North Carolina

SOLID WASTE MANAGEMENT

Annual Report

JULY 1, 1999 - JUNE 30, 2000

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Department of Environment and Natural Resources
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Reduce--Reuse--Recycle

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This document, required by state law, is an annual report on the status of solid waste management in North Carolina. Information for this document was gathered from solid waste facility reports submitted by operators of permitted facilities (both public and private), and from annual solid waste management reports submitted by local governments.

Special thanks

We gratefully acknowledge the assistance of staff from local governments and public and private waste management facilities in North Carolina.

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Solid Waste Management Annual Report
Fiscal Year 1999-2000

This Annual Report is required by the North Carolina General Assembly in G.S. 130A-309.06(c), the Solid Waste Management Act of 1989[1]. The information presented is from both local government annual reports and reports from permitted solid waste management facilities. These reports represent activities related to the management of solid waste for the period July 1, 1999 to June 30, 2000. This year's report also incorporates information from local government ten-year solid waste management plans, state agency data and voluntary reporting from out-of-state landfills that received North Carolina waste. In FY 99-00 all 100 counties, 421 municipalities and 200 solid waste facilities submitted annual reports.

FINDINGS OF THE ANNUAL REPORT

Based on the information and reports received, the Department presents the following findings:

- Waste disposal continues to increase rapidly.
- Most of the waste in North Carolina is generated from counties with high populations and strong economic growth.
- North Carolina continues to rely on out-of-state landfills for a portion of its disposal capacity.
- Solid waste landfills are difficult to site.
- Unlined landfills release contaminants into the groundwater and surface waters of the state long after they are closed.
- Natural disasters dramatically increase waste generation.
- Construction and demolition waste is a significant part of the waste stream.
- Illegal disposal continues to be a problem, especially by construction, demolition and land-clearing contractors.
- Recovery of some traditional recycling materials is declining.
- Market prices for most major recyclable commodities have been stable and do not indicate a lack of demand for collected materials.
- Recycling services and markets offered by the private sector suffer occasional setbacks but are expanding. This gives waste generators more options for diverting materials from disposal.
- Distinct differences exist between successful and unsuccessful local government reduction programs. Successful programs have a variety of components that need to be adopted by more local governments.
- Local government recycling efforts would be improved by increasing the number of new recycling processing facilities.
- Implementing public recycling education programs increases recovery.
- Source reduction and reuse are underutilized as waste management strategies.
- Disposal bans are effective and play a significant role in waste reduction. The statewide disposal ban on yard waste disposal has been particularly effective.

[1] This legislation was originally passed in 1989, but amended in 1991 and 1995.

- The scrap tire program, which is supported by an advance disposal fee, successfully handles a hard-to-manage portion of the waste stream, which results in decreases in illegal dumping. Legislative changes are needed to maintain the program's current status.
- Many areas of the state continue to lack basic services and programs to divert used or waste oil, oil filters, antifreeze and household hazardous waste from disposal.
- Buy-recycled programs are critical to strengthening recycling markets.

IMPLICATIONS FOR SOLID WASTE MANAGEMENT

North Carolina's projected population growth and increase in waste generation will undoubtedly impact environmental quality. Based on June 1999 figures from the Office of State Planning, the State's population is projected to grow from it's current 7.7 million to 8.2 million by the year 2005, and to 8.7 million by 2010. This growth is expected to be accompanied by economic expansion. This will place increased demands on North Carolina's physical and economic resources.

The issues surrounding solid waste management have grown more complex. Solutions to the problems are not easily identified and lack consensus. Consequently, the Department recommends that a solid waste study committee be established to examine the issues presented here.

Issues recommended for the study committee include:

- What are the most effective means to achieve greater waste reduction statewide?
- Can the state ensure adequate disposal capacity without providing disincentives to waste reduction and without long-term negative environmental or social impacts?
- How should the state approach its continuing illegal dumping problem?
- What are the best ways to manage and reduce problematic and large waste streams such as electronics, construction debris and organic wastes?
- What additional resources will be needed to achieve greater waste reduction? Where can those resources be found?

SOLID WASTE DISPOSAL

♦ FINDING: WASTE DISPOSAL CONTINUES TO INCREASE RAPIDLY.

The state measures waste reduction by comparing its per capita waste disposal rate in the base year (FY 91-92) to its per capita rate in the current year. This comparison indicates whether or not the state is increasing or decreasing its waste disposed on a per capita basis.

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

Historic Solid Waste Disposal Rate

Fiscal Years	Tons Disposed	Population	Per Capita Disposal Rate	Percent Waste Reduction from Base Year 1991-92
1999-2000	(adjusted) 9,889,180	7,647,934	1.29	-20 %
1999-2000	10,218,962	7,647,934	1.34	-22 %
1998-1999	9,211,477	7,544,360	1.22	-13 %
1997-1998	8,493,921	7.431.161	1.15	-6 %
1996-1997	(adjusted) 8,041,734	7,323,085	1.10	-2 %
1996-1997	8,741,733	7,323,085	1.20	-11 %
1995-1996	7,722,794	7,194,238	1.07	0 %
1994-1995	7,624,144	7,064,470	1.08	0 %
1993-1994	7,038,505	6,949,095	1.01	6 %
1992-1993	6,890,818	6,836,977	1.01	6 %
1991-1992	(managed) *7,257,428*	*6,739,959*	(Base Year Rate) *1.08*	
1991-1992	6,822,890	6,739,959	1.01	
1990-1991	7,161,455	6,648,689	1.07	

It is clear from the chart that waste disposal has increased both in absolute amounts and on a per capita basis. This is true even when storm and disaster-related debris are excluded from the calculations.

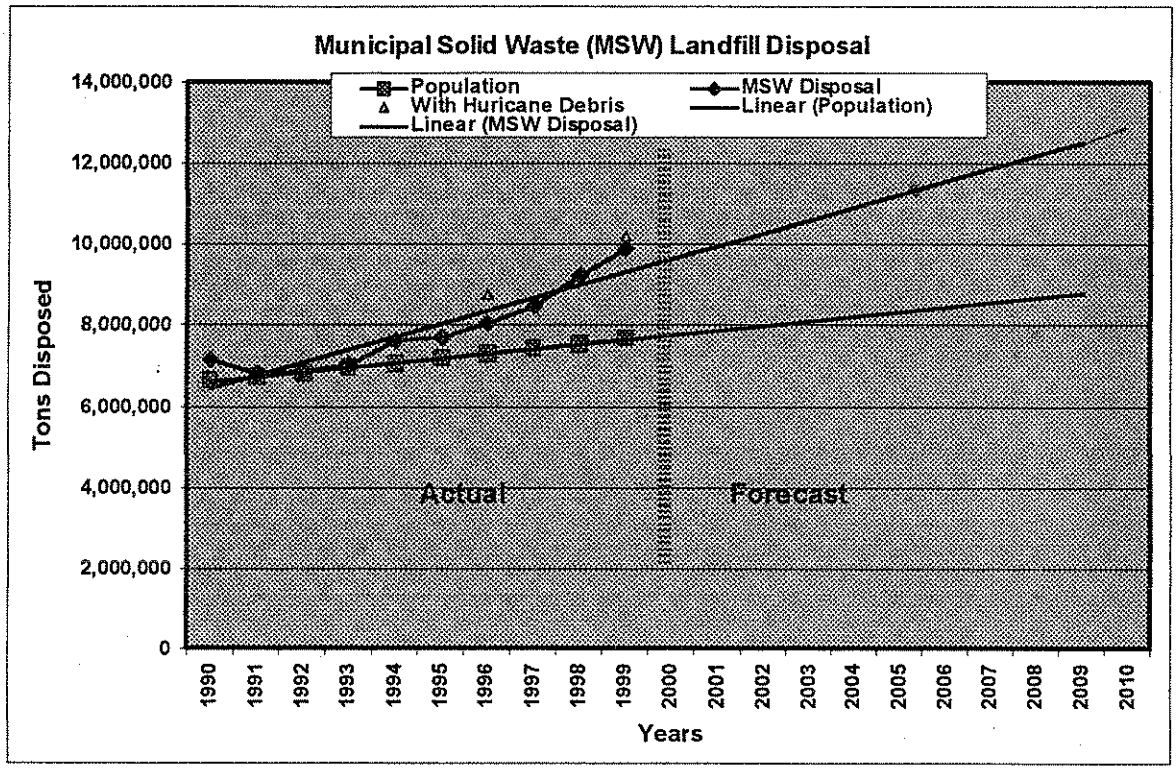
Solid waste was first reported on a statewide basis in 1990-1991. In the early 1990's the state made slight reductions in per capita waste. Several factors came together to cause this reduction. The initiation of tipping fees served as incentive for waste that did not require landfill disposal to be managed by other options. Local governments initiated recycling programs in response to a disposal crisis and state mandates. These programs began recovering materials that were relatively easy to capture and primarily came from residential waste. Also, during the early 1990's, the economy was weak and there was strong public and private interest in finding new ways to reduce waste.

In recent years disposal has increased dramatically. It is obvious that the State will not reach its 1991 goal of a 40% per capita decrease by 2001. In fact, 2001's disposal rate may be close to a 40% *increase* when compared to 1991.

The increase in disposal of the past several years is due to several factors. These include an increase in the use of disposable products, increased packaging, and the entry of new materials into the waste stream, particularly computers and other electronics. Industrial and commercial by-product waste has also increased, and the high level of economic activity has contributed to the growth in waste.

Tipping fees at landfills have remained relatively steady and affordable. There has not been an increase in waste diversion activity. However, the growth in recycling efforts seen in the early 90's stagnated and recycling programs have not expanded.

It is important to note that despite these efforts, the single most dramatic impact on the growth of waste disposed in North Carolina is the increase of construction and demolition debris.

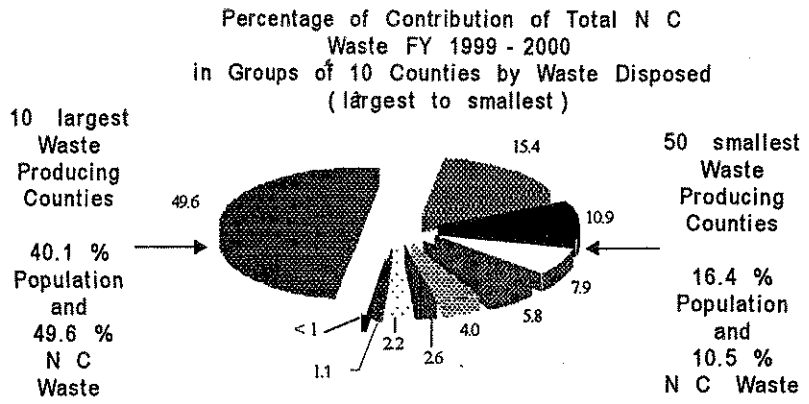


When combined with absolute population growth the continued increase in disposal rates could mean that North Carolina will have to dispose of nearly 13 million tons (or nearly a ton and a half of waste for every citizen) by 2010. This forecast does not include the impact of natural disasters, such as a hurricane, on the projected waste stream.

- **FINDING: MOST OF THE WASTE IN NORTH CAROLINA IS GENERATED FROM COUNTIES WITH HIGH POPULATIONS AND STRONG ECONOMIC GROWTH.**

In FY 99-00, 10 North Carolina counties with the highest waste disposal (49.6 % of the state's waste) held 40.1% of the state's population. This percentage is down slightly from last year where 33% of the population accounted for 51% of the waste disposal. Hurricanes Dennis and Floyd may have contributed to the decrease as a portion of the state total noted in these 10 counties. However, hurricane-related waste dramatically increased waste disposal in many rural counties in the eastern part of state. For example, Pitt County replaced Iredell County in the top 10 for FY 99-00. The increase in its waste disposal was primarily due to debris from Hurricane Floyd.

The per capita disposal rate was 1.65 for these top ten counties, approximately 30% higher than the state rate. Conversely, half of North Carolina counties, those with lowest waste disposal, had 16.4% of the state's population and produced 10.5% of the waste landfilled during the same fiscal year. Nine of the top ten counties with the highest waste disposal were also nine of the top ten counties with the highest populations. Pitt County, as previously mentioned, was the exception to this finding and was tenth in terms of waste disposal the past fiscal year.



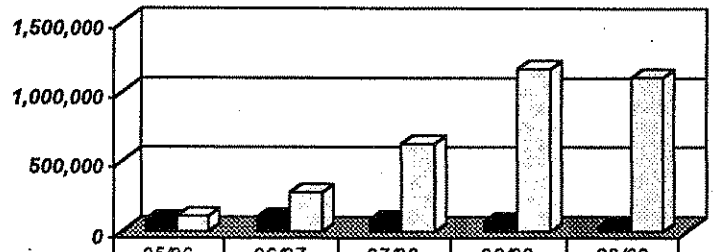
Ten Largest Waste Producing Counties FY 99-00

County	Tons Disposed FY 99-00	Percentage by County of Total NC Disposed	Cumulative Percentages
MECKLENBURG	1,282,196	12.55 %	12.5 %
WAKE	958,831	9.38 %	21.9 %
GUILFORD	756,754	7.41 %	29.3 %
FORSYTH	422,827	4.14 %	33.5 %
CUMBERLAND	389,286	3.81 %	37.3 %
NEW HANOVER	275,930	2.70 %	40.0 %
DURHAM	267,299	2.62 %	42.6 %
GASTON	260,383	2.55 %	45.1 %
BUNCOMBE	247,300	2.42 %	47.6 %
PITT	209,768	2.05 %	49.6 %

- **FINDING: NORTH CAROLINA CONTINUES TO RELY ON OUT-OF-STATE LANDFILLS FOR A PORTION OF ITS DISPOSAL CAPACITY.**

North Carolina has always been a net exporter of solid waste. In recent years, North Carolina has shifted to exporting significantly more than it imports. North Carolina exported 11% of the total waste disposed in FY 99-00. The chart to the right shows total tons imported and exported from FY 95-96 through FY 99-00. The state exported 1,106,897 tons of waste for FY 99-00, slightly less than the FY 98-99 total of 1,166,875 tons. Imports have decreased as well. In FY 98-99 74,185 tons were imported, compared to 41,840 tons during the most recent fiscal year. Exports are tracked by transfer station reports within North Carolina

Solid Waste Imports/Exports



	95/96	96/97	97/98	98/99	99/00
Imports	88,982	103,510	87,393	74,185	41,840
Exports	111,097	280,400	629,415	1,166,875	1,106,897

and voluntary reports from out-of-state facilities. Waste imports are tracked through annual reports submitted by North Carolina solid waste facilities.

The movement of waste across state lines has become a national issue. Several states currently classified as net importers have made efforts to restrict interstate movement of waste. New York City's plan to close Fresh Kills Island landfill will increase the amount of exported waste. This is expected to stir a more detailed review of interstate waste movement in the nation.

Imports and Exports from FY 95-96 through FY 99-00

Fiscal Year	Total Tons Exported	Receiving Facility	Distribution of Tons Received	Total Tons Imported	Receiving Facility	Distribution of Tons Received
1999-2000	1,106,897	Bristol Landfill, VA	14,001	41,840	Addington Upper Piedmont Regional Landfill, Person Co.	32,976 (VA)
		Brunswick Landfill, VA	432,645		Gaston Co. Landfill	640 (SC)
		Iris Glenn Landfill, TN	43,680		GDS Recycling Services, Catawba Co.	377 (SC)
		Lee Co., SC	148,412		Griffin Farms C&D Landfill, Union Co.	565 (SC)
		Palmetto Landfill, SC	463,587		Mecklenburg Co. Landfill	15 (SC)
		Pinebluff Landfill, GA	4,572		Piedmont Sanitary Landfill, Forsyth Co.	7,158 (VA)
					Uwharrie Environmental MRF, Montgomery Co.	101 (SC)
					Uwharrie Environmental Landfill, Montgomery Co.	8(SC)
1998-1999	1,166,875	Bristol Landfill, VA	14,766	74,185	Addington Upper Piedmont Regional Landfill, Person Co.	53,798 (VA)
		Brunswick Landfill, VA	382,479		Gaston Co. Landfill	418 (SC)
		Iris Glenn Landfill, TN	41,612		Griffin Farms C&D, Union Co.	594 (SC)
		Lee Co., SC	277,246		New Hanover Waste to Energy	57 (MD)
		Palmetto Landfill, SC	446,858		Piedmont Sanitary LF, Forsyth Co.	19,251 (VA)
		Pinebluff Landfill, GA	3,914		Uwharrie Environmental MRF, Montgomery Co	67 (SC)
1997-1998	629,415	Palmetto Landfill, SC	422,248	87,393	Piedmont Sanitary Landfill, Forsyth Co.	80,570 (VA)
		Brunswick Landfill, VA	190,890		Addington Upper Piedmont Regional Landfill, Person Co.	6,194 (VA)
		Lee Co. Landfill, SC	16,277		Union Co. Landfill	629 (SC)
1996-1997	280,400	Palmetto Landfill, SC	280,400	103,510	Piedmont Sanitary Landfill, Forsyth County	103,120 (VA)
					Union County Landfill	390 (SC)
1995-1996	111,097	Palmetto Landfill, SC	111,097	88,982	Piedmont Sanitary Landfill, Forsyth County	88,982 (VA)

♦ FINDING: SOLID WASTE LANDFILLS ARE DIFFICULT TO SITE.

Several recent efforts to gain local government approval for siting a new landfill or expanding an existing landfill in North Carolina have not been successful. Additionally, each of the recent approvals for new municipal solid waste landfills in North Carolina has been challenged under various legal procedures. In just the past six months, there have been well-publicized rejections of various landfill proposals in Duplin, Halifax and Chatham Counties. Additionally, the recent permit decisions in the City of Albemarle, Mecklenburg, Wake, Greene and Anson Counties have all encountered some type of legal challenge.

A landfill is an essential component of a comprehensive program that safely and economically manages solid waste. For many years North Carolina had a system of county owned and operated landfills. These primarily served the county in which they were located. Currently, most of North Carolina's municipal solid waste is landfilled in regional landfills. These landfills are either owned by a local government, a private waste management company, or a combination of the two and serve a wide geographic region.

The existing requirements for gaining a state permit to a landfill in North Carolina include certification to the state that the local government that has jurisdiction over the location gives its approval. This approval involves several procedural steps and is a public decision. The state in its permit review must consider the local government approval process and conduct additional review to meet the U.S. EPA's environmental justice policies. These considerations are significant portions of the legal challenges to the permits that have recently been issued.

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

- **FINDING: UNLINED LANDFILLS RELEASE CONTAMINANTS INTO THE GROUNDWATER AND SURFACE WATERS OF THE STATE LONG AFTER THEY ARE CLOSED.**

Recent landfill regulations have improved the management and monitoring of existing landfills. Unfortunately, the last generation of unlined sanitary landfills are known to release varying amounts of chemicals in the form of leachate. Leachate is any liquid, or suspended components in liquid, that has percolated through or drained from solid waste. Leachate has the potential to contaminate local and regional groundwater and surface water. Leachate often contains a wide variety of potentially toxic chemicals. These chemicals represent a potential threat to health of those who live or otherwise use properties located near the old landfills. Leachate from municipal solid waste can contaminate groundwater and make it unusable or undesirable due to tastes and odors, reduced service life of appliances (e.g., dishwashers, hot water heaters, plumbing), fabric (clothes), etc. Because most landfill facilities were located in relatively remote areas near groundwater discharge features, the potential threat has been minimized.

As a result of the initiation of U. S. EPA RCRA 40 CFR Part 258 Solid Waste Disposal Facility Criteria (Subtitle D), North Carolina changed its Solid Waste Management Rules in October 1993. The result was significant changes in groundwater monitoring programs for active municipal solid waste landfill units. These changes include increased sampling frequency, routine detection monitoring for a more extensive constituent list, (including volatile organic analysis), statistical analysis of water quality data, and an automatic elevation to Phase II assessment monitoring if significant increases are reported. The rules also include formalized procedures for groundwater assessments and corrective action, and at least 30 years of post-closure monitoring.

The statewide network of water quality monitoring wells required at permitted landfills now numbers over 1,000 wells. Since 1989, all permitted municipal solid waste landfills in North Carolina have been required to monitor groundwater quality. As new facilities are permitted, and additional water quality assessments and investigations are initiated at contaminated sites, the network of wells will expand.

Groundwater detection monitoring systems are designed to provide an early warning of groundwater contamination. They allow water quality problems to be assessed and corrected before there is a real threat to public health. Monitoring systems at over 90 percent of the unlined landfills have shown evidence of some degradation of groundwater quality. The Solid Waste Section's Environmental Compliance Unit is responsible for implementing the Solid Waste Management Rules that prescribe water quality monitoring, assessment and corrective action for solid waste management facilities. The Solid Waste Section Environmental Monitoring program is designed to accomplish the following:

- Monitor the effect of the disposal unit on the area's ground and surface water quality.
- Evaluate the effectiveness of monitoring systems designed to detect contaminants leaving the site.
- Facilitate and evaluate groundwater assessment programs at facilities where contamination has been detected.
- Prioritize facilities for remedial action based on data and monitor remedial activities.
- Evaluate methane monitoring data and the appropriateness of methane corrective action plans.

Approximately 218 North Carolina landfills submit water quality data on a regular basis to the Solid Waste Section. These landfills include construction and demolition (C&D), land clearing and inert debris (LCID), municipal solid waste (MSW), industrial solid waste (ISW) landfills, tire monofills and illegal dump sites.

Eleven of the sites under assessment or corrective action at end of 1999 have mitigated their groundwater problems[2] during the year 2000 to the extent that they are no longer priority targets for assessment or corrective action. Approximately 74 of the 218 sites are currently conducting some phase of water quality assessment and/or corrective action that exceeds detection monitoring.

Corrective action can, and likely will, involve multi-pronged approaches. Best case scenarios may only call for landfill cap improvements. Other corrective measure scenarios may involve acquiring additional buffer to control land use, supplying public water to the surrounding area, voluntary deed restrictions of the contaminated property, and active remediation. The highest priority is given to the landfills that have documented water quality impacts to potable wells. This ranking ensures that appropriate and adequate steps are taken to eliminate potential health threats. The following corrective measures/controls have been, or are being implemented in response to each incident of known contamination in private drinking water wells.

- Require quarterly sampling and submission of data to the State Toxicologist for review.
- Provide public water to the effected residents.
- Acquire property for future controls.
- Abandon and replace contaminated wells with deeper, clean wells.

NATURAL DISASTERS

- **FINDING: NATURAL DISASTERS DRAMATICALLY INCREASE WASTE GENERATION.**

During FY 99-00, North Carolina experienced two major hurricanes. Hurricane Dennis struck six eastern counties on August 29, 1999. Hurricane Floyd devastated the North Carolina coast and inland counties on September 15, 1999. After Hurricane Floyd, sixty-six counties were designated a disaster area by presidential declaration. These natural disasters substantially increased the quantity of waste requiring management in FY 99-00. Hurricane Dennis increased disposal among coastal counties; Hurricane Floyd increased disposal in the eastern half of the state.

Unlike the analysis of Hurricane Fran in FY 96-97, separate disposal figures were tracked in counties affected by Hurricanes Dennis and Floyd. Instead of using projections for hurricane-related waste, as was done in FY 96-97, the Division attempted to gain actual figures for FY 99-00. Reports received from designated disaster counties show approximately 330,000 tons of municipal solid waste and construction and demolition waste can be attributed to Hurricanes Dennis and Floyd. Vegetative organic debris that goes into land clearing and inert debris landfills was not reported. Organic debris handled by Federal Emergency Management Authority (FEMA) in some counties was also unreported.

Organics may include pallets, crates and many other materials but it is primarily yard-type debris. In FY 96-97, after Hurricane Fran, local governments increased their organic recycling by approximately 141,827 tons. This debris was composted and mulched. After Fran, yard waste increased substantially, then dropped to normal growth levels the following year. The recovery of organics, particularly yard debris, as a result of Hurricanes Dennis and Floyd was 113,724 tons.

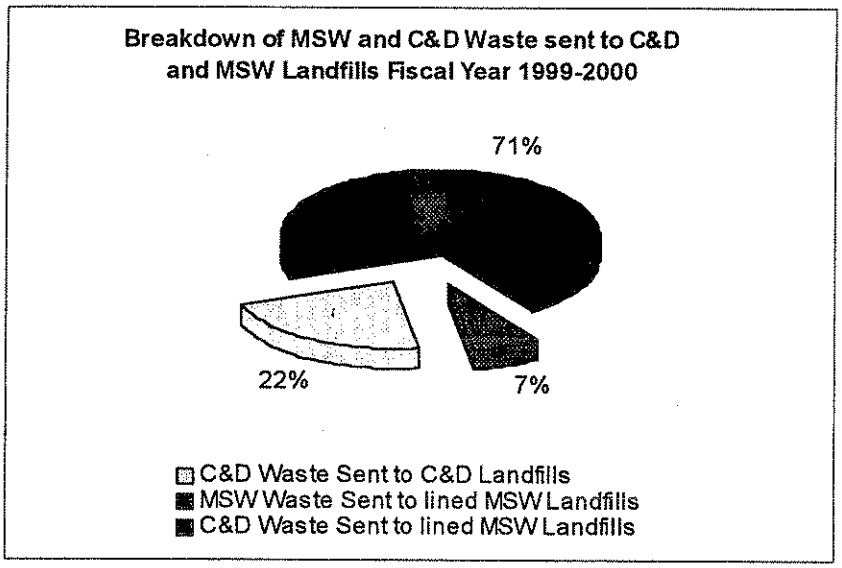
[2] This includes implementing plans to acquire additional permitted buffer and/or provide public water supplies to potentially impacted groundwater users while monitoring continues.

CONSTRUCTION AND DEMOLITION (C&D) WASTE

- **FINDING: CONSTRUCTION AND DEMOLITION WASTE IS A SIGNIFICANT PART OF THE WASTE STREAM.**

"Construction" and "demolition" when used in conjunction with "waste" or "debris" means solid waste resulting solely from construction, remodeling, repair, or demolition operations on pavement, buildings, or other structures, but does not include inert debris, land-clearing debris or yard debris.[3]

The transition to lined municipal solid waste landfills by January 1998 caused the number of permitted construction and demolition landfills to rise. It also enabled C&D waste sent to permitted facilities to be tracked separately. Although C&D waste can still be combined with municipal solid waste (MSW) and transported to a lined landfill, it costs more to do so.



In the latest statewide market assessment conducted in 1998, C&D waste accounted for approximately 29% of the total waste stream. In FY 99-00, a total of 2,056,369 tons of C&D waste was sent to both stand alone and C&D landfills placed on top of old municipal landfills. The tonnage sent to C&D landfills represents 22% of the total North Carolina (MSW + C&D) waste disposed. Based on the 1998 market assessment, it is projected that approximately 650,000 tons, or 7% of C&D waste, was sent to lined municipal solid waste landfills. In FY 99-00, the amount of C&D waste disposed in C&D landfills showed 872,534 tons sent to C&D landfills located on old landfills and 1,175,963 tons sent to stand-alone C&D units.

Besides the number of natural disasters that occurred across North Carolina this past fiscal year, one key factor influencing this C&D waste increase was the continuing economic and building growth. Because of the increase in C&D waste, C&D recycling has become an important, though not fully utilized solid waste management option. Four construction and demolition material recovery facilities are now in operation. Local government reports indicate 61,325 total tons of C&D recovery. The total tons was made up of 59,598 C&D tons and 1,727 tons of "other" materials, such as vinyl siding.

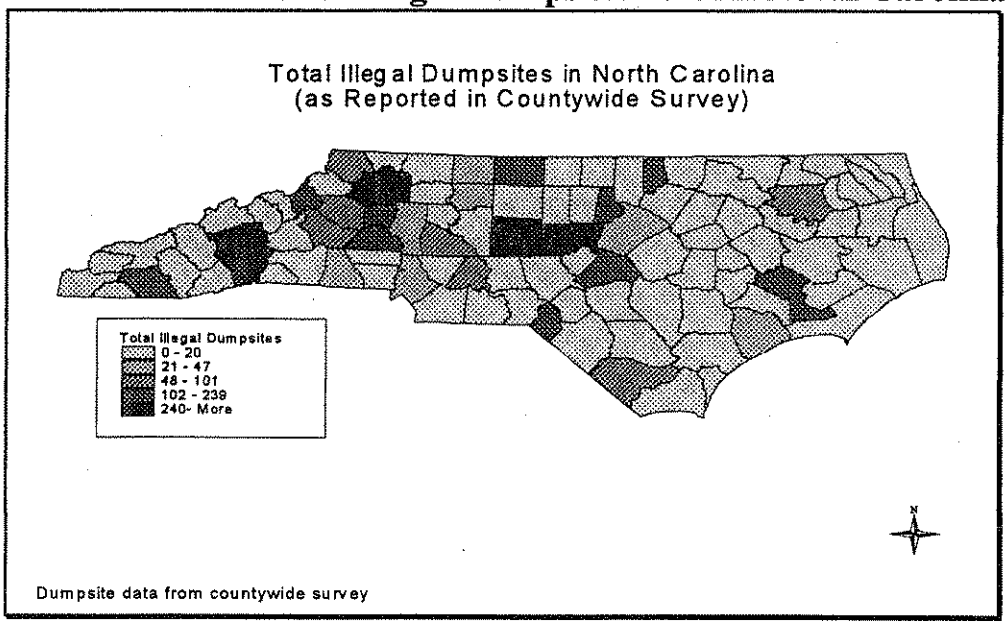
- **ILLEGAL DISPOSAL CONTINUES TO BE A PROBLEM, ESPECIALLY BY CONSTRUCTION, DEMOLITION AND LAND-CLEARING CONTRACTORS.**

Illegal dumping in North Carolina haunts ravines, abandoned and unsecured lots, farm land, private and public property, country dirt roads and dead-end roads. The vast majority of illegal dumpsites, 76 percent, were established by construction, demolition or land-clearing contractors. Illegal dumping touches work, lives and the environment in numerous ways. It affects human and environmental health, aesthetics, tourism, property values and development. Cleanup efforts are extensive and costly. At a minimum, 960 open illegal dumps exist

[3] GS 130A-290

within 97 counties. Roughly 3,551 closed[4] illegal dumpsites linger within 90 counties. On average, 45 open and closed dumpsites exist per county[5]. The following chart demonstrates these figures.

Estimated Number of Illegal Dumpsites Within North Carolina



Because illegal dumping is a local problem, it is more effectively and efficiently handled at the local level. Local enforcement of illegal dumping laws is necessary to deter current and future violators. North Carolina counties have been granted the authority in the General Statutes to draft ordinances to prevent and sanction illegal dumpers. The statutes authorize both counties and municipalities to respond to the improper disposal of solid waste. Many local governments either have an illegal dumping prevention program (of some degree or another) or they have the basic framework for such a program.

However, a number of counties do not have essential illegal dumping prevention and enforcement programs in place. Despite the ability for counties to construct and enforce local illegal dumping ordinances, 26 counties still do not have a specific ordinance that addresses illegal dumping. Of the 74 counties that do have an illegal dumping ordinance, only 54 offer the ability to prosecute violators criminally[6]. A survey of all counties showed that one-half without an illegal dumping ordinance feel that they have a moderate to severe illegal dumping problem.

Many local governments claim they do not have the resources (time, funds, staff, equipment), dedication, commitment, and/or the desire to develop an illegal dumping prevention program. But many other communities have recognized the problem and acted upon it.

LOCAL GOVERNMENT PROGRAMS

♦ FINDING: RECOVERY OF SOME TRADITIONAL RECYCLING MATERIALS IS DECLINING.

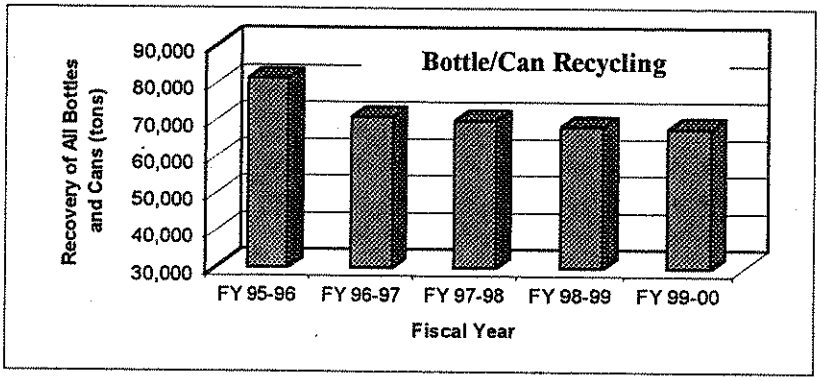
The overall local government recovery of materials in North Carolina increased by almost 14% in FY 99-00. The increase was primarily due to increased organics recycling, but traditional recyclable materials such as

[4] A closed dumpsite is one in which acceptable material has been buried in place and recorded with the Register of Deeds.

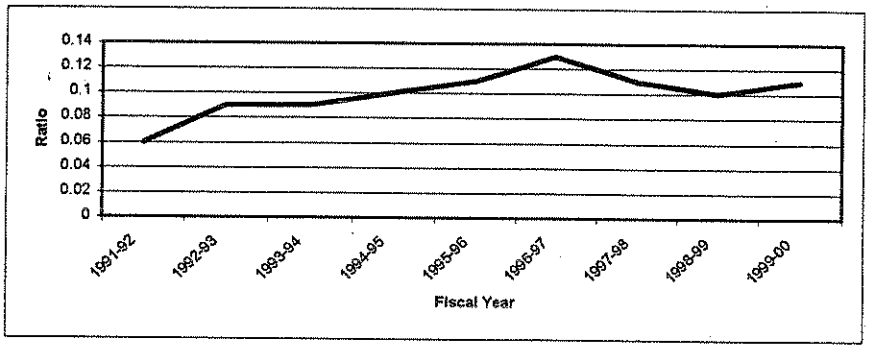
[5] This is most likely an underestimate of what truly exists within each county. Many counties do not actively search for illegal dumpsites, due to a lack of resources, time, desire, and/or an environmental enforcement officer.

[6] (this ability is specifically authorized within their local ordinance and was not meant to include General Statute §14-399 provisions, the Litter Law)

glass/plastic bottles and aluminum/steel cans continued to decline. The recovery of traditional recyclables has dropped annually since FY 95-96 despite a 6.3% increase in population over the same period. Despite changes in packaging that have resulted in more plastic and less aluminum and glass, this trend suggests participation in local recycling programs is declining and that the programs are losing their effectiveness. Most paper commodities (e.g., office paper, old newspaper, etc.) have experienced negative or no growth since FY 95-96. The chart highlights the decrease in glass, plastic bottles and cans recovered by local governments since FY 95-96. The scale has been increased to make the trend more visible.



The recovery of materials by local governments outpaced both growths in population and disposal, primarily because yard waste recovery increased. This strong growth increased the recovery ratio to 0.11. The following figure depicts the ratio in growth and recycling is outpacing that of disposal. This years increase is due to the large increase in organics recovery following Hurricane Floyd. Without significant changes or improvements to local government programs, the ratio will likely decrease next year.



Growth Rate of Recycling vs. Disposal FY 91-92 to FY 99-00

The following table presents tonnages of recyclable materials collected by local governments from FY 92-93 through FY 99-00. Fiscal Year 99-00 data indicate a 13.86 % increase in recovery from the previous year. The majority of the increase is due to a 113,000 ton increase in organics recovery, probably attributable to Hurricane Floyd. A similar increase in organics recovery was experienced after Hurricane Fran. The year following Hurricane Fran saw organics recovery drop to a normal level.

Local Government Diversion of Materials from Disposal FY 92-93 to FY 99-00

Material	FY 92-93	FY 93-94	FY 94-95	FY 95-96	FY 96-97	FY 97-98	FY 98-99	FY 99-00
Total Paper	151,676	164,806	185,270	212,577	228,025	216,121	233,339	241,859
Total Glass	32,611	37,537	38,088	49,601	44,978	43,449	41,623	41,826
Total Plastics	9,264	9,797	12,339	16,253	13,699	14,399	14,835	14,474
Total Metal*	44,302	51,468	59,483	65,977	77,252	81,262	77,564	86,480
Total Organics**	378,516	350,142	495,034	498,583	640,410	504,554	525,033	638,757
Special Wastes***	1,715	2,106	2,466	3,212	3,230	3,527	3,817	4,709
C & D Debris	N/A	N/A	N/A	N/A	N/A	N/A	N/A	59,598
Other	4,272	16,387	5,987	333	12,762	35,977	63,794	5,329
Totals	**622,356**	**632,243**	**798,667**	**846,536**	**1,020,356**	**899,290**	**960,005**	**1,093,032**
Per Capita Recovery (lbs.)	**182.17**	**182.00**	**226.19**	**235.59**	**279.19**	**242.03**	**254.40**	**285.61**
Recovery Ratio (Recycling:Disposal)	**0.09**	**0.09**	**0.10**	**0.11**	**0.13**	**0.11**	**0.10**	**0.11**

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

Two commodities, metals and corrugated cardboard, drove the remainder of the increase. The increase in metals during FY 99-00 came from an increase in the tonnage of white goods recovered by local governments. Although most paper commodities experienced recovery decreases in FY 99-00, old corrugated cardboard experienced a large increase, which boosted the total paper recovered by local governments. Several factors accounted for in the increase in old corrugated cardboard. Two counties that implemented disposal bans for corrugated cardboard experienced dramatic increases in recovery. Improved reporting by several communities also contributed to the increase, as did strong corrugated cardboard markets in the latter part of FY 99-00.

An analysis of the top 10 waste generating counties was conducted to determine effectiveness of local government recycling programs. It seems logical that the larger counties would contribute more to recycling than smaller, less populated counties, but this was not necessarily the case.

As table below demonstrates, only four of the top ten counties contributed more to overall recycling than to waste disposal. Mecklenburg County topped the list by contributing more than 20% of the tonnage recovered by local governments. This disproportionate contribution was due to the almost 54,000 tons of construction and demolition waste recovered by the County. These numbers demonstrate the power of construction and demolition debris recycling programs. Durham, Buncombe and Pitt counties also recycled more than they disposed.

At the other end of the spectrum, Cumberland County and Gaston County provided limited recycling efforts. Despite disposing of more than six percent of North Carolina's waste, these counties account for about one and one-half percent of North Carolina's recovery.

In all, the top ten waste producing counties accounted for more than 53% of all local government recycling. However, it is clear that some counties and their municipalities are contributing to the increase in the state's disposal burden.

Disposal vs. Recycling in Ten Largest Waste Producing Counties FY 99-00

County	Disposal	Recycling	Contribution to Disposal	Contribution to Recycling*
Mecklenburg	1,282,19	97,586	12.55 %	20.39 %
Wake	958,83	32,602	9.38 %	6.81 %
Guilford	756,75	29,392	7.41 %	6.14 %
Forsyth	422,82	15,436	4.14 %	3.22 %
Cumberland	389,28	2,790	3.81 %	0.58 %
New Hanover	275,93	10,298	2.70 %	2.15 %
Durham	267,30	17,687	2.62 %	3.69 %
Gaston	260,38	4,852	2.55 %	1.01 %
Buncombe	247,30	17,909	2.42 %	3.74 %
Pitt	209,76	28,282	2.05 %	5.91 %

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

- **FINDING: MARKET PRICES FOR MOST MAJOR RECYCLABLE COMMODITIES HAVE BEEN STABLE AND DO NOT INDICATE A LACK OF DEMAND FOR COLLECTED MATERIALS.**

The health of recycling markets for traditional commodities is reflected in the prices received for material. As depicted in the table below, FY 99-00 was generally a good year for recycling prices. Prices for many paper

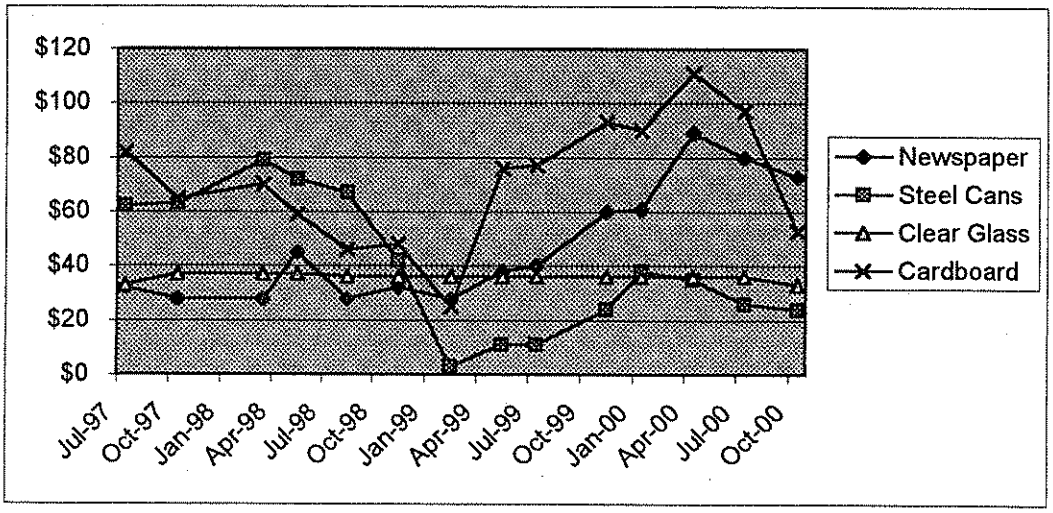
products, cardboard in particular, remained high throughout the year. Although prices for newsprint remained strong after the end of the fiscal year, prices for corrugated took a considerable tumble. Aluminum and plastics saw a general rise during FY 99-00, but steel cans remained depressed. Glass was, as always, very steady in pricing. However, the closure of the processing facility at Owens-Brockway in Winston-Salem near year's end made the marketing of glass by communities in western North Carolina more difficult.

Recycling Prices By Material- Fall 1999 through Summer 2000

Materials	Fall 1999	Winter 1999-00	Spring 2000	Summer 2000
Aluminum cans, lbs., loose	$.50	$.54	$.56	$.51
Steel cans, gross tons, baled	$24	$38	$35	$26
PETE, lbs., baled	$.06	$.07	$.09	$.12
HDPE, lbs., baled	$.11	$.11	$.12	$.15
Newsprint, ton, baled	$60	$61	$89	$80
Corrugated, ton, baled	$93	$90	$113	$97
Sorted white paper, ton, baled	$143	$237	$212	$208
Mixed paper, ton, baled	$28	$35	$50	$50
Clear glass, ton	$36	$36	$36	$36
Brown glass, ton	$25	$25	$25	$25
Green glass, ton	$6	$6	$6	$6

The Division of Pollution Prevention and Environmental Assistance surveyed a mix of cities and counties at the beginning of FY 99-00 to test local government interaction with recycling markets. Survey results revealed some acute regional problems, but in general found a healthy relationship between North Carolina recycling programs and markets. Ninety-three percent of respondents said they felt that markets allowed them to continue and strengthen their recycling programs. Over two-thirds of the communities surveyed indicated that markets would probably allow them to add materials to existing programs. Overall, the survey indicated the importance of building good long-term relationships with markets as a way to stabilize recycling programs and give them room to expand. Remote, rural areas of the state face the most difficulties in marketing some materials.

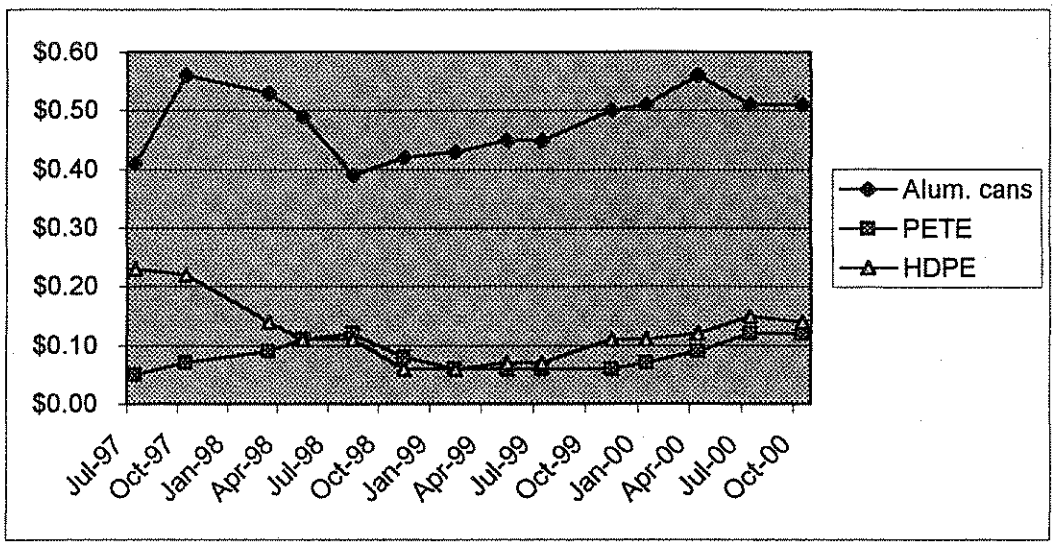
The following two figures show the price history for certain commodities in North Carolina. The data were tracked by the North Carolina Recycling Business Assistance Center in a quarterly survey of processors in eastern, central, and western North Carolina.



Quarterly Price Per Ton of Recyclable Materials

1997-2000

These charts show the volatility of prices. They also show that prices over the past three and one-half years have never gone negative for any commodity. Positive prices throughout indicate overall market demand for the commodities, although factors ranging from global economics to competition with virgin materials cause volatility.



Quarterly Price Per Ton of Recyclable Materials

1997-2000

- **FINDING: RECYCLING SERVICES AND MARKETS OFFERED BY THE PRIVATE SECTOR SUFFER OCCASIONAL SETBACKS BUT ARE EXPANDING. THIS GIVES WASTE GENERATORS MORE OPTIONS FOR DIVERTING MATERIALS FROM DISPOSAL.**

The recycling of construction and demolition wastes proved a challenging issue in FY 99-00. A large central processing center in Mecklenburg County struggled with operational and market difficulties and eventually shut down. A similar facility in Havelock also experienced many problems. At the same time, however, processors of specific construction waste streams experienced growth. These new endeavors included wallboard processors in Union and Chatham Counties and a carpet-recycling firm in Charlotte and Raleigh. As FY 00-01 began, many looked to the opening of a private centralized processor in Raleigh to demonstrate a properly capitalized and well planned C&D recycling facility. Private C&D recyclers also began or continued operations in northeastern N.C., and a number of Habitat for Humanity operations expanded sales in their construction and demolition materials reuse businesses.

The numbers of jobs in the recycling sector and the numbers of listings in North Carolina Recycling Markets Directory are two indicators of the expansion of private sector recycling markets. A DPPEA study conducted in FY 99-00 documented a 12% increase in private sector recycling employment over the past five years. At the same time, the number of businesses listed in the North Carolina Recycling Markets Directory increased 29% between 1989 and 2000.

- **FINDING: DISTINCT DIFFERENCES EXIST BETWEEN SUCCESSFUL AND UNSUCCESSFUL LOCAL GOVERNMENT REDUCTION PROGRAMS. SUCCESSFUL PROGRAMS HAVE A VARIETY OF COMPONENTS THAT NEED TO BE ADOPTED BY MORE LOCAL GOVERNMENTS.**

Since the early-1990's, local governments have provided a consistent level of recycling services. These programs have provided most North Carolina citizens with dependable access to recycling opportunities.

County waste reduction programs have come a long way since the early 1990's. Most have been transformed from "green box" systems to staffed convenience centers. This transformation has greatly improved the image of county solid waste management programs and cuts down on illegal disposal. Most counties, however, still have more to do to operate effective waste reduction programs. The table below provides a checklist of twenty programs that can be part of a waste reduction program. The list is not conclusive, but lists the most common options tracked in the annual reports. The average county waste reduction program is likely to only use eight

options or 40%, of the 20 most common. The most successful county waste reduction programs generally use 14 or more of these programs.

Average County Waste Reduction Programs

Program	Yes/No	Program	Yes/No
In-House Reduction	**Yes**	Local Disposal Ban	No
Backyard Composting	No	Pay As You Throw	No
Source Reduction	No	Oil Recycling	**Yes**
Reuse	No	Oil Filter Recycling	No
Recycling Program	**Yes**	Antifreeze Recycling	No
Curbside	No	Battery Recycling	**Yes**
Drop-off	**Yes**	HHW Collection	No
Other Program	**Yes**	Mulching/Composting	**Yes**
Education Program	**Yes**	C&D Reuse/Recycling	No

Municipal waste reduction programs in North Carolina are like county programs, in that they only provide basic recycling services. Although municipalities may rely on counties to provide some of their services, (such as household hazardous waste collection), there are many programs not being utilized. For example, of the 297 municipalities with recycling programs less than 10 % offer backyard composting.

County and municipal waste reduction programs vary widely. Fifty-seven percent of county drop-off recycling programs are operated by county employees. On the other hand, seventy-seven percent of municipal programs are much more likely to use private service providers.

Many smaller municipalities use private service providers because they lack the capital needed to operate their own recycling programs. However, many of these local governments appear to believe that once a recycling contract is in-place they have finished the job. A comparison of the recovery rates between public-run and contracted recycling programs found that publicly operated systems recover approximately 83 pounds more per household. Municipal governments that contract for recycling services need to take a more active role in waste reduction. They could significantly increase their recovery rates by the addition of new low cost programs such as junk mail reduction or backyard composting.

Counties continued to use drop-off centers as their primary recovery method. Ninety-three counties utilized drop-off centers for the collection of recyclable materials. On the other hand, municipalities continue to rely on curbside recycling. Of the 297 municipalities providing recycling services, 247 rely on curbside collection for at least a portion of their recycling efforts.

Curbside and drop-off programs make up the vast majority of recycling conducted by local governments. In FY 99-00, these programs contributed approximately 370,000 tons to overall recovery. The quantity contributed by each program type was about equal, with drop-off programs recovering slightly more than curbside programs. Total recovery by program type is provided in the table.

Total Recovery by Program

Program Type	Total Tons		Percent of Total Recovery	
	FY 98-99	FY 99-00	FY 98-99	FY 99-00
Curbside	162,450	173,569	37 %	36 %
Drop-off	155,163	195,790	35 %	41 %
Mixed waste processing	8,814	7,412	2 %	2 %
Other programs	115,308	101,703	26 %	21 %

Due to changes in the reporting method, specific changes in "Other" programs could not be determined. However, the tonnage recovered from "Other" programs did decrease by approximately 13,600 tons. Despite decreased recovery during FY 99-00, this category continues to offer the best opportunity for increased waste reduction. Construction and demolition debris recycling, multifamily recycling services and school based recycling programs provide the most promise.

Although popular interest and participation in recycling has lagged for the past few years, having local governments maintain public recycling services provides a foundation for increasing recovery in the future.

Adding programs is not the only way to achieve waste reduction success. Another difference between successful and unsuccessful programs is the ability to customize programs for local conditions. Rural communities and urban/suburban communities face different challenges that need to be addressed using unique waste reduction strategies.

In rural areas the waste stream may be predominantly residential. In these cases, traditional residential recovery programs, a strong education program and a waste audit program focused on a handful of industries would likely result in a successful program. In urban areas, as little as 25% of the waste stream may be residential. Urban waste streams require local governments to look beyond residential waste. They must take a more active role in commercial and industrial waste reduction and the recovery of construction and demolition waste. Unfortunately, the majority of local governments are not doing so.

- **FINDING: LOCAL GOVERNMENT RECYCLING EFFORTS WOULD BE IMPROVED BY INCREASING THE NUMBER OF NEW RECYCLING PROCESSING FACILITIES.**

Material processing facilities consolidate items for efficient transportation. They also provide a crucial link between locally collected materials and distant end-use markets. MRF's accept commingled materials, separate them by specific commodities, and often bale or densify materials. By accepting commingled materials MRF's help communities avoid the cost and logistics of curbside separation. The table below is an indicator of the health of the processing infrastructure in North Carolina. It shows a list of population centers served and not served by MRF's for FY 99-00.

N. C. Communities With and Without MRF's

Served by MRF's	Not served by MRF's
• Greensboro	• Asheville
• High Point	• Fayetteville
• Charlotte/Mecklenburg	• Raleigh/Cary/Wake Co.
• Winston-Salem	• Burlington/Alamance Co.
• Durham	• Wilmington
• Greenville	• Jacksonville
• Catawba County	• Chapel Hill/Orange Co.
• New Bern/Craven	• Kannapolis/Concord/Salisbury
• Davidson Co. including Lexington/Thomasville	• Gastonia/Shelby
	• Wilson/Rocky Mount
	• Goldsboro
	• Statesville/Mooresville
	• Most rural counties in the state

The presence of a MRF can make a difference in the kind and amount of materials collected per capita. The table on the next page shows FY 99-00 data for communities that are similar in size.

MRF vs. Non-MRF Communities

	Community with MRF: Greensboro		Community without MRF: Raleigh	
Population category 100,000+	Materials Collected Newsprint, magazines, cardboard, chipboard, brown paper grocery bags, #1 and #2 plastics (not just soda bottles and milk jugs), aluminum cans, steel cans, aerosol cans, glass bottles and jars.	Curbside recovery 138 lbs. per capita	Materials Collected Newsprint, magazines, white junk mail, #1 and #2 plastic drink bottles, aluminum cans, steel cans, glass bottles and jars	Curbside recovery 86 lbs. per capita
	Community with MRF: High Point		**Community without MRF: Wilmington**	
Population Category 50,000 to 100,000	Materials Collected Newsprint, magazines, #1 and #2 plastic bottles, aluminum cans, steel cans, glass bottles and jars	Curbside recovery 76 lbs. per capita	Materials Collected Newsprint, cardboard, #1 and #2 plastic bottles, aluminum cans, steel cans, glass bottles and jars.	Curbside recovery 66 lbs. per capita

Per capita recovery in the table is calculated by dividing the total tons collected curbside by total municipal population

As the table shows, Greensboro and High Point, with programs supported by MRF's, have achieved higher per capita curbside recycling rates in addition to volume. The contrast between Greensboro and Raleigh also points out the difference in the mixture of materials collected. Although other factors can affect the relative success of recycling programs, MRF's give local programs a marketing "foundation" that allows greater flexibility in both the type of materials collected and the options and costs collections bring.

MRF's have also proven their worth by offering much-needed market outlets for smaller municipalities and counties. The Eastern Carolina Vocational Center MRF in Greenville receives materials from many small towns and counties within and surrounding Pitt County. It also serves as a critical regional outlet for collected glass. Private haulers who serve small towns with curbside services rely on ECVC to take their materials, sometimes from communities over 100 miles away. Mecklenburg County's MRF also offers a market for materials collected by local governments in adjacent Union County.

- **FINDING: IMPLEMENTATING PUBLIC RECYCLING EDUCATION PROGRAMS INCREASES RECOVERY.**

Of the 397 local governments in North Carolina with recycling programs, 50% indicated they have an education program that either informs residents about the importance of waste reduction or describes other solid waste programs. The variety of education programs and the subjectiveness of some of the data make it difficult to draw broad conclusions on how effective these programs can be. What is clear is that communities with education programs recover more material per household than those without. Communities with education programs appear to recover 5% to 10% more per household.

A correlation was also found among communities with education programs. Communities with comprehensive education programs recover more per household than those with simple education programs. Providing specific estimates on how much more is collected per household is very difficult. The variability in how data was reported and the differing levels of service affect the validity of this analysis.

Participation for local government recycling programs remained low during FY 99-00. Curbside programs report an average participation rate of 57% while drop-off programs report an average rate of 32%. The average participation rate for all local government recycling programs was 47%. Combined the low participation rate and the limited number of communities with education programs clearly decreased the amount of waste diverted. Increasing participation through enhanced education could have dramatic impacts on the quantity of waste recovered for recycling.

- **FINDING: SOURCE REDUCTION AND REUSE ARE UNDERUTILIZED AS WASTE MANAGEMENT STRATEGIES.**

The number of source reduction and reuse programs operated by local governments remained relatively constant during FY 99-00. Only seven local governments added new programs. Although source reduction and reuse programs are generally low cost options for diversion, local governments continue to overlook these programs. Of the programs types listed below, backyard composting and swap shops show the most promise for further expansion. The potential for increases in these two program types is partially attributed to the annual funding these programs receive from the Department of Pollution Prevention and Environmental Assistance.

Source Reduction and Reuse Programs Operated by Local Governments

Program Type	FY 1994-95	FY 1995-96	FY 1996-97	FY 1997-98	FY 1998-99	FY 1999-00
Source Reduction Programs						
Backyard Composting	92	70	82	81	53	59
Grass Cycling	49	40	41	43	41	36
Xeriscaping	12	12	11	13	12	11
Junk Mail Reduction	20	40	56	55	57	64
Enviroshopping	35	27	36	35	35	32
Promotion of Non-toxics	38	34	39	35	30	31
Other	11	10	9	1	5	6
Reuse Programs						
Swap Shops	N/A	13	10	17	22	23
Paint Exchange	17	22	28	25	27	23
Waste Exchange	18	13	11	14	8	8
Pallet Exchange	N/A	N/A	N/A	N/A	7	7
Other	N/A	N/A	4	6	15	10
Local Governments with Programs	N/A	104	116	123	110	117

- **FINDING: DISPOSAL BANS ARE EFFECTIVE AND PLAY A SIGNIFICANT ROLE IN WASTE REDUCTION. THE STATEWIDE DISPOSAL BAN ON YARD WASTE HAS BEEN PARTICULARLY EFFECTIVE.**

Disposal diversion ordinances are slowly growing as a method of increasing waste reduction in North Carolina. Although DDO's can range from outright bans of materials (e.g., aluminum cans) to requiring that material be separated for recycling, their underlying purpose is to expand waste reduction. The State currently bans several materials from landfills, including used motor oil, aluminum cans and white goods. Sixty-eight North Carolina local governments reported using DDO's to divert additional materials. Some municipalities report county level ordinances, so the actual number of communities with DDO's may be slightly lower.

The majority of DDO's in North Carolina address corrugated cardboard, although some divert clean wood, pallets and even traditional household recyclables. Data available from three communities that recently passed DDO's indicate these ordinances can be quite successful. In 1998, the City of Durham passed a recycling

ordinance that required the separation of specific household materials, such as: glass and plastic bottles. After enforcement at the residential level began on January 1, 2000, the City experienced a 27% increase in is per capita recovery for the rest of the fiscal year. The DDO also affected commercial and industrial generators, but by the end of FY 99-00, the City had yet to hire a commercial/industrial enforcement officer.

Columbus and Iredell Counties passed disposal diversion ordinances that banned the disposal of corrugated cardboard at county disposal sites. Both communities experienced increases in corrugated cardboard recovery. The City of Whiteville, in Columbus County, saw corrugated cardboard recovery increase 1862% from FY 98-99 to FY 99-00 *even though the disposal ban was in-place for only a portion of the year.*

Clearly, well-designed disposal diversion ordinances have dramatic affects on the local waste stream. Local governments should be encouraged to use DDOs to increase waste reduction. Many materials, such as pallets and corrugated cardboard, have well defined recycling infrastructures that are underutilized. A recent analysis found that if each North Carolina county banned the disposal of pallets and achieved a 70% capture rate, more than 197,000 tons of pallets and wood crates would be diverted from disposal per year.

The table below validates the effectiveness of North Carolina's yard waste disposal ban, which went into effect, January 1, 1993. Over 600,000 tons of yard waste materials were diverted from disposal in FY 99-00. The largest portion was converted into mulch and compost by local governments. Over 77% of managed yard waste went to such uses; the remainder went to land clearing and inert debris landfills or other private facilities.

Yard Waste Disposal Programs

Destination of Materials	Number of Local Govt.'s	FY 99-00 total tons
End users (direct delivery)	90	52,857
Local govt. mulch/compost facility	187	556,792
TOTAL DISPOSAL DIVERSION		**609,649**
Other public facility	75	114,537
Private facility	26	55,769
C & D Landfill	23	3,336
LCID Landfill	48	122,037
YARD WASTE TOTALS		**790,791**

Note: "Yard Waste Totals" exclude tonnages for "other public facilities" since it is assumed these tons were captured under other categories.

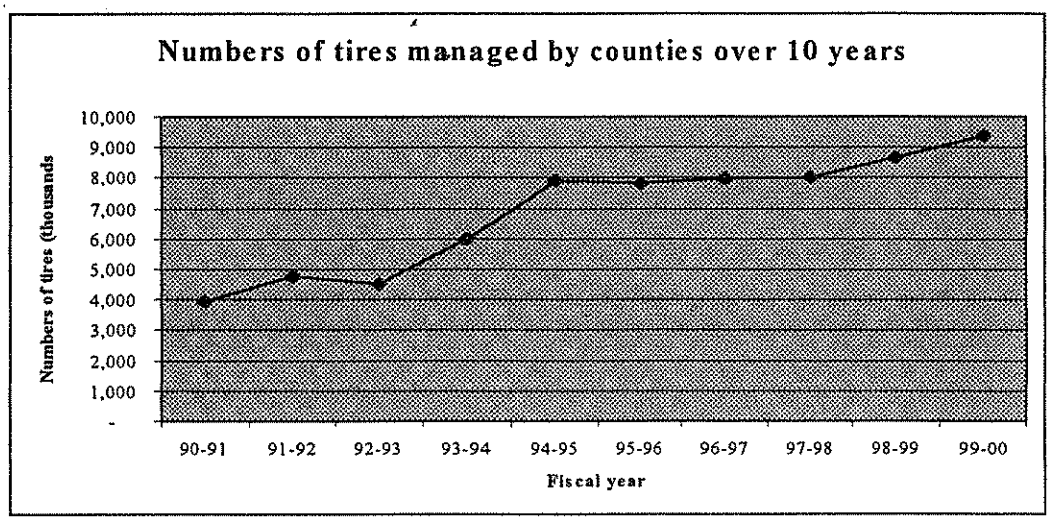
An undocumented portion of these materials may be converted to mulch and compost as well. The 609,649 tons of yard waste directly diverted represent an 18% increase over FY 98-99. Two hurricanes, a winter storm in the Piedmont, and better record keeping by local governments may have impacted this increase.

- **FINDING: THE SCRAP TIRE PROGRAM, SUPPORTED BY AN ADVANCE DISPOSAL FEE, SUCCESSFULLY HANDLES A HARD-TO-MANAGE PORTION OF THE WASTE STREAM WHICH RESULTS IN DECREASES IN ILLEGAL DUMPING. LEGISLATIVE CHANGES ARE NEEDED TO MAINTAIN THE PROGRAM'S CURRENT STATUS.**

A scrap tire advance disposal fee is collected at the point of sale for new tires. All counties are required to have a scrap tire program, which is funded by the fees collected. Counties are allocated funds based on their populations. The North Carolina Department of Revenue collected about $10 million in FY 99-00 through this program.

The Waste Management Trust Fund is administered by DPPEA and receives five percent of the net proceeds. This fund is used for county recycling grants. The Scrap Tire Disposal Account is also used to cleanup illegal tire sites and provides grants to counties for their scrap tire programs. In FY 99-00 counties reported receiving about 9.4 million tires. The number of tires has increased during the past nine years, which reflects both the success of the program and a decrease in illegal dumping.

Since 1994, funds from the Scrap Tire Disposal Account have been used to inventory and clean up nuisance tire sites. Approximately 6.6 million tires have been cleared from 294 sites and numerous countywide cleanup events. Currently 42 sites containing approximately 133,000 tires, remain to be cleaned up. New sites, most containing less than 10,000 tires, continue to be found and scheduled for cleanup.



The 2% passenger tire advance disposal fee funds the current program. On June 30, 2002 that will revert to 1%. The higher fee should be continued because the reversion will cause counties to incur large program cost deficits and eliminate the state tire cleanup program. Counties needing to fund their deficits may implement landfill disposal fees, which could lead to an increase in illegal tire dumping.

The scrap tire program currently funds a time-limited position to coordinate cleanup of illegal tire sites and provide technical assistance to counties. It should be continued past its sunset of June 30, 2001 to maintain the same level of service and assistance provided over the past three years. A full analysis of the scrap tire program and the legislative changes it needs can be found in the October 2000 *Scrap Tire Management Special Report* presented to the General Assembly. A copy of the report is available on the Section's web site.

- **FINDING: MANY AREAS OF THE STATE CONTINUE TO LACK BASIC SERVICES AND PROGRAMS TO DIVERT USED OR WASTE OIL, OIL FILTERS, ANTIFREEZE AND HOUSEHOLD HAZARDOUS WASTE FROM DISPOSAL.**

The table on the next page shows trends in the collection of used motor oil, oil filters, antifreeze, and household hazardous waste by local North Carolina governments. Fiscal Year 2000 saw a substantial increase in number of gallons of used oil received by local public collection programs. The 18% increase is in keeping with a general upwards trend in gallons collected over the past four years, despite the lack of program growth. Better educational efforts, record keeping or a combination of both may be the reason for the increase.

Collection of Used Motor Oil, Filters, Antifreeze, Lead-Acid Batteries and HHW

	FY 95-96	FY 96-97	FY 97-98	FY 98-99	FY 99-00
Used Motor Oil					
Number of local programs	118	122	115	127	126
Gallons collected	601,744	575,859	646,646	736,436	871,533
Oil Filters					
Number of local programs	N/A	N/A	8	11	14
Tons collected	N/A	N/A	6	6.61	
Antifreeze					
Number of local programs	59	48	46	46	49
Gallons collected	18,859	9,026	8,770	9,568	15,977
Lead Acid Batteries					
Number of local programs	85	90	84	79	90
Number collected	50,458	59,112	61,118	58,237	74,737
Household Hazardous Waste					
Number of programs	19	20	20	17	24
Number of permanent sites	8	7	9	10	13
Tons collected	389.95	653.24	657.29	1,017.78	965.58
Total cost reported	N/A	$1,402,485 ($2,147/ton)	$1,301,638 ($1,875/ton)	$1,672,271 ($1,643/ton)	$1,644,818 ($1,703/ton)

Despite the rise in collected gallons, large gaps in public oil collection services exist statewide. Twelve rural counties have no public collection sites whatsoever, while another 26 counties have only one. Many of these 26 counties are geographically large - some citizens would need to drive 40 miles or more roundtrip to recycle their oil at a public collection site. Moreover, only 38 out of 529 municipalities offer public oil collection services.

The infrastructure gaps are even greater for other automotive-related products. Only 14 local governments currently collect oil filters and 49 accept antifreeze. There does seem to be an upward trend in the number of local programs for both materials.

In terms of tons collected, overall costs and the number of local governments involved in their collection the recovery of household hazardous waste remained steady. There appear to be no major shifts in the willingness of counties or municipalities not currently involved in HHW collection to start. The result is that citizens in most counties have no alternative except to dispose of HHW in their solid waste. As a result, the vast majority of North Carolina's household hazardous waste is disposed of in landfills.

- **FINDING: BUY-RECYCLED PROGRAMS ARE CRITICAL TO STRENGTHENING RECYCLING MARKETS.**

It is a commonly understood maxim that recycling markets can only exist if recycled content products are purchased. Increased levels of recycled content in common products like paper, glass and metals, coupled with the advent of new products, such as plastic lumber and finger-jointed lumber, account for the dramatic increase in recycling collections through the 1990's.

North Carolina has taken a major stride in boosting paper recycling markets by specifying that state term contracts exclude virgin-only paper products. As a result, state agency recycled paper purchases increased dramatically in FY 99-00. Agencies reported spending $43,510,743 on recycled paper. This accounts for 84% of all paper products purchased and an increase of 20% in one year. The North Carolina Department of Administration continues to look for new recycled products to make available to state and local agencies. Some examples include re-refined oil and recycled content carpet.

The issues surrounding solid waste management have grown more complex. Solutions to the problems are not easily identified and lack consensus. Consequently, the Department recommends that a solid waste study committee be established to examine the issues presented here.

FOR MORE INFORMATION

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1646 Mail Service Center
Raleigh, NC 27699-1646
(919) 733-0692
http://wastenot.enr.state.nc.us

North Carolina Department of Environment
And Natural Resources
Division of Pollution Prevention &
Environmental Assistance
1639 Mail Service Center
Raleigh, NC 27699-1639
(919) 733-6500
http://www.p2pays.org

APPENDIX A-1: PUBLIC AND PRIVATE MUNICIPAL SOLID WASTE LANDFILLS (INCLUDES CONSTRUCTION AND DEMOLITION LANDFILLS***), DESCENDING ORDER OF TONS, FY 1999-2000

PERMIT #	FACILITY	TONS						FACILITY TYPE
		1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	
1304	BFI-CHARLOTTE MTR SPEEDWAY LANDFILL V	548,442	593,659	621,833	875,286	941,848	1,101,304	MSWLF
9209	WAKE COUNTY LANDFILL					533,345	598,202	MSWLF
8201	BFI-SAMPSON COUNTY DISPOSAL INC	163,175	231,233	258,194	385,527	574,579	541,666	MSWLF
6204	UWHARRIE ENV. REG. LANDFILL		13,055	62,126	293,753	547,286	531,407	MSWLF
0803	ADDINGTON-EAST CAROLINA REG LF	282,654	361,517	358,284	365,737	411,117	504,330	MSWLF
3406	PIEDMONT SANITARY LANDFILL	507,123	552,899	606,859	551,748	379,945	348,182	MSWLF
3402	WINSTON-SALEM, CITY OF - LANDFILL	300,571	299,140	310,660	299,740	305,930	301,098	MSWLF
4112	GREENSBORO, CITY OF, SOLID WASTE MAN FAC				192,362	250,375	275,061	MSWLF
6013	NORTH MECKLENBURG C&D LANDFILL	195,345	248,115	281,168	246,232	228,934	269,545	CDLF
7304	ADDINGTON-UPPER PIEDMONT REG LF			150	104,026	256,943	248,401	MSWLF
1803	CATAWBA COUNTY LANDFILL				184,526	165,360	173,722	MSWLF
1403	FOOTHILLS ENVIRONMENTAL LANDFILL					106,779	173,271	MSWLF
6504	NEW HANOVER COUNTY LANDFILL	80,786	114,365	163,648	155,442	101,105	163,860	MSWLF
9214	BFI-HOLLY SPRINGS DISPOSAL INC	196,607	234,408	219,504	254,901	310,069	161,772	CDLF
4104	HIGH POINT CITY OF - LANDFILL	98,795	93,248	101,579	110,687	117,836	151,049	MSWLF
4103	GREENSBORO, CITY OF CDLF				29,319	45,292	140,184	CDLF
2601	CUMBERLAND COUNTY LANDFILL					138,603	131,134	MSWLF
9203	WAKE COUNTY CDLF				20,879	57,933	122,476	CDLF
1107	BUNCOMBE COUNTY MSW LANDFILL				85,466	109,734	120,143	MSWLF
6709	ONSLOW COUNTY SUBTITLE D LANDFILL				47,458	105,477	118,411	MSWLF
25-09	CRSWMA- INTERIM REGIONAL LANDFILL						117,751	MSWLF

APPENDIX A-1: PUBLIC AND PRIVATE MUNICIPAL SOLID WASTE LANDFILLS (INCLUDES CONSTRUCTION AND DEMOLITION LANDFILLS***), DESCENDING ORDER OF TONS, FY 1999-2000

PERMIT #	FACILITY	TONS						FACILITY TYPE
		1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	
6505-I	NEW HANOVER WASTE-TO-ENERGY FACILITY	95,283	133,439	133,128	129,200	127,589	112,132	MSWLF
4903	IREDELL COUNTY SANITARY LF	108,342	103,586	143,752	119,003	118,742	111,914	MSWLF
9606	WAYNE COUNTY				37,216	99,601	106,239	MSWLF
8202	BFI-SAMPSON COUNTY C&D UNIT		18,686	191,254	25,712	32,414	103,942	CDLF
2906	DAVIDSON CO MSW LINED LANDFILL	73,653	92,137	86,544	79,403	95,524	101,864	MSWLF
2608	FORT BRAGG C&D LANDFILL				33,104	61,263	101,102	CDLF
7803	ROBESON COUNTY LANDFILL					90,378	96,147	MSWLF
5102	JOHNSTON COUNTY LANDFILL				61,933	96,923	94,599	MSWLF
3301	EDGCOMBE COUNTY CDLF				5,878	18,935	86,968	CDLF
0104	AUSTIN QUARTER SWM FACILITY	68,240	67,484	65,897	69,765	79,128	85,040	MSWLF
8003	ROWAN COUNTY LANDFILL	105,367	83,378	65,641	71,762	63,812	80,714	MSWLF
7904	ROCKINGHAM COUNTY LANDFILL		52,474	59,829	69,056	83,155	80,379	MSWLF
3606	GASTON COUNTY LANDFILL				150,775	111,395	77,839	MSWLF
3412	WINSTON-SALEM CITY OF C&D LANDFILL			34,275	84,509	89,920	77,372	CDLF
9704	WILKES COUNTY MSWLF	53,892	41,372	57,827	58,196	63,217	71,136	MSWLF
2301	CLEVELAND COUNTY LANDFILL					62,479	70,776	MSWLF
6801	ORANGE COUNTY LANDFILL	61,058	57,889	58,590	59,305	60,368	62,404	MSWLF
5504	BFI-LAKE NORMAN LANDFILL					6,766	61,317	CDLF
1007	BRUNSWICK COUNTY CDLF				14,254	26,865	59,996	CDLF
8606	SURRY COUNTY LANDFILL				26,855	21,660	51,075	MSWLF
4903	IREDELL COUNTY C&D UNIT	17,400	24,278	31,860	30,620	45,471	50,585	CDLF
4407	HAYWOOD CO WHITE OAK LANDFILL	34,736	38,630	39,340	42,899	44,023	47,187	MSWLF
3606	GASTON COUNTY C&D LANDFILL						45,837	CDLF

APPENDIX A-1: PUBLIC AND PRIVATE MUNICIPAL SOLID WASTE LANDFILLS (INCLUDES CONSTRUCTION AND DEMOLITION LANDFILLS***), DESCENDING ORDER OF TONS, FY 1999-2000

PERMIT #	FACILITY	TONS						FACILITY TYPE
		1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	
1107	BUNCOMBE COUNTY C&D UNIT				15,089	30,899	43,147	CDLF
5403	LENOIR COUNTY CDLF				15,832	18,104	40,664	CDLF
9003	GRIFFIN FARMS C&D LANDFILL		17,070	34,550	36,460	40,951	40,658	CDLF
0105	COBLE'S C&D LANDFILL					14,111	40,488	CDLF
5503	LINCOLN COUNTY LANDFILL	34,090	34,238	31,596	35,391	38,438	40,065	MSWLF
8401	ALBEMARLE, CITY OF-LANDFILL				29,748	4,488	39,920	MSWLF
9801	WILSON COUNTY CDLF				11,973	19,352	39,785	CDLF
2504	CRSWMA - INTERIM REGIONAL LF	110,798	118,679	144,202	130,558	138,816	38,589	MSWLF
9601	WAYNE COUNTY CDLF				5,154	17,630	38,342	CDLF
5703	MACON COUNTY LANDFILL	18,779	19,474	19,987	27,205	36,130	36,844	MSWLF
6708	CAMP LEJEUNE MSW LANDFILL				19,629	58,694	36,652	MSWLF
8202	BFI-SAMPSON COUNTY LANDFILL						35,528	MSWLF
5101	JOHNSTON COUNTY C&D LANDFILL					4,494	33,842	CDLF
9001	UNION COUNTY C&D					15,481	33,670	CDLF
2803	DARE COUNTY C&D LANDFILL	16,649	14,638	18,417	20,469	21,788	32,495	CDLF
6301	MOORE COUNTY C&D LANDFILL						31,849	CDLF
6801	ORANGE COUNTY C&D UNIT	63,553	31,342	37,832	30,168	33,667	30,515	CDLF
8301	SCOTLAND COUNTY CDLF				12,058	28,212	26,785	CDLF
1302	CABARRUS COUNTY CDLF				5,107	19,236	26,292	CDLF
8401	ALBEMARLE, CITY OF, CDLF				10,173	28,651	23,903	CDLF
3902	GRANVILLE COUNTY CDLF				7,744	20,656	23,445	CDLF
2601	CUMBERLAND COUNTY C&D UNIT				23,674	36,381	21,377	CDLF
2002	CHEROKEE COUNTY MSW FACILITY				8,248	18,374	19,470	MSWLF

APPENDIX A-1: PUBLIC AND PRIVATE MUNICIPAL SOLID WASTE LANDFILLS (INCLUDES CONSTRUCTION AND DEMOLITION LANDFILLS***), DESCENDING ORDER OF TONS, FY 1999-2000

PERMIT #	FACILITY	TONS						FACILITY TYPE
		1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	
0501	ASHE COUNTY LANDFILL					17,877	19,454	MSWLF
4302	HARNETT COUNTY CDLF				3,066	7,208	18,472	CDLF
8807	TRANSYLVANIA COUNTY LANDFILL	16,452	9,294	11,533	14,082	15,585	18,439	MSWLF
8602	SURRY COUNTY C&D LANDFILL					19,488	16,745	CDLF
6403	NASH COUNTY C&D LANDFILL						15,357	CDLF
6019	MECKLENBURG COUNTY LANDFILL						14,972	CDLF
1203	BURKE COUNTY CDLF				4,647	12,738	13,938	CDLF
2301	CLEVELAND COUNTY CDLF				5,857	13,069	13,238	CDLF
8103	RUTHERFORD COUNTY C&D UNIT	14,935	12,104	9,744	8,527	9,559	12,102	CDLF
1306	HIGHWAY 49 C&D LANDFILL AND RECYCLING						11,586	CDLF
4501	HENDERSON COUNTY C&D LANDFILL						11,258	CDLF
5901	MARTIN COUNTY C&D LANDFILL	1,936	3,530	8,141	9,189	9,775	10,828	CDLF
07A	BEAUFORT COUNTY DEMO LANDFILL	9,573	8,845	11,240		8,914	10,140	CDLF
6401	NASH COUNTY CDLF					5,453	9,796	CDLF
5301	LEE COUNTY C&D LANDFILL	3,893	5,370	5,669	6,833	9,537	9,708	CDLF
0104	AUSTIN QUARTER C&D UNIT	9,014	9,299	10,824	10,499	10,240	8,079	CDLF
4303	HARNETT CO ANDERSON CRK C&D LANDFILL			1,890		9,737	7,872	CDLF
7803	ROBESON COUNTY CDLF						7,315	CDLF
5704	HIGHLANDS C&D LANDFILL	4,379	4,356	3,681	4,531	7,018	6,968	CDLF
7002	PASQUOTANK COUNTY C&D LANDFILL		1,794	7,275	8,606	8,276	6,895	CDLF
5503	LINCOLN COUNTY C&D UNIT		3,053	3,311	5,411	4,341	6,874	CDLF
5803	MADISON COUNTY LANDFILL	10,773	9,954	7,868	4,683	4,642	6,759	MSWLF
10002	YANCEY-MITCHELL C&D LANDFILL	3,254	3,600	3,484	2,831	3,477	6,327	CDLF

APPENDIX A-1: PUBLIC AND PRIVATE MUNICIPAL SOLID WASTE LANDFILLS (INCLUDES CONSTRUCTION AND DEMOLITION LANDFILLS***), DESCENDING ORDER OF TONS, FY 1999-2000

PERMIT #	FACILITY	TONS						FACILITY TYPE
		1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	
4002	GREENE COUNTY CDLF				554	6,051	5,569	CDLF
4204	HALIFAX COUNTY CDLF				2,591	3,765	5,220	CDLF
0201	ALEXANDER COUNTY CDLF				1,448	2,840	4,189	CDLF
3003	DAVIE COUNTY C&D LANDFILL		6,859	6,040	6,528	4,518	4,018	CDLF
5803	MADISON COUNTY C&D UNIT		1,062	10,481	1,378	4,083	3,414	CDLF
9902	YADKIN COUNTY C&D LANDFILL	1,688	2,728	3,319	4,026	4,004	3,340	CDLF
0603	AVERY COUNTY C&D LANDFILL			266	1,077	879	3,320	CDLF
5002	JACKSON COUNTY LANDFILL CDLF				552	4,437	3,226	CDLF
	MCDOWELL CO. C&D STOCKPILE	4,461	3,961	4,231	2,887	5,323	3,207	CDLF
	POLK CO. C&D STOCKPILE	1,557	1,577	2,380	1,374	1,402	2,528	CDLF
	NORTHAMPTON CO. C&D STOCKPILE	316	438	1,579	916	964	2,137	CDLF
9404	WASHINGTON COUNTY C&D LANDFILL		103	1,084	509	1,454	1,119	CDLF
0905	BLADEN COUNTY C&D LANDFILL						358	CDLF
0401	ANSON COUNTY LANDFILL							MSWLF
4103	GREENSBORO CITY OF - LANDFILL	277,941	284,829	309,798	173,895			MSWLF
4101	HIGH POINT CITY OF - LANDFILL							MSWLF
3301	EDGECOMBE COUNTY LANDFILL	73,225	64,989	83,968	44,677			MSWLF
3902	GRANVILLE COUNTY LANDFILL	20,457	21,224	26,788	18,109			MSWLF
4204	HALIFAX COUNTY LANDFILL	165,160	37,728	42,905	17,229			MSWLF
3501	FRANKLIN COUNTY LANDFILL							MSWLF
0201	ALEXANDER COUNTY LANDFILL	21,671	22,026	21,771	10,644			MSWLF
3901	GRANVILLE COUNTY LANDFILL	45,698	43,212	42,771	14,549			MSWLF
3801	GRAHAM COUNTY LANDFILL							MSWLF

APPENDIX A-1: PUBLIC AND PRIVATE MUNICIPAL SOLID WASTE LANDFILLS (INCLUDES CONSTRUCTION AND DEMOLITION LANDFILLS***), DESCENDING ORDER OF TONS, FY 1999-2000

PERMIT #	FACILITY	TONS						FACILITY TYPE
		1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	
3606	GASTON COUNTY LANDFILL	80,204	81,208	96,297				MSWLF
4002	GREENE COUNTY LANDFILL	10,178	10,774	15,703	4,926			MSWLF
4302	HARNETT COUNTY LANDFILL	68,064	73,555	89,567	39,894			MSWLF
4501	HENDERSON COUNTY LANDFILL	59,925	67,451	77,160	45,035			MSWLF
0302	ALLEGHANY COUNTY LANDFILL							MSWLF
5001	WESTERN CAROLINA UNIVERSITY							MSWLF
4403	HAYWOOD COUNTY LANDFILL							MSWLF
4404	CANTON TOWN OF - LANDFILL							MSWLF
4901	IREDELL COUNTY LANDFILL							MSWLF
5002	JACKSON COUNTY LANDFILL	24,296	26,813	27,366	14,421			MSWLF
4701	HOKE COUNTY LANDFILL							MSWLF
5101	JOHNSTON COUNTY LANDFILL	72,961	78,095	95,004	29,011			MSWLF
4601	HERTFORD COUNTY LANDFILL							MSWLF
1301	BFI-CHARLOTTE MOTOR SPEEDWAY							MSWLF
3201	DURHAM, CITY OF LANDFILL	206,381	177,360	207,611	105,849			MSWLF
4303	HARNETT CO ANDERSON CREEK LANDFILL							MSWLF
2001	CHEROKEE COUNTY LANDFILL	24,618	23,058	22,395	8,329			MSWLF
0801	BERTIE COUNTY LANDFILL							MSWLF
9902	YADKIN COUNTY LANDFILL							MSWLF
5201	JONES COUNTY LANDFILL							MSWLF
0901	BLADEN COUNTY LANDFILL							MSWLF
1007	BRUNSWICK COUNTY LANDFILL	79,917	83,116	75,613	73,162			MSWLF
1101	BUNCOMBE COUNTY LANDFILL	102,185	119,083	147,652	26,570			MSWLF

APPENDIX A-1: PUBLIC AND PRIVATE MUNICIPAL SOLID WASTE LANDFILLS (INCLUDES CONSTRUCTION AND DEMOLITION LANDFILLS***), DESCENDING ORDER OF TONS, FY 1999-2000

PERMIT #	FACILITY	TONS						FACILITY TYPE
		1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	
0702	BEAUFORT COUNTY LANDFILL							MSWLF
0601	AVERY COUNTY LANDFILL							MSWLF
1203	BURKE COUNTY LANDFILL	99,954	102,602	105,917	50,575			MSWLF
1302	CABARRUS COUNTY LANDFILL	52,691	44,795	41,827	21,649			MSWLF
1602	CARTERET COUNTY LANDFILL							MSWLF
1701	CASWELL COUNTY LANDFILL							MSWLF
1401	CALDWELL COUNTY LANDFILL	75,671	74,871	79,108	62,030			MSWLF
1901	CHATHAM COUNTY LANDFILL							MSWLF
0501	ASHE COUNTY LANDFILL	15,993	14,540	15,853	16,309			MSWLF
2201	CLAY COUNTY LANDFILL							MSWLF
2301	CLEVELAND COUNTY LANDFILL	71,298	70,480	75,511	39,037			MSWLF
2401	ARS - COLUMBUS COUNTY	100,015	47,185	52,377	21,147			MSWLF
2503	CRAVEN COUNTY LANDFILL							MSWLF
2601	CUMBERLAND COUNTY LANDFILL	186,366	97,372	151,124	197,992			MSWLF
2602	US ARMY - FT. BRAGG LANDFILL	45,238	71,062	90,182	41,066			MSWLF
2701	CURRITUCK COUNTY LANDFILL							MSWLF
2802	DARE COUNTY LANDFILL							MSWLF
2902	DAVIDSON COUNTY LANDFILL							MSWLF
2904	THOMASVILLE, CITY OF - LANDFILL							MSWLF
3001	DAVIE COUNTY LANDFILL							MSWLF
3101	DUPLIN COUNTY LANDFILL							MSWLF
1803	CATAWBA COUNTY LANDFILL	148,852	160,186	155,675				MSWLF
0101	ALAMANCE COUNTY LANDFILL							MSWLF

APPENDIX A-1: PUBLIC AND PRIVATE MUNICIPAL SOLID WASTE LANDFILLS (INCLUDES CONSTRUCTION AND DEMOLITION LANDFILLS***), DESCENDING ORDER OF TONS, FY 1999-2000

PERMIT #	FACILITY	TONS						FACILITY TYPE
		1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	
9702	WILKES COUNTY LANDFILL							MSWLF
8701	SWAIN COUNTY LANDFILL							MSWLF
8803	TRANSYLVANIA COUNTY LANDFILL							MSWLF
9001	UNION COUNTY LANDFILL	77,257	75,305	81,649	38,859			MSWLF
9101	VANCE COUNTY LANDFILL	45,827	49,369	56,501	26,290			MSWLF
9201	RALEIGH CITY OF - LANDFILL	288,371	296,906	310,332	147,097			MSWLF
9203	WAKE COUNTY LANDFILL	106,524	120,639	165,871	78,538			MSWLF
9204	SORRELLS							MSWLF
9209	WAKE COUNTY LANDFILL	110,379	114,287	163,857	329,511			MSWLF
9301	WARREN COUNTY LANDFILL							MSWLF
9402	WASHINGTON COUNTY LANDFILL							MSWLF
9502	WATAUGA COUNTY LANDFILL							MSWLF
8602	SURRY COUNTY LANDFILL	53,341	50,065	47,836	17,961			MSWLF
9701	WILKES COUNTY LANDFILL							MSWLF
8501	STOKES COUNTY LANDFILL							MSWLF
9801	WILSON COUNTY LANDFILL	112,523	119,131	124,152	62,874			MSWLF
	COLUMBUS COUNTY C&D STOCKPILE					1,884		CDLF
6001	HARRISBURG ROAD C&D LANDFILL							CDLF
7301	PERSON COUNTY LANDFILL	7,042	8,102	6,134				MSWLF
9502	WATAUGA COUNTY C&D LANDFILL		2,522	3,094	2,698			CDLF
1301	BFI-CHARLOTTE MOTOR SPEEDWAY		29,482	43,014	21,510	73,687		CDLF
9101	VANCE COUNTY CDLF				3,619	5,633		CDLF
00-01	YANCEY/MITCHELL SANITARY LANDFILL							MSWLF

APPENDIX A-1: PUBLIC AND PRIVATE MUNICIPAL SOLID WASTE LANDFILLS (INCLUDES CONSTRUCTION AND DEMOLITION LANDFILLS***), DESCENDING ORDER OF TONS, FY 1999-2000

PERMIT #	FACILITY	TONS						FACILITY TYPE
		1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	
7301	PERSON COUNTY LANDFILL							MSWLF
7401	PITT COUNTY LANDFILL	101,769						MSWLF
7502	POLK COUNTY LANDFILL							MSWLF
7601	RANDOLPH COUNTY LANDFILL	75,658	74,100	77,295	42,875			MSWLF
7803	ROBESON COUNTY LANDFILL	92,548	90,886	93,836	51,782			MSWLF
7901	ROCKINGHAM COUNTY LANDFILL	47,175						MSWLF
8102	RUTHERFORD COUNTY LANDFILL							MSWLF
8103	RUTHERFORD COUNTY LANDFILL	54,105	50,076	50,934	24,961			MSWLF
8301	SCOTLAND COUNTY LANDFILL	48,654	57,150	55,867	28,618			MSWLF
	ALBEMARLE, CITY OF	48,187	47,033	54,003				MSWLF
6705	ONSLOW COUNTY MUNICIPAL SW LANDFILL	79,106	80,598	138,548	45,402			MSWLF
TOTAL TONS		7,246,697	7,458,182	8,521,364	8,154,594	8,162,666	9,208,629	

CD = Construction and Demolition Waste

***CRSWMA = Coastal Regional Solid Waste Management Authority**

****Permit conditions include acceptance of CD waste.**

*****CD Unit data reported separately from MSW landfill beginning 1995-1996.**

APPENDIX A-1: PUBLIC AND PRIVATE MUNICIPAL SOLID WASTE LANDFILLS (INCLUDES CONSTRUCTION AND DEMOLITION LANDFILLS***), DESCENDING ORDER OF TONS, FY 1999-2000

PERMIT #	FACILITY	TONS						FACILITY TYPE
		1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	
26-02	FORT BRAGG SANITARY LANDFILL							MSWLF
7202	PERQUIMANS, CHOWAN, GATES REGIONAL LAND							MSWLF
	HARNETT COUNTY C&D STOCKPILE	578	1,969					CDLF
	MOORE CO. C&D STOCKPILE	12,291	10,426	14,089	17,369	32,138		CDLF
9601	WAYNE COUNTY LANDFILL	86,820	90,833	103,103	49,159			MSWLF
7002	PASQUOTANK COUNTY LANDFILL							MSWLF
5403	LENOIR COUNTY LANDFILL	77,319	74,418	118,153	46,377			MSWLF
5601	MCDOWELL COUNTY LANDFILL							MSWLF
5701	MACON COUNTY LANDFILL							MSWLF
5702	MACON COUNTY LANDFILL							MSWLF
5802	MADISON COUNTY LANDFILL							MSWLF
5901	MARTIN COUNTY LANDFILL							MSWLF
6001	HARRISBURG ROAD LANDFILL							MSWLF
6201	MONTGOMERY COUNTY LANDFILL	138,041	188,685	131,896	51,903			MSWLF
6301	MOORE COUNTY LANDFILL							MSWLF
6401	NASH COUNTY LANDFILL	80,908	91,896	87,289	37,751			MSWLF
6601	NORTHAMPTON COUNTY LANDFILL							MSWLF
6703	US MARINE CORPS CAMP LEJUENE	33,636	39,356	70,133	15,550			MSWLF
8603	SURRY COUNTY LANDFILL	22,111	18,970	21,273	7,971			MSWLF
6902	PAMLICO COUNTY LANDFILL							MSWLF
5301	LEE COUNTY LANDFILL							MSWLF
7101	PENDER COUNTY LANDFILL							MSWLF
7201	PERQUIMANS-CHOWAN COUNTY LANDFILL							MSWLF

APPENDIX A-2: SCRAP TIRE MONOFILLS , DESCENDING ORDER OF TONS, FY 1999-2000

		TONS					
PERMIT #	FACILITY	1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
1303	US TIRE DISPOSAL	59,014	39,877	71,170	67,182	76,297	84,735
4304	CENTRAL CAROLINA TIRE MONOFILL	38,598	38,127	37,583	41,188	50,801	51,801
TOTAL TONS RECEIVED		**97,613**	**78,004**	**108,753**	**108,370**	**127,098**	**136,536**

APPENDIX A-3: INCINERATION FACILITIES, DESCENDING ORDER OF TONS, FY 1999-2000

PERMIT #	FACILITY	TONS					
		1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
6505-I	NEW HANOVER WASTE-TO-ENERGY FACILITY	95,283	133,439	133,128	129,200	127,589	112,132
TOTAL TONS		**95,283**	**133,439**	**133,128**	**129,200**	**127,589**	**112,132**

APPENDIX A-4: PRIVATE INDUSTRIAL LANDFILLS, DESCENDING ORDER OF TONS, FY 1999-2000

PERMIT #	FACILITY	TONS					
		1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
7302	CAROLINA POWER & LIGHT CO	410,668	547,750	496,565	631,416	496,305	588,129
1804	DUKE POWER/MARSHALL STEAM PLT	142,887	90,925	77,394		288,556	376,809
2402	INTERNATIONAL PAPER	264,689	69,833	295,426	64,987	234,794	329,954
4406	BLUE RIDGE PAPER PRODUCTS, INC.	303,310	345,674	343,938	324,005	242,312	252,790
3605	FMC CORPORATION LITHIUM DIV	190,814	185,829	206,760		12,548	166,444
8503	DUKE POWER/BELEWS CREEK ST PLT	105,680	44,830	75,680	79,015	83,909	138,846
2302	CLEVELAND CONTAINER SERVICE	91,134	75,675	76,192		93,788	120,141
9401	WEYERHAEUSER	95,330	45,534	49,909	84,432	76,147	73,672
3405	R J REYNOLDS	47,186	48,881	42,809	40,309	39,021	47,378
3413-TEMP	UNITED METALS RECYCLING, FORSYTH COUNTY				29,030	21,665	25,003
1102	BASF CORPORATION	17,262	12,308	9,915	12,514	12,716	12,441
2502	WEYERHAEUSER	6,506	6,506	19,245	20,410	14,601	10,472
8801	ECUSTA ASH LANDFILL	11,784	12,965	14,295	14,938	12,538	8,870
8805	ECUSTA LANDFILL	6,741	5,140	5,534	5,250	5,981	6,276
4204	HALIFAX COAL ASH LANDFILL					47,995	4,837
9703	ABTCO INC	4,062	4,226	3,443	3,937	3,607	3,771
5603	COLLINS & AIKMAN	6,603	4,747	3,405	2,647	2,796	2,211
6004	DUKE POWER COMPANY	14	73	144	189	3,260	1,673
7602	EVEREADY BATTERY	465	368	251	290	451	520
1006	E.I. DU PONT DENEMOURS CO./ CAPE FEAR P				197	119	101
9210	CAROLINA POWER & LIGHT CO	49	32	41		126	68
TOTAL TONS		1,705,186	1,501,296	1,720,946	1,313,566	1,693,235	2,170,405

APPENDIX A-5: TRANSFER STATIONS AND MIXED WASTE PROCESSING FACILITIES, FY 1999-2000

PERMIT #	FACILITY	1999-2000	DISPOSAL DESTINATION	PERMIT #
0202-T	ALEXANDER CO. TRANSFER STATION	19,472	BFI-CHARLOTTE MTR SPEEDWAY LANDFILL V	1304
0303-T	ALLEGHANY COUNTY TRANSFER FACILITY	8,315	BFI-CHARLOTTE MOTOR SPEEDWAY	1301
0402-T	ANSON COUNTY TRANSFER STATION	17,138	LEE COUNTY LANDFILL, SC	
0602-T	AVERY COUNTY TRANSFER STATION	13,880	BRISTOL LANDFILL, VA	
1010-T	BRUNSWICK COUNTY TRANSFER STATION	59,474	BFI-SAMPSON COUNTY DISPOSAL INC	8201
1108-T	BUNCOME COUNTY TRANSFER STATION	31,460	BUNCOMBE COUNTY MSW LANDFILL	1107
1205-T	BURKE COUNTY TRANSFER FACILITY	56,892	FOOTHILLS ENVIRONMENTAL LANDFILL	1403
9211	CARY TOWN OF - TRANSFER STATION	1,077	WAKE COUNTY LANDFILL	9209
9211	CARY TOWN OF - TRANSFER STATION	13,252	BFI-SAMPSON COUNTY DISPOSAL INC	8201
3212-T	CITY OF DURHAM TRANSFER STATION	221,677	BRUNSWICK LANDFILL, VA	
3002	DAVIE COUNTY TRANSFER STATION	18,684	WINSTON-SALEM, CITY OF - LANDFILL	3402
8004-T	EAST SPENCER WASTE TRANSFER FACILITY	83,472	PIEDMONT SANITARY LANDFILL	3406
7903-T	EDEN, CITY OF TRANSFER STATION	11,981	ROCKINGHAM COUNTY LANDFILL	7904
3302-T	EDGCOMBE COUNTY TRANSFER STATION	40,043	ADDINGTON-EAST CAROLINA REG LF	0803
7405	EJE RECYCLING AND DISPOSAL	417	CCC-WILSON TRANSFER STATION	9807-T
7405	EJE RECYCLING AND DISPOSAL	4,198	ADDINGTON-EAST CAROLINA REG LF	0803
3502-T	FRANKLIN COUNTY TRANSFER STATON	14,738	BRUNSWICK LANDFILL, VA	
3502-T	FRANKLIN COUNTY TRANSFER STATON	8,931	ADDINGTON-EAST CAROLINA REG LF	0803
3502-T	FRANKLIN COUNTY TRANSFER STATON	836	PIEDMONT SANITARY LANDFILL	3406
3502-T	FRANKLIN COUNTY TRANSFER STATON	16,545	ADDINGTON-UPPER PIEDMONT REG LF	7304

APPENDIX A-5: TRANSFER STATIONS AND MIXED WASTE PROCESSING FACILITIES, FY 1999-2000

PERMIT #	FACILITY	1999-2000	DISPOSAL DESTINATION	PERMIT #
1805	GDS RECYCLING SERVICES	7,000	CATAWBA COUNTY LANDFILL	1803
4307-T	HARNETT CNTY-DUNN/ERWIN T.S.	41,548	UWHARRIE ENV INC/MOORE CTY TS	6302
4305-T	HARNETT COUNTY TRANSFER STATION	6,581	UWHARRIE ENV INC/MOORE CTY TS	6302
4409-TP	HAYWOOD COUNTY C&D MRF (stockpiled 1999)	1,309	HAYWOOD CO WHITE OAK LANDFILL	4407
4408	HAYWOOD COUNTY MWP FACILITY	47,187	HAYWOOD CO WHITE OAK LANDFILL	4407
4504-T	HENDERSON COUNTY TRANSFER FACILITY	43,390	PALMETTO LANDFILL, SC	
4904-T	IREDELL COUNTY TRANSFER STATION	37,675	IREDELL COUNTY SANITARY LF	4903
4904-T	IREDELL COUNTY TRANSFER STATION	1,152	IREDELL COUNTY C&D UNIT	4903
5602-T	McDOWELL CO TRANSFER FACILITY	31,851	BFI-CHARLOTTE MOTOR SPEEDWAY	1301
6018-TP	PHOENIX RECYCLING OF CHARLOTTE-MECKLBRG. (s	3,020	BFI-LAKE NORMAN LANDFILL	5504
6018-TP	PHOENIX RECYCLING OF CHARLOTTE-MECKLBRG. (s	3,000	GASTON COUNTY LANDFILL	3606
6018-TP	PHOENIX RECYCLING OF CHARLOTTE-MECKLBRG. (s	13,750	MINING ROAD LANDFILL (KERSAW, SC)	
6018-TP	PHOENIX RECYCLING OF CHARLOTTE-MECKLBRG. (s	255	USA WASTE SERVICES TRANSFER ST.	6014
6018-TP	PHOENIX RECYCLING OF CHARLOTTE-MECKLBRG. (s	1,673	MECKLENBURG COUNTY (HWY521) MSWLF	6019
2505	PHOENIX RECYCLING SITE #1 (Stockpiled 1999)	3,361	CRSWMA - INTERIM REGIONAL LF	2504
7503-T	POLK COUNTY TRANSFER STATION	4,279	PALMETTO LANDFILL, SC	
7603-T	RANDOLPH COUNTY TRANSFER FACILITY	93,999	BFI-CHARLOTTE MOTOR SPEEDWAY	1301
7902-T	REIDSVILLE, CITY OF TRANSFER FACILITY	6,322	ADDINGTON-UPPER PIEDMONT REG LF	7304
6402T	ROCKY MOUNT TRANSFER STATION	95,290	BRUNSWICK LANDFILL, VA	
8104-T	RUTHERFORD COUNTY TRANSFER FACILITY	48,329	PALMETTO LANDFILL, SC	

APPENDIX A-5: TRANSFER STATIONS AND MIXED WASTE PROCESSING FACILITIES, FY 1999-2000

PERMIT #	FACILITY	1999-2000	DISPOSAL DESTINATION	PERMIT #
9221-T	SOUTH WAKE TRANSFER STATION	163,371	WAKE COUNTY LANDFILL	9209
5103-T	TOWN OF SMITHFIELD TRANSFER STATION	4,333	JOHNSTON COUNTY LANDFILL	5102
9005-T	UNION COUNTY TRANSFER STATION	84,868	UWHARRIE ENV. REG. LANDFILL	6204
6014	USA WASTE SERVICES TRANSFER ST.	42,838	UWHARRIE ENV. REG. LANDFILL	6204
6014	USA WASTE SERVICES TRANSFER ST.	134,389	LEE COUNTY LANDFILL, SC	
6302	UWHARRIE ENV INC/MOORE CTY TS	56,367	UWHARRIE ENV. REG. LANDFILL	6204
6202-MRF	UWHARRIE ENVIRONMENTAL MRF	17,908	UWHARRIE ENV. REG. LANDFILL	6204
9302-T	WARREN COUNTY TRANSFER STATION	1,514	BRUNSWICK LANDFILL, VA	
9302-T	WARREN COUNTY TRANSFER STATION	8,014	ADDINGTON-UPPER PIEDMONT REG LF	7304
9806-T	WASTE INDUSTRIES WILSON TRANSFER ST.	56,809	BFI-SAMPSON COUNTY DISPOSAL INC	8201
9102-T	WASTE INDUSTRIES-VANCE COUNTY	4,313	BRUNSWICK LANDFILL, VA	
9102-T	WASTE INDUSTRIES-VANCE COUNTY	42,721	ADDINGTON-UPPER PIEDMONT REG LF	7304
1903-T	WASTE MAN. - CHATHAM CO TRANSFER STATION	17	PIEDMONT SANITARY LANDFILL	3406
1903-T	WASTE MAN. - CHATHAM CO TRANSFER STATION	28,846	UWHARRIE ENV INC/MOORE CTY TS	6302
1104	WASTE MANAGEMENT OF ASHEVILLE	121,650	PALMETTO LANDFILL, SC	
3608	WASTE MANAGEMENT OF CAROLINAS	139,657	PALMETTO LANDFILL, SC	
9215-T	WASTE MANAGEMENT OF RAL-DUR	44,050	ADDINGTON-UPPER PIEDMONT REG LF	7304
9215-T	WASTE MANAGEMENT OF RAL-DUR	58,955	BFI-SAMPSON COUNTY DISPOSAL INC	8201
9503-T	WATAUGA CO TRANSFER FACILITY	44,239	IRIS GLEN LANDFILL, TN	
4205-T	WELDON, TOWN OF, T.S.	9,484	ADDINGTON-EAST CAROLINA REG LF	0803

APPENDIX A-5: TRANSFER STATIONS AND MIXED WASTE PROCESSING FACILITIES, FY 1999-2000

PERMIT #	FACILITY	1999-2000	DISPOSAL DESTINATION	PERMIT #
4205-T	WELDON, TOWN OF, T.S.	40,516	BRUNSWICK LANDFILL, VA	
9903	YADKIN COUNTY TRANSFER FACILITY	15,796	BFI-CHARLOTTE MOTOR SPEEDWAY	1301
10003-T	YANCEY-MITCHELL TRANSFER STATION	21,943	PALMETTO LANDFILL, SC	
TOTAL TONS		2,276,050		

APPENDIX B: COUNTY POPULATION, WASTE DISPOSAL, PER CAPITA RATE AND PERCENT REDUCTION, FY 1999-2000

COUNTY	POPULATION	MSW TONS MANAGED	MSW TONS DISPOSED				BASE YEAR PER CAPITA	PER CAPITA RATE	% WASTE REDUCTION
	JULY 1999	1991-1992	1996-1997	1997-1998	1998-1999	1999-2000	1991-1992	1999-2000	1999-2000
ALAMANCE	123,940	99,302	80,131	88,901	113,694	135,310	0.91	1.09	-20%
ALEXANDER	32,458	25,716	21,816	21,192	20,925	23,657	0.90	0.73	19%
ALLEGHANY	9,938	14,131	7,865	7,795	7,732	8,187	1.45	0.82	43%
ANSON	23,861	14,229	19,432	3,621	18,035	18,443	0.61	0.77	-27%
ASHE	23,964	18,089	18,375	18,877	21,038	22,176	0.81	0.93	-14%
AVERY	15,996	11,130	14,540	14,571	16,281	17,343	0.74	1.08	-47%
BEAUFORT	44,110	41,796	60,352	42,796	54,006	58,264	0.99	1.32	-33%
BERTIE	19,886	17,372	20,139	23,178	20,484	28,265	0.86	1.42	-65%
BLADEN	30,916	25,048	36,334	30,657	38,098	55,779	0.86	1.80	-110%
BRUNSWICK	69,501	78,123	129,796	151,765	108,579	126,699	1.48	1.82	-23%
BUNCOMBE	194,235	159,040	209,992	198,703	224,806	247,300	0.90	1.27	-41%
BURKE	84,494	78,006	78,492	64,963	79,003	85,490	1.02	1.01	1%
CABARRUS	124,907	95,215	106,493	134,481	136,245	160,186	0.94	1.28	-36%
CALDWELL	75,931	65,532	80,023	80,904	107,431	100,327	0.92	1.32	-44%
CAMDEN	6,734	1,850	1,998	3,775	3,009	2,314	0.31	0.34	-11%
CARTERET	59,112	86,894	70,012	58,526	67,763	69,455	1.62	1.17	27%
CASWELL	22,475	5,136	13,154	8,856	9,228	9,853	0.25	0.44	-75%
CATAWBA	134,046	151,559	157,235	153,828	166,451	155,849	1.26	1.16	8%
CHATHAM	47,196	33,235	29,334	30,256	34,360	34,670	0.84	0.73	13%

APPENDIX B: COUNTY POPULATION, WASTE DISPOSAL, PER CAPITA RATE AND PERCENT REDUCTION, FY 1999-2000

COUNTY	POPULATION	MSW TONS MANAGED	MSW TONS DISPOSED				BASE YEAR PER CAPITA	PER CAPITA RATE	% WASTE REDUCTION
	JULY 1999	1991-1992	1996-1997	1997-1998	1998-1999	1999-2000	1991-1992	1999-2000	1999-2000
CHEROKEE	23,094	16,020	16,595	16,417	18,374	19,470	0.78	0.84	-8%
CHOWAN	14,046	13,692	13,231	9,551	15,081	15,808	0.99	1.13	-14%
CLAY	8,411	4,172	1,468	2,383	3,914	4,572	0.57	0.54	5%
CLEVELAND	92,620	73,138	76,908	74,749	81,228	84,685	0.86	0.91	-6%
COLUMBUS	52,458	45,199	53,076	37,568	38,404	41,240	0.91	0.79	14%
CRAVEN	89,570	86,549	69,955	51,080	51,681	62,457	1.05	0.70	34%
CUMBERLAND	291,835	227,302	263,324	335,705	366,067	389,287	0.81	1.33	-65%
CURRITUCK	17,421	13,792	18,528	19,095	21,934	28,875	1.00	1.66	-66%
DARE	28,894	51,300	58,453	63,805	68,991	80,713	2.23	2.79	-25%
DAVIDSON	142,758	139,617	112,691	121,326	123,967	134,640	1.08	0.94	13%
DAVIE	32,921	19,348	25,156	26,741	23,403	26,766	0.68	0.81	-20%
DUPLIN	44,507	33,310	38,360	37,243	38,949	50,075	0.82	1.13	-37%
DURHAM	203,221	218,972	254,507	246,571	253,439	267,300	1.17	1.32	-12%
EDGECOMBE	54,180	71,471	84,361	101,426	86,228	157,397	1.25	2.91	-132%
FORSYTH	291,517	304,290	433,445	440,241	445,674	422,828	1.14	1.45	-27%
FRANKLIN	45,358	28,702	37,549	39,184	43,462	47,991	0.76	1.06	-39%
GASTON	181,454	165,100	195,594	224,255	250,700	260,383	0.93	1.43	-54%
GATES	10,102	5,897	4,014	4,403	4,687	4,806	0.63	0.48	24%
GRAHAM	7,548	4,508	5,412	5,493	6,672	5,368	0.62	0.71	-15%

APPENDIX B: COUNTY POPULATION, WASTE DISPOSAL, PER CAPITA RATE AND PERCENT REDUCTION, FY 1999-2000

COUNTY	POPULATION	MSW TONS MANAGED	MSW TONS DISPOSED				BASE YEAR PER CAPITA	PER CAPITA RATE	% WASTE REDUCTION
	JULY 1999	1991-1992	1996-1997	1997-1998	1998-1999	1999-2000	1991-1992	1999-2000	1999-2000
GRANVILLE	45,406	54,548	69,834	64,004	59,941	61,397	1.39	1.35	3%
GREENE	18,287	7,428	15,753	8,679	11,293	9,397	0.48	0.51	-7%
GUILFORD	393,434	471,541	497,875	619,485	525,916	756,755	1.35	1.92	-42%
HALIFAX	54,799	54,907	43,478	39,763	38,773	40,831	0.98	0.75	24%
HARNETT	85,359	69,073	92,862	68,721	65,745	77,364	1.01	0.91	10%
HAYWOOD	51,992	57,842	40,223	43,755	45,324	48,376	1.21	0.93	23%
HENDERSON	82,396	81,498	87,522	95,125	87,636	94,280	1.14	1.14	0%
HERTFORD	21,252	14,288	15,049	14,586	14,567	19,580	0.63	0.92	-46%
HOKE	31,104	18,331	17,323	16,834	18,042	18,543	0.80	0.60	25%
HYDE	5,633	2,762	3,595	2,553	5,501	4,970	0.50	0.88	-76%
IREDELL	117,702	114,539	177,545	150,528	167,214	180,237	1.19	1.53	-29%
JACKSON	29,854	18,661	27,366	22,266	19,452	26,026	0.68	0.87	-28%
JOHNSTON	112,144	74,169	104,902	117,438	105,199	147,009	0.88	1.31	-49%
JONES	9,351	4,360	3,875	2,266	2,177	4,062	0.47	0.43	8%
LEE	49,231	48,341	58,051	61,277	78,594	71,824	1.16	1.46	-26%
LENOIR	58,223	67,693	118,655	95,019	74,802	114,094	1.17	1.96	-67%
LINCOLN	60,080	44,442	39,948	54,435	58,691	64,593	0.87	1.08	-24%
MACON	28,680	19,738	24,207	24,381	28,133	30,366	0.82	1.06	-29%
MADISON	18,936	11,676	18,569	6,064	8,751	10,175	0.68	0.54	21%

APPENDIX B: COUNTY POPULATION, WASTE DISPOSAL, PER CAPITA RATE AND PERCENT REDUCTION, FY 1999-2000

COUNTY	POPULATION	MSW TONS MANAGED	MSW TONS DISPOSED				BASE YEAR PER CAPITA	PER CAPITA RATE	% WASTE REDUCTION
	JULY 1999	1991-1992	1996-1997	1997-1998	1998-1999	1999-2000	1991-1992	1999-2000	1999-2000
MARTIN	25,678	30,112	23,513	24,880	25,380	28,257	1.19	1.10	8%
MCDOWELL	40,631	29,180	33,506	31,272	33,790	36,120	0.82	0.89	-8%
MECKLENBURG	641,796	677,573	929,186	1,051,342	1,214,764	1,282,196	1.29	2.00	-55%
MITCHELL	14,772	15,768	9,306	10,691	11,408	13,561	1.11	0.92	17%
MONTGOMERY	24,992	28,873	30,936	14,531	31,872	30,066	1.23	1.20	2%
MOORE	72,176	74,062	85,783	87,953	99,060	99,856	1.23	1.38	-12%
NASH	88,867	84,594	87,713	49,967	64,926	101,733	1.09	1.14	-5%
NEW HANOVER	148,722	157,647	324,487	289,879	266,602	275,930	1.28	1.86	-45%
NORTHAMPTON	20,934	19,528	10,840	12,562	20,301	22,798	0.94	1.09	-16%
ONSLOW	148,220	158,344	247,352	130,087	166,651	154,486	1.04	1.04	0%
ORANGE	109,570	131,067	99,390	92,819	97,299	99,661	1.36	0.91	33%
PAMLICO	12,618	8,541	6,964	6,155	6,977	8,209	0.75	0.65	13%
PASQUOTANK	34,616	30,150	32,336	32,655	33,740	35,017	0.97	1.01	-4%
PENDER	38,970	18,188	69,015	20,098	21,488	30,993	0.60	0.80	-33%
PERQUIMANS	10,896	7,520	9,651	6,526	7,082	7,577	0.73	0.70	5%
PERSON	33,652	24,249	27,041	27,520	29,153	33,173	0.80	0.99	-23%
PITT	127,890	132,896	119,643	109,242	117,616	209,768	1.21	1.64	-36%
POLK	16,927	9,327	9,947	8,678	10,791	12,359	0.63	0.73	-16%
RANDOLPH	126,214	78,663	83,788	90,824	99,893	103,031	0.73	0.82	-12%

APPENDIX B: COUNTY POPULATION, WASTE DISPOSAL, PER CAPITA RATE AND PERCENT REDUCTION, FY 1999-2000

COUNTY	POPULATION	MSW TONS MANAGED	MSW TONS DISPOSED				BASE YEAR PER CAPITA	PER CAPITA RATE	% WASTE REDUCTION
	JULY 1999	1991-1992	1996-1997	1997-1998	1998-1999	1999-2000	1991-1992	1999-2000	1999-2000
RICHMOND	45,240	60,752	38,084	37,607	36,573	37,753	1.35	0.83	38%
ROBESON	115,214	104,700	104,543	61,943	105,632	96,641	0.99	0.84	15%
ROCKINGHAM	89,768	71,481	86,397	92,429	101,537	97,569	0.83	1.09	-31%
ROWAN	125,840	90,081	115,307	121,963	132,575	142,071	0.80	1.13	-41%
RUTHERFORD	60,456	89,175	61,644	56,150	56,717	59,312	1.56	0.98	37%
SAMPSON	54,158	33,545	52,591	48,556	48,323	59,098	0.70	1.09	-56%
SCOTLAND	34,928	39,867	48,258	46,064	44,159	42,477	1.17	1.22	-4%
STANLY	56,186	69,288	60,961	64,054	72,753	71,556	1.32	1.27	4%
STOKES	43,706	17,976	10,409	11,098	9,848	12,554	0.47	0.29	39%
SURRY	68,690	73,595	74,904	52,796	56,335	68,131	1.18	0.99	16%
SWAIN	12,344	5,651	5,536	6,006	5,614	7,514	0.50	0.61	-22%
TRANSYLVANIA	28,294	30,072	17,148	20,659	22,237	26,975	1.16	0.95	18%
TYRRELL	4,044	2,985	1,471	1,223	1,946	2,359	0.79	0.58	26%
UNION	115,289	77,842	148,597	96,064	140,246	184,549	0.90	1.60	-78%
VANCE	42,312	43,267	56,841	55,255	55,022	56,097	1.11	1.33	-19%
WAKE	591,899	569,622	871,035	874,300	966,631	958,832	1.29	1.62	-26%
WARREN	18,924	10,978	9,217	8,665	9,358	8,991	0.63	0.48	25%
WASHINGTON	12,880	11,699	9,502	8,655	9,861	20,362	0.84	1.58	-88%
WATAUGA	40,765	36,755	37,127	35,645	43,132	45,453	0.99	1.11	-13%

APPENDIX B: COUNTY POPULATION, WASTE DISPOSAL, PER CAPITA RATE AND PERCENT REDUCTION, FY 1999-2000

COUNTY	POPULATION	MSW TONS MANAGED	MSW TONS DISPOSED				BASE YEAR PER CAPITA	PER CAPITA RATE	% WASTE REDUCTION
	JULY 1999	1991-1992	1996-1997	1997-1998	1998-1999	1999-2000	1991-1992	1999-2000	1999-2000
WAYNE	112,962	106,149	103,848	93,616	126,459	145,394	1.00	1.29	-29%
WILKES	63,706	58,818	58,660	58,303	63,261	71,148	0.97	1.12	-15%
WILSON	69,751	120,870	124,931	124,913	110,119	141,988	1.82	2.04	-12%
YADKIN	36,128	20,779	17,268	20,574	19,336	18,995	0.67	0.53	22%
YANCEY	16,831	15,576	12,279	11,302	12,082	14,243	1.01	0.85	16%
NC STATE	7,647,934	7,257,428	8,741,727	8,607,578	9,214,323	10,218,962	1.08	1.34	-22%
TOTAL ADJUSTED FOR DISASTER DEBRIS (e.g, FRAN, FLOYD)			8,041,734			9,889,180		1.29	-20%

Waste reduction formula: (base year per capita minus current year per capita) divided by base year per capita

APPENDIX B Contd.: COUNTIES USING APPROVED ALTERNATE BASE YEARS, FY 1999-2000

ALTERNATE BASE YEAR COUNTIES

COUNTY	POPULATION	MSW TONS MANAGED	MSW TONS DISPOSED				BASE YEAR PER CAPITA	PER CAPITA RATE	% WASTE REDUCTION
	JULY-1999	ALTERNATE BASE YEAR	1996-1997	1997-1998	1998-1999	1999-2000	JUN-1992	1999-2000	1999-2000
ALAMANCE (FY89-90)	123,940	117,862	80,131	88,901	113,694	135,310	1.10	1.09	15%
BUNCOMBE (FY88-89)	194,235	157,660	209,992	198,703	224,806	247,300	0.91	1.27	-28%
CATAWBA (FY89-90)	134,046	179,351	157,235	153,828	166,451	155,849	1.51	1.16	16%
CHATHAM (90-91)	47,196	34,315	29,334	30,256	34,360	34,670	0.89	0.73	16%
CLEVELAND (FY90-91)	92,620	74,096	76,908	74,749	81,228	84,685	0.87	0.91	-2%
CRAVEN (FY90-91)	89,570	98,536	69,955	51,080	51,681	62,457	1.21	0.70	52%
DUPLIN (FY90-91)	44,507	48,900	38,360	37,243	38,949	50,075	1.22	1.13	29%
DURHAM (FY88-89)	203,221	224,196	254,507	246,571	253,439	267,300	1.31	1.32	3%
FORSYTH (FY88-89)	291,517	357,474	433,445	440,241	445,674	422,828	1.34	1.45	-14%
MECKLENBURG (89-90)	641,796	695,214	929,186	1,051,342	1,214,764	1,282,196	1.39	2.00	-40%
NEW HANOVER (88-89)	148,722	168,504	324,487	289,879	266,602	275,930	1.44	1.86	-23%
PASQUOTANK (FY90-91)	34,616	32,081	32,336	32,655	33,740	35,017	1.02	1.01	6%
PITT (FY89-90)	127,890	177,390	119,643	109,242	117,616	209,768	1.66	1.64	42%
WAKE (FY 88-89)	591,899	544,520	871,035	874,300	966,631	958,832	1.40	1.62	-20%
WAYNE (FY90-91)	112,962	111,167	103,848	93,616	126,459	145,394	1.06	1.29	-4%