programs. These may be individuals involved in privately funded cleanups or tire dealers not participating in a county program.

Volume of Disposed Tires
FY 90-91 - FY 03-04



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

The increase in the number of tires disposed during the past 11 years proves the success of the tire program. Regulated disposal facilities handle almost all disposed tires. However, since the 1994 implementation of free disposal 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. This cost estimate is based on disposal costs in counties with tire volumes greater than 120 percent of the county population (1.2 tires per person). Some counties are regional retail centers or have other factors that cause them to receive an excess volume of tires.

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

County Tire Disposal Costs

There are 96 county programs, including three regional programs [Carteret, Craven and Pamlico (CRSWMA); Chowan, Perquimans and Gates; Mitchell and Yancey counties]. These counties spent a total of $10,379,216.51 for scrap tire disposal. The reported costs for scrap tire disposal varied greatly. Some counties only report disposal costs while other counties include associated costs, such as personnel or equipment. Counties with unusually low costs may stockpile tires during the year rather than sending them for processing. Some of the fluctuation is probably due to recordkeeping errors or county reporting errors. Also, some counties manage tires inefficiently. For example, counties that allow citizens to dispose tires in "green boxes" incur increased labor costs to recover and load tires into trailers.

Tire disposal costs charged by processors are very competitive. North Carolina processors report that county contracts typically charge $70-$80 per ton, including transportation and trailer rental costs. Counties at a distance from processing facilities may pay as much as $85-$100 per ton. The average tire disposal cost in FY 03-04 was $82 per ton.

APPENDIX

COUNTY REPORTS OF TIRE DISPOSAL ACTIVITIES

County	Tax Revenue	Total Costs	Net	Cost/Ton	Contractor
Alamance	$126,350.08	$142,183.12	(15,833.04	$74.09	CCTD
Alexander	$32,115.54	34,293.75	(2178.22)	80.36	UST
Alleghany	10,189.79	17,738.53	(7548.74)	90.20	UST
Anson	23,946.82	18,597.00	5,349.82	28.51	UST
Ashe	23,229.97	26,835.00	(3605.03)	60,00	UST
Avery	16,661.11	20,147.60	(3486.49)	81.22	UST
Beaufort	42,845.98	112,290.17	(69,444.19)	93.94	CCTD
Bladen	30,721.94	63,349.14	(32,627.20)	105.72	CCTD
Brunswick	72,106.57	134,887.00	(62,780.43)	106.68	CCTD
Buncombe	197,309.83	219,480.00	(22,170.17)	72.68	UST
Burke	84,502.17	91,000.00	(6497.83)	99.56	UST
Cabarrus	128,492.91	98,941.77	29,551.14	49.82	UST
Caldwell	73,606.26	95,373.50	(21,767.24)	60.28	UST
Camden	6,722.69	11,224.00	(4501.31)	140.69	CCTD
Caswell	22,345.88	18,086.85	4259.03	80.48	CCTD
Catawba	136,430.59	196,537.20	(60,106.61)	63.33	UST
Chatham	48,237.88	89,280.00	(41,042.12)	130.91	CCTD
Cherokee	23,366.85	33,532.00	(10,165.15)	90.03	UST
Clay	8512.04	15,180.50	(6668.46)	35.36	UST
Cleveland	91,574.93	181,511.97	(89,937.04)	91.04	UST
Columbus	51,850.79	84,238.56	(32,387.77)	73.08	CCTD
CRSWMA	155,462.51	219,098.63	(63,636.12)	87.17	CCTD
Cumberland	288,057.77	335,190.00	(47,132.23)	79.85	CCTD
Currituck	17,901.17	22,231.83	(4330.66)	96.83	WMgt
Dare	29,426.35	19,298.19	10,128.16	24.26	CCTD
Davidson	141,020.54	143,791.34	(2770.80)	69.19	UST
Davie	33,900.33				UST
Duplin	47,199.05	55,337.88	(8138.83)	94.03	CCTD
Durham	216,303.76	256,911.97	(40,608.21)	90.39	CCTD
Edgecombe	52,232.60	64,457.00	(12,224.40)	79.27	CCTD
Forsyth	293,769.49	450,709.29	(156,939.80)	74.87	UST
Franklin					CCTD
Gaston	180,755.04	162,184.88	18,570.16	76.25	UST
Graham	7577.55	19,205.66	(11,628.11)	130.59	CCTD
Granville	47,381.89	66,589.90	(19,208.01)	109.98	CCTD
Greene	18,190.62	12,950.00	5,240.62	67.94	CCTD
Guilford	402,376.94	669,733.58	(267,356.64)	72.80	CCTD
Halifax	54,088.42	68,099.75	(14,011.33)	89.58	CCTD
Harnett	51,642.17	95,384.25	(43,742.08)	99.28	CCTD
Haywood	86,256.83	159,595.70	(73,338.87)	109.44	WRec
Henderson	21,938.81	37,710.00	(15,771.19)	104.21	UST
Hertford	27,346.95	25,415.78	1,931.17	73.46	CCTD
Hoke	5529.31	13,810.66	(8281.35)	92.19	CCTD
Iredell	119,837.06	192,126.00	(72,288.94)	71.00	UST
Jackson	31,841.45				WMgt
Johnston	120,717.18	152,084.00	(31,366.82)	82.30	CCTD
Jones	9,750.91	15,107.20	(5,356.29)	74.73	CCTD
Lee	46,793.27	40,331.95	6,461.32	52.91	CCTD

County	Tax Revenue	Total Costs	Net	Cost/Ton	Contractor
Lenoir	56,224.03	96,688.28	(40,464.26)	83.25	CCTD
Lincoln	61,733.37	114,279.09	(52,545.72)	79.93	UST
Macon	28,763.95	63,547.92	(34,783.97)	93.09	UST
Madison	18,687.87	23,343.90	(4,656.03)	114.68	UST
Martin	23,947.64	29,785.53	(5837.89)	76.33	CCTD
McDowell	40,301.71	68,129.27	(27,827.56)	91.12	UST
Mecklenburg	677,597.98	900,665.46	(223,067.48)	68.00	UST
Mitchell	14,946.11	39,142.75	(24,196.64)	93.20	UST
Montgomery	25,795.59	19,029.93	6,765.66	95.68	CCTD
Moore	72,066.63	48,963.15	23,103.48	60.74	CCTD
Nash	83,539.61	113,724.02	(30,184.41)	82.00	CCTD
New Hanover	153,619.98	257,599.00	(102,979.02)	82.89	CCTD
Northampton	20,734.35	12,668.63	8,065.72	68.21	CCTD
Onslow	142,366.93	126,583.85	15,783.08	79.46	CCTD
Orange	112,719.19	113,486.45	(767.26)	93.18	CCTD
Pasquotank	33,445.74	79,790.14	(4,634.44)	102.00	CCTD
Pender	39,909.92	62,516.01	(22,606.09)	102.10	CCTD
PeGaCh	34,538.25	84,623.00	(50,084.75)	96.27	CCTD
Person	34,250.75	41,405.00	(7,154.25)	89.04	CCTD
Pitt	128,651.13	195,326.01	(66,674.88)	70.73	CCTD
Polk	17,607.81	20,489.00	(2,881.19)	84.21	UST
Randolph	125,138.88	206,794.28	(81,655.40)	92.70	CCTD
Richmond	44,085.32	54,387.88	(10,302.56)	52.37	CCTD
Robeson	117,626.98	143,167.00	(25,540.02)	94.38	CCTD
Rockingham	87,232.99	89,900.15	(2,667.16)	67.62	CCTD
Rowan	124,575.09	182,189.99	(57,614.90)	90.72	UST
Rutherford	59,709.52	114,442.50	(54,732.98)	89.42	UST
Sampson	57,752.18	65,404.93	(7,652.75)	83.37	CCTD
Scotland	33,926.65	38,091.00	(4,164.35)	69.13	CCTD
Stanly	55,414.85	102,936.52	(47,521.67)	104.56	UST
Stokes	42,632.98	39,499.52	3,133.46	68.33	UST
Surry	67,788.99	119,137.20	(51,348.21)	69.37	CCTD
Swain	12,411.06	12,675.00	(263.94)	79.79	UST
Transylvania	27,794.71	38,155.00	(10,360.29)	44.62	UST
Tyrrell	3,919.06	4,360.74	(414.68)	102.24	CCTD
Union	124,439.87	137,497.00	(13,057.13)	65.15	UST
Vance	41,307.43	112,186.00	(70,878.57)	173.92	CCTD
Wake	619,729.03	711,341.02	(91,611.99)	74.20	CCTD
Warren	18,943.87	27,887.87	(8,944.00)	78.17	CCTD
Washington	12,903.65	40,636.15	(27,732.50)	76.04	CCTD
Watauga	40,498.15	39,434.70	1,063.45	58.94	UST
Wayne	107,418.87	128,118.12	(20,699.25)	73.94	CCTD
Wilkes	62,565.77	93,656.40	(31,090.63)	88.86	UST
Wilson	70,571.05	142,203.69	(71,632.64)	63.09	CCTD
Yadkin	34,702.87	40,193.24	(5,490.37)	57.56	UST
Yancey	16,901.03	26,017.34	(9,116.31)	97.00	UST

CCTD – Central Carolina Tire Disposal (NC)
UST – U.S. Tire Disposal (NC)
WMgt – Waste Management (NC)
WRec – Waste Recovery (GA)

CHAPTER 7
DEPARTMENT OF TRANSPORTATION

This section summarizes the N. C. Department of Transportation's recycling and solid waste management efforts for FY 03-04. 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 construction and maintenance operations 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 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. The statute mandates the department to 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 fence posts and sign supports;
- recycling technology, including but not limited to, hot in-place recycling.

Highway Construction Projects

1. No projects were let this fiscal year that included waste chipped tires as embankment fill material. Both projects scheduled for the year were delayed. Two projects have been identified for the coming year.
2. Division maintenance personnel reported the re-use of 2,321 tire sidewalls as drum ballast this year.
3. The use of fly ash as a concrete additive is increasing, and will continue to do so, as the price of cement climbs. This creates a higher market for ash than embankment fill and puts additional limits on availability of potential material for fill projects. This led to no projects being let this year that used fly ash as embankment fill. Much usage is likely still going unreported. Efforts continue to track down these volumes and develop means to track these uses in the future.
4. The number of recycled plastic guardrail offset blocks reported remains strong at 54,341 this year.
5. The use of 104 tons of recycled glass beads in pavement marking was also reported.
6. The recycling of millings is now being partially calculated using actual mix designs and recycling percentages stated in these designs. This will allow the report to portray a more accurate and inclusive picture of total asphalt recycling across the state in both construction and maintenance operations.
7. Maintenance personnel across the state continue to reuse products including: 187 feet of guardrail, 900 feet of silt fence and posts, 786 feet of reinforced concrete pipe, and over 1200 tons of stockpiled soil, mulch, gravel, and rubble. These numbers will surely grow as DOT improves its reporting and tracking system in the coming years.
8. See Attachment 1 for quantities of recycled materials used for the 2004 Fiscal Year. Attachment 2 lists quantities from 1989 to June 30, 2004.
9. This next year will include finalizing the development and release of a new, Web-based reporting structure that will offer many new features. This new system will ease the burden of users in the field by offering user-friendly data entry options and by accepting values in several common units. This will not only simplify the collection of the data but will greatly increase the power and flexibility of the final annual report.

Continuous Process Improvement

There was no Continuous Process Improvement Conference during this past fiscal year. The next conference is scheduled for April 21, 2005.

For up-to-date information on DOT's use of recycled materials and environmental initiatives, visit http://www.ncdot.org/environment/3R/

Attachment #1:

N.C. DEPARTMENT OF TRANSPORTATION
RECYCLING & SOLID WASTE MANAGEMENT SUMMARY
FISCAL YEAR 2004 TOTALS (JULY 1, 2003 - JUNE 30, 2004)

Description	Usage	Quantity
Waste Scrap Tires:		
Tire Sidewalls	Drum Ballasts	2,321 EA
Glass:		
Glass Beads	In Paint & Long life pavement markings	104 TONS
Plastic:	Guardrail Offset Blocks	54,341 EA
	Plastic Pipe	1,168 LF
	Delineators	165
Fly Ash:	Concrete Mix Additive	1248 TONS
Recycled Asphalt Pavements:	Asphalt Pavement Millings	2,465,542 SY
	Beneficial Fill Material	3,933 CY
	Cement	122,586 TONS
	ABC	147,245 TONS
Class B Stone:	Erosion Control Stone	312 CY
Bark Mulch:	Mulch	1776 TONS
	Erosion	2 ACRES
*** Recycled Steel:**	Guardrail	187 FT
***Reused Materials:**	Silt Fence and Posts	900 FT
	Reinforced Concrete Pipe	786 FT
	Gravel and Rubble	1760 TONS

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

Attachment #2:

RECYCLING & SOLID WASTE MANAGEMENT SUMMARY
TOTALS (JANUARY, 1989 - JUNE, 2004)

Description	Usage	Quantity
Waste Scrap Tires:		
Chipped Tires	Roadbed Embankment Component	11,187,655 TIRES
Crumb Rubber	Crack Sealant Soil Amendment	500 LB 20 TONS (app. 2,025 TIRES)
Chipped Tires	Sound Wall Panels	8,000 TIRES
Tire Sidewalls	Ballast for Traffic Drums	53,856 EA
Lightweight Fill Chipped Tire Material	Soil substitute in culvert backfill	47,211 TIRES
Crumb (Ground) Rubber	Asphalt pavement component	124,512 TIRES
Whole Tires	Retaining Wall	2,500 TIRES
Rubber Mulch	Wood Mulch	**8 TONS** (app. 800 TIRES)
		Total 11,426,559 TIRES
Plastics:		
Plastic Lumber	Guardrail Offset Block	247,789 EA
Plastic Lumber	Type III Barricades	1,320 FT
Recycled Plastic Fence Posts	Right of Way Fencing	7,600 EA
Recycled Plastic Delineator Posts	Roadside Safety Delineators	841 EA
Recycled Plastic Pipe	Subsurface Drain Pipe	33,626 LF
Recycled Plastic Pipe	Fittings (Y, T, & L's)	76 EA
Recycled Plastic Pipe	Temporary Slope Drain	4,723 LF
Recycled Plastic Traffic Separators	Railroad Safety Device	2,922 LF
Glass:		
Glass Beads	In Paint & Long life pavement markings	52,396 TONS
Crushed Glass	Aggregate backfill for subdrainage pipe	95 CY
Crushed Glass	Pipe Foundation Conditioning	333 TONS
Crushed Glass	Aggregate Base	203 TONS
Fly Ash:	Roadbed Embankment Component	865,186 CY
	Additive to asphalt pavement	40,800 TONS
	Concrete Mix Additive	2,318 TONS
	Flowable Fill	126 CY
	Sign post w/concrete core	1,350 EA
Steel Slag:	Aggregate Stone Base	224 TONS
Bottom Ash:	Borrow	2,707 CY
Recycled Asphalt Pavement	Asphalt Mix Additive	1,022, 084 TONS
	Hot-in-Place Recycling	1,459,869 SY
	AC from RAP	140,450 TONS
	ABC	23,208 TONS

Asphalt Pavement Millings	Asphalt Mix Additive	222,299 CY
Asphalt Shingles	Asphalt Mix Additive	13,825 TONS
Processed Silica	Borrow	46,072 CY
Recycled Aggregate Base Coarse	Aggregate Base Coarse	850 TONS
Class B Stone	Erosion Control	312 CY
Recycled Polyester Resin	Weedmat	963 SM
Recycled Polyester & Hog Hair	Cold Mix Asphalt Patching Material	20 LB
18" Corrugated Metal Pipe	18" Corrugated Metal Pipe	40 LF
Berm Ditch	Borrow	483 LF
Recycled Asphalt Cement	Asphalt Cement	4,676 TONS
Refurbished Traffic Signal Heads	Traffic Signal Heads	11 EA
Type IV Double Faced Concrete Barrier:	Concrete Barrier	4,171 LF
	Retaining Wall	3,100 LF
Wooden Breakaway Posts	Reuse - Guardrail Offset Blocks	11,409 EA
Concrete:		
Recycled Concrete	Pavement Base Course Material	3,400 TONS
Crack and Seat Concrete	Similar to Rubblizing	260,778 TONS
Rubblized Concrete	Reuse as pavement base course	211,050 TONS
Concrete Pipe	Reuse as Concrete Pipe	2,940 LF
Recycled Concrete	RCA Shoulders	21,505 TONS
Recycled Concrete	Fill Material	18,337 CY
Steel: (reused)		
Beams	Beams	80,000 LB
Guardrail	Guardrail	1,422 LF
Reused:		
Silt Fence and Posts		900 FT
Reinforced Concrete Pipe		786 FT
Gravel & Rubble		1760 TONS
Landscaping/Wildflowers/Roadside:		
Lime-Stabilized Municipal Sludge	Soil amendment for wildflower beds	704 TONS
Hydromulch	Mulch for grass establishment	38 TONS
Aged Leaf Mold & Yard Debris	Soil amendment	2,370 TONS 1,000 CY
Mallinckrodt Ammonium Sulfate Liquid	Topdressing Fertilizer	420,948 GAL
Soil Derived from Demolition Debris	Soil Amendment	1,742 TONS
Nuggets of Broken Brick	Mulch	1,000 BAGS

Calcium/Sulfur Supplement	Soil Amendment to acidic soils	3 TONS
Bioremediated Petroleum Affected Soils	Soil Amendment	920 CY
Vegetative Clearing Debris	Erosion Control mulch	27 AC
Hog Waste Compost	Fertilizer	25 C Y
Cotton Gin Waste	Soil Amendment	7,130 CY
Clearing Debris	Mulch	327 CY
Hurricane Fran Mulch	Soil Amendment	200,000 CY
Bark Mulch	Soil Amendment	10,434 TONS/ 258,262 CY
	Erosion Control	2 ACRES
Advanced Alkaline Sludge	Soil Amendment	495 TONS 414 AC
Municipal Sludge	Soil Amendment for Vegetative Cover	141.5 AC 8,610 TONS 200 CY
Swine Waste	Bio Soil Research/Experimentation	900 Lb.
Poultry Litter	Fertilizer	425 TONS 11,734 CY

CHAPTER 8
DEPARTMENT OF ADMINISTRATION

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

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

Presently, the 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 are continuing to look at alternative methods and products, if such 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 @ Your Service

NC E-Procurement @ Your Service is a user-friendly, Internet-based purchasing system that offers electronic purchase order processing and enhanced administrative functions to buyers and vendors, resulting in operational efficiencies and cost savings. In the first two full years of operation, the State has used NC E-Procurement to achieve cost savings of $127 million as a result of decreased prices of items purchased by the state.

The program's goals and objectives reflect the State's "One North Carolina" vision outlined by Gov. Michael Easley, as well as that of the sponsoring agencies -- the Department of Administration's Division of Purchase & Contract, the Office of the State Controller, and the Office of Information Technology Services' Statewide Information Technology Procurement Office. As of February 2005, the enterprise-wide system has over 10,000 users from more than 220 entities across North Carolina agencies, community colleges, local K-12 schools, and local governments.

Another way that E-Procurement has made the interactions between government and business more intuitive is to create an on-line marketplace for informal bidding; this marketplace is known as eQuote. eQuote allows users to submit electronic requests for quotes to vendors, replacing cumbersome manual quoting processes involving phone, fax, or U.S. mail. Vendors respond with their quotes on-line and buyers view the auto-tabulated quotes, award the contract, and submit the purchase order.

Through eQuote, buyers have reported savings averaging 23 percent. These savings have been achieved through the increased competition that results from using the on-line quoting tool. Vendors have also appreciated receiving eQuotes – especially the consistent format and straightforward navigation of the on-line tool.

The NC E-Procurement @ Your Service system has achieved the following process efficiencies for the State:

- Consolidated numerous purchasing systems into a single enterprise procurement system enabling the state to gather significant purchasing information, evaluate purchasing patterns, and negotiate better prices with its vendors.
- Streamlined and standardized the current procurement processes, allowing for decreased cycle times and increased process efficiencies.
- Enabled the consistent application of both statewide purchasing polices and agency-specific business rules.
- Automated approval workflow. For term-contract purchases under predetermined dollar thresholds, the workflow feature can reduce the number of approvers and lessen the impact on purchasing agents, allowing additional time on more value-added activities.

- Provided product-specific electronic catalogs containing items on statewide term contract. Electronic catalogs increase compliance with state contracts, improve the accuracy of issued purchase orders, and reduce the data entry of end users.
- Automated and standardized the informal quote process. Our electronic quoting process replaced calling, mailing, or faxing vendors; and reduced prices by increasing vendor competition through greater vendor participation.

Environmental Benefits

In addition to the efficiencies mentioned above, NC E-Procurement @ Your Service also contributes to improving the environment. The following are just a few of the benefits:

- Reduction in paper and mailing expenses incurred during non-electronic business transactions.
- Cost reduction to vendor by printing fewer catalogs.
- Elimination of many vendor expenses associated with non-electronic business transactions.
- Recycled items are easily identified within the application.

Interactive Purchasing System

The Division of Purchase and Contract continues to promote opportunities for vendors to do business with the state through electronic advertisement of Goods, Services and Design/Construction posting in IPS. The entities using this system consist of State Departments, Institutions, Universities, Community Colleges, Public Schools, Cities, Towns and Counties.

Vendor Link allows vendors to register to receive electronic notification of advertised bids. Vendor Link had 16,493 registered vendors June 30, 2004. The system continues to grow with addition of users increasing from 100 Entities with 324 users, July 1, 2003, to 112 Entities with 361 users, June 30, 2004.

Open Market Awards

- Office Panel Systems-It is standard procedure to incorporate refurbished language in the bid document for refurbished panel systems.
- Food Product Packaging- Exchange wooden pallets of food for cases. Cardboard cases are recyclable.
- Food serving equipment purchased make from stainless steel that is more durable and can be recycled at end of use
- 543 bids were awarded last calendar year that support sustainability.

Statewide Term Contracts

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

- **Batteries, Storage 060B** – Batteries are exchanged as a core and picked up by the vendor. Battery casings are made from recycled material (96 percent)
- **Oil Filters, 060c** - Allows for multipacking, which reduces the number of filters individually boxed. This reduces trash generation.
- **Domestic Appliances, 045a** - All refrigerators, washers and dishwashers are “Energy Star” qualified. The Department of Energy monitors this stringent measurement of energy efficiency. The payoff is a more efficient appliance, which use less energy over the lifetime of the product.
- **Industrial, Medical and Specialty Gases 430A -** Are delivered statewide in reusable cylinders and are exchanged when replacement cylinders are needed.
- **Office Paper, 645a** - Contains both 100 percent and 50 percent post consumer and chlorine-free copy paper. Section 9A is virgin paper and the balance of the contract is recycled paper/envelopes.
- **Remanufactured Toner Cartridges, 207a** - Refillable to avoid being added to the waste stream.

- **Lateral Filing Cabinets, 425f** - Cabinets contain 5 percent recycled content. Corrugated boxes have a minimum 50 percent post consumer waste and are recyclable. Contractors purchase back files at end of their use.
- **Vertical Filing Cabinets, 425g** – Classes B and C cabinets have 10 percent recycled content. Corrugated cardboard boxes contain 50 percent post consumer waste and are 100 percent recyclable after use. Class A cabinets contain 29 percent recycled content, 3 percent post consumer recycled content and are 96 percent recyclable after use.
- **Wood Library Furniture, 420d** - Contractors support sustainability through different practices, even when end products do not contain recycled content but are made from renewable sources. Packaging is recycled and recyclable; wood scrap becomes mulch; blanket wrapping becomes shipping material and the wood is recycled into 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 at the end of use. Instruments can be traded-in for reconditioning and one company donates trade-ins to the Links Program for the needy. Corrugated containers are 100 percent recyclable.
- **Calculators, 600a** - Packaging material may be recycled.
- **Carpet, 360a** - Contains carpets with recycled content. All carpet that removed per this contract will be recycled or non-landfilled.
- **Cleaning Implements, 485g** – Some products contain 60 percent post consumer recycled content, packaging contains 20 percent post consumer recycled content. 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. 45 percent broom material is biodegradable.
- **Large & Specialty Lamps, 285a** – Encourages the use of energy-efficient fluorescent lamps and lists products that meet or exceed Federal Energy Management Program recommendations. A link to FEMP illustrates return-on-investment for retrofitting energy efficient lamps and ballasts. Some lamps contain 65 percent recycled content, are low mercury (TCLP compliant) and non-hazardous. Packaging can contain 73 percent recycled content.
- **Ballasts, 285b** - Encourages the use of energy efficient fluorescent lamps and lists products that meet or exceed FEMP recommendations. A link to FEMP illustrates return-on-investment for retrofitting energy efficient lamps and ballasts. Ballast contains no PCBs (polychlorinated biphenyl) and can be disposed of in the trash. Reduced form factor to minimize packaging.
- **Material Handling Carts/Trucks, 560a** – Very few products are made from virgin steel. Products are not shipped in cartons.
- **Dictation/Transcription Equipment, 600c** – Vendors use recycled items (approx. 10 percent) and comply with the 9000 guideline in the International Organization for Standardization. Packaging contains from 60-100 percent recycled content.
- **Laminators & Laminating Film, 665a** – Some film contains 5 percent post consumer content. Packaging contains 25-80 percent post consumer content.
- **Bio-Diesel Fuel, 405L -** B20 blended fuel contains 80 percent diesel fuel and 20 percent virgin soy or reprocessed vegetable oil.
- **Cameras, Digital & Film, 655A** – The metal camera bodies can be salvaged and reused. Plastic bodies and parts can be recycled. All packaging materials can be recycled.
- **Gasohol, 405M** – E-10 blended fuel contains 90 percent unleaded gasoline and 10 percent ethanol.
- **Passenger Cars, 070A; Law Enforcement Vehicles, 070B; Trucks/Vans/Utility Vehicles, 070G** – Bids included an AFV (alternate fuel vehicle) category for each line item. AFV has three solely dedicated bid lines. According to the Steel Recycling Institute, 67.7 percent of a vehicle is steel or iron. Of that steel or iron, 26.6 percent is post consumer material. Therefore, 18 percent of a vehicle is from post-consumer recycled material.
- **Wiping Cloths, 735A** – All items are second-hand textiles. Reclaimed wiping cloths are available as well as new cloths. Vendors resell waste instead of sending it to landfills. Vendors use low alkaline content wastewater. The sale of recycled textile rags leads to the manufacture of paper products. All rags can be re-laundered.
- **Furniture, Desks (Wood), Credenzas, Conference Tables, Etc., 425B** – Contractors support sustainability through different practices. Mechanical parts can be recycled or replaced – extending

service of item. Packaging is recycled and recyclable. Products may be ground into particleboard.

- **Office Supplies, 615A** – Contractors are required, to the extent feasible and practical, to offer and identify recycled products and packaging; especially with post-consumer waste content.
- **Chalkboards, Tack boards and Erasers, 785A** – The product packaging has recycled content.

Items Aiding Waste Reduction Purchased by State Agencies Through Term Contracts and Open Market

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

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

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

Repairable
Defibrillators
Musical instruments
Pencil sharpeners
Tire recapping & repairing services

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

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

Longer Lasting
Floor maintenance machine batteries
Library furniture
Pens

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

Washable
HVAC filters
Wiping cloths

Used
Automobiles and trucks