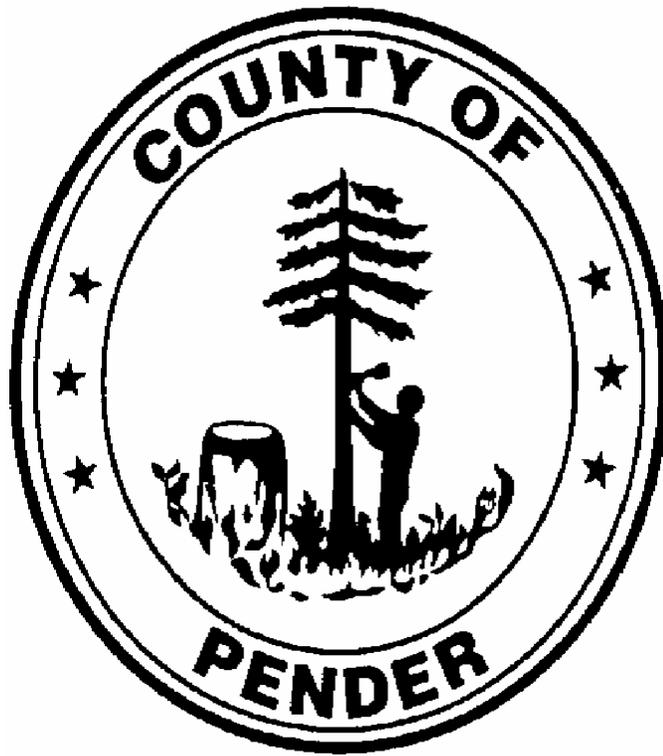


PENDER COUNTY, NORTH CAROLINA
TEN-YEAR SOLID WASTE MANAGEMENT PLAN

July 1, 2003 - July 1, 2013



Pender County Manager's Office
July 1, 2003

PENDER COUNTY, NORTH CAROLINA

SOLID WASTE MANAGEMENT PLAN

**July 1, 2003 - July 1, 2013
3-Year Update**

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INTRODUCTION

This plan was prepared in accordance with N.C. General Statute 130A-309.09A (b) for the purpose of meeting local solid waste needs and protecting public health and the environment. The sections of the plan are ordered as listed in the General Statute.

Through implementation of this comprehensive solid waste management plan and the plan updates that will follow every three years, the Pender County planning area provides for the management of solid waste and its reduction for the next 10 years. The planning area includes the Pender County unincorporated area and the following towns: Atkinson, Burgaw, St. Helena, Surf City, Topsail Beach, and Watha.

Pender County's long-range vision is for a comprehensive waste management program. This program would provide disposal capacity alternatives, waste collection services, and waste reduction programs to all members of the community at fair and cost effective pricing. The vision includes the elimination of improper disposal of waste and expanded waste reduction opportunities that are convenient for residents. The vision is for a community that understands the environmental benefits of waste reduction and proper waste disposal. The community foresees some financial expenditures, but intends to keep them at a reasonable level. This vision is translated into five long-range planning goals listed below.

Planning Area Goals

- Goal 1.** To protect public health and the environment .
- Goal 2.** To increase the efficiency and cost-effectiveness of the solid waste program.
- Goal 3.** To meet the established local waste reduction goals.
- Goal 4.** To decrease improper waste disposal.
- Goal 5.** To provide everyone in the community with waste disposal capacity alternatives, waste collection services, and waste reduction opportunities.

The Advisory Board did not have any revisions to these goals for the three-year plan update, as the goals are still applicable to the County and its incorporated towns.

Part I. GEOGRAPHIC AREA AND SOLID WASTE STREAM EVALUATION

Geographic Area

This solid waste management plan covers the Pender County unincorporated area and its six incorporated towns. The majority of Pender County's residents live in **unincorporated areas** (see Table 1).

Table 1. Municipal Population, July 2001

TOWNS & COUNTY	POPULATION
Atkinson	237
Burgaw	3,375
Surf City	1,423
St. Helena	402
Topsail Beach	481
Watha	153
Pender County – unincorporated areas	36,251
TOTAL	42,322

Source: Office of State Planning, State Demographics <http://www.ospl.state.nc.us/demog/munpop98.html>; U.S. Census Bureau

Note: Census data estimates that the Pender County population for 2001 is 42,051 residents that live in the county, some residents from the town of Wallace in Duplin County (18) live in Pender County and residents in Surf City (289) live in Onslow County.

The towns provide solid waste management services for their residents by contracting with private solid waste management collection companies.

Since 1990, Pender County has experienced strong residential growth. In calendar years 1990 through 2000, Pender County has ranked in the top ten counties in the state, fifth overall, on a growth percentage basis since the 2000 census, with respect to population increases. Previously a retirement community, the Topsail (Eastern side) Township has had a strong influx of school age children. The Rocky Point (Southern Central side) Township has also had strong residential growth. Most of the rest of the County has had marginal growth.

The Eastern side of the County has the two beach towns (Surf City and Topsail Beach) with heavy tourist trade and the increasingly urbanized or suburbanized areas of Scotts Hill, Hampstead, and Sloop Point between US Highway 17 and the Intra-Coastal Waterway. The Western side of the County is predominantly timber and farmland. Surf City and Topsail Beach populations increase a total of about 20,000 in the summer months.

Waste Stream Evaluation

In this plan, municipal solid waste (MSW) or residential waste refers to waste generated by households (individual and multi-family dwellings). The term non-residential refers to waste generated from commercial, industrial, and institutional activities. Construction and demolition (C&D) waste is generated from construction activities and is separated from non-residential waste in this plan because it is disposed of in a different facility than most non-residential waste; tires are disposed of in a monofill or recycled.

Pender County and its towns disposed of approximately 21,865.74 tons of waste in FY 2001-02 (see **Appendix F**). An estimate of the waste disposed by sector is shown in **Table 2**. These calculations are based on tonnages provided on the FY 2001-02 Solid Waste Management Annual Reports and staff estimates.

Table 2. Estimated Waste Disposed by Sector, FY 2001-02

TYPE OF WASTE	TONS	PERCENT OF WASTE
Residential (County only)	8970.00	41.0%
Residential (Towns)	2833.79	13.0%
Recyclables (County only)	1506.00	6.9%
Recyclables (Towns)	160.18	0.7%
Total Residential	13469.97	61.6%
Non-residential (County only)	3686.53	16.9%
Non-residential (Towns)	1525.88	7.0%
Total non-residential	5212.41	23.8%
C & D	2632.80	12.0%
Tires (Monofilled)	554.22	2.5%
TOTAL	21865.74	100.0%

Source: FY 2001-02 Solid Waste Management Annual Reports and Staff Estimates

The planning area estimates that 61.6% of the waste disposed is residential waste, 23.8% is non-residential (commercial, industrial, and institutional), and 12.0% is C&D waste. C&D waste has had the greatest increase in tonnage over all other waste stream in the last three years. Pender County does not permit disposal of land clearing and inert debris (LCID) or yard waste at its transfer station or any recycling/convenience center. However, there are several private facilities in Pender County that accept yard waste from individuals for a fee or residents are permitted to burn LCID in their yard.

The county does not have a comprehensive study, at this time, of our own residential waste. Although it would be valuable to have one in the future, county growth will determine the practicability of a study in five or six years. However, the County does have some recycling statistics. The data in Table 3 is taken from the Quick Waste Stream Analysis prepared by the NC DPPEA for Pender County and the State of North Carolina. This state study shows that the most prevalent materials in the residential waste stream are paper, cardboard, and organics. Pender County does not accept yard waste at our convenience sites. Using the 13,469.97 tons of residential waste and 1666.18 tons that Pender County and its towns recycled in FY 2001-02, the theoretical tons of different materials in the local waste stream can be compared with state estimates, in order to provide an estimate of theoretical recoverable materials (right-hand column).

Table 3. Estimate of Residential Waste Composition FY 2001-02

MATERIAL	STATE ESTIMATE (PERCENT)	ESTIMATED TONS DISPOSED	ACTUAL RECYCLED (TONS)	THEORETICAL RECOVERABLE MATERIALS
Paper	32.8%	7171.96	148.50	7023.46
Cardboard	21.6%	4723.00	191.83	4531.17
Plastics	8.5%	1,766.04	56.10	1802.49
Organics	21.8%	4,543.96	0.00	4766.73
Textiles	4.5%	926.82	0.00	983.96
Glass	7.1%	1,483.42	111.45	1441.02
Aluminum	1.1%	227.87	4.32	236.20
Metal	2.6%	545.54	994.37	(425.86)
Miscellaneous (Comingled)	0%	N/A	0	0
TOTAL	100%	21,865.74	1,506.57	19,386.75

Sources: NC DPPEA Quick Waste Stream Analysis for Pender County and State of North Carolina; FY 2001-02 Solid Waste Annual Report

An examination of the major types of commercial and industrial firms that dispose of waste in the area can help to estimate the composition of non-residential waste. The most common non-residential materials disposed are paper, corrugated cardboard, and plastics. The largest single materials disposed are tires, white goods, and C&D. Several of these materials currently being disposed are potentially recyclable or reusable (see **Part V**).

Part II. LOCAL WASTE REDUCTION GOALS

Since the baseline year of 1991-92, Pender County has made a 16% reduction in our solid waste disposal, from .60 to .50 annual tons per capita (see **Appendix F**). The decrease in the per capita rate has been slight because of the impact of Hurricanes in the area over the past years. The planning area established an additional local goal of 6% waste reduction to be reached by June 30, 2006 and a further goal of 16% to be reached June 30, 2013. Therefore, reduction goals from the baseline year are 22% and 32%, respectively. These goals are established exclusive of storm events. Pender County's targeted goal of 32% reduction is significant for a rural county. This falls short of the State's 40% goal because the County is not a large solid waste producer, so any reduction has a significant impact on the waste stream. In addition, Pender County's solid waste is managed as an enterprise fund that supports all activities. Thus the financial ability of the fund to support expensive reduction measures is not feasible.

The waste reduction goals can be converted from percents to tons diverted by examining population estimates (see **Appendix F**) and past waste disposal figures. The baseline year (FY 1991-92) disposal rate was 0.60 ton per capita (figure provided by the N.C. Solid Waste Section). At the goal per capita disposal rate, Pender County would dispose 20,766.42 tons in FY 2005-06 and 18,687.57 tons in FY 2012-13 (see **Table 4**).

Table 4. Three and Ten-Year Waste Projection at Goal Reduction Rates

YEAR	POPULATION	WASTE DISPOSAL	PER CAPITA DISPOSAL RATE
Baseline Year, 1991-92	29,022	17,499.67 tons	0.60 tons
YEAR	PROJECTED POPULATION	PROJECTED WASTE DISPOSAL	
FY 2005-06	48,294	22,698.18 tons	0.47 tons
FY 2012-13	56,629	23,217.89 tons	0.41 tons

Source: Office of State Planning, State Demographics <http://www.ospl.state.nc.us/demog/munpop98.html>; Staff Estimates

To meet the local goal of 22% per capita waste reduction in FY 2005-06 and 32% in FY 2012-13, Pender County must reduce its per capita disposal rate to 0.47 and 0.41 tons per capita respectively (see **Table 6**). Using the new per capita rates, the target annual tonnage remaining for disposal by Pender County would be 22,698.18 tons in FY 2005-06 and 23,217.89 tons in FY 2012-13. In other words, 2,954.82 tons of future annual waste disposed must be diverted from landfills in FY 2005-06 and 6,602.61 tons in FY 2012-13 to meet waste reduction goals.

Part III. MEETING THE WASTE REDUCTION GOALS

This plan is designed to reduce Pender County's waste by 2,954.82 tons in FY 2005-06 and 6,602.61 tons in FY 2012-13. To do this, Pender County will target the types of waste generated as shown in **Table 5**. How these wastes will be targeted is addressed below. More detailed descriptions of specific waste reduction activities planned appear in **Part V**.

Table 5. Approximate Waste Reduction by Sector, FYs 2005-06 and 2012-13

WASTE TYPE	TARGETED TONS to REDUCE in FY 2005-06	TARGETED TONS to REDUCE in FY 2012-13
Residential (64%)	1891.08	4,225.67
Non-residential (24%)	709.15	1,584.62
Construction and Demolition (12%)	354.57	792.31
GOAL	2,954.82	6,602.61

Source: Staff Estimates

Residential Waste

This plan targets 1891.08 tons in FY 2005-06 and 4,225.67tons in FY 2012-13 for reduction in residential sector waste. **Table 6** summarizes the residential waste reduction methods to be used to meet the local goals. School and community education are not listed because they are expected to affect each of the other waste reduction methods listed. Specific activities planned are described in **Part V**.

Table 6. Targeted Residential Waste Reduction, FYs 2005-06 and 2012-13

REDUCTION METHOD	TARGETED MATERIALS	EST. TONS FY 2005-06	EST. TONS FY 2012-13
Source Reduction	Paper (10%)	189.10	422.57
	Cardboard (5%)	94.55	283.67
Total Source Reduction		283.65	706.24
Recycling	Aluminum cans (1%)	18.91	42.26
	Metals (5%)	94.55	211.28
	Tires (22%)	416.04	929.65
	Glass (20%)	378.22	845.13
	Paper (20%)	378.22	845.13
	Cardboard (15%)	283.66	633.85
	Plastics (2%)	37.82	84.51
Total Recycling		1418.31	3169.25
TOTAL		1891.08	4225.67

Source: staff estimates

Non-residential Waste

The goal for reducing non-residential waste is approximately 92.60 tons in FY 2005-06 and 1584.63 tons in FY 2012-13. The largest generators of non-residential waste are specifically targeted in this effort. **Table 7** summarizes non-residential waste reduction projections.

Table 7. Targeted Non-residential Waste Reduction, FYs 2005-06 and 2012-13

REDUCTION METHOD	TARGETED MATERIALS	EST. TONS FY 2005-06	EST. TONS FY 2012-13
Source Reduction	Paper (10%)	70.92	158.46
	Cardboard (10%)	70.92	158.46
Total Source Reduction		141.84	316.96
Recycling	Aluminum cans (5%)	35.46	79.23
	Cardboard (10%)	70.92	158.46
	Glass (20%)	141.84	316.92
	Plastics (10%)	70.92	158.46
	Paper (30%)	212.76	475.38
	Metals (5%)	35.46	79.23
Total Recycling		574.41	1283.54
TOTAL		709.15	1584.63

Source: staff estimates

Construction and Demolition Waste

It is estimated that construction and demolition waste can be reduced by at least 93.36 tons in FY 2004-05 and 218.80 tons in 2009-10. The proposed reduction methods and targeted wastes are shown in **Table 8**.

Table 8. Targeted Construction and Demolition Waste Reduction, FYs 2005-06 and 2012-13

REDUCTION METHOD	TARGETED MATERIALS	EST. TONS FY 2005-06	EST. TONS FY 2012-13
Recycling	Lumber, Sheet Rock, Concrete, Shingles	354.58	792.37
TOTAL		354.58	792.37

Source: staff estimates

Part IV. THE PLANNING PROCESS AND PUBLIC PARTICIPATION

The Pender County Planning Advisory Committee (see **Appendix H**) met on July 3, 2000 to review the original ten year plan, the committee also met on April 16, 2003 to review the three year update, and offered suggestions to help meet the reduction goals. The committee also received a copy of the last three-year update to make any suggestions or comments about the new plan. County solid waste staff updated the original document to reflect revised reduction goals. The Advisory Committee was made up of the Assistant to the County Manager, managers and mayors from the towns, and a solid waste provider from the current waste hauler contractor for the County.

Comment [o1]: Update meeting date

Comment [o2]: Date of update meeting

A public hearing was held on May 19, 2003 at the Public Meeting Room in Burgaw. The meeting was advertised on _____ in two local newspapers. The Solid Waste Planning Advisory Committee discussed setting waste reduction and other goals, establishing different solid waste management programs, and cost and financing estimates. This plan has been submitted to the elected boards of each participating local government for approval (see **Appendix I**).

Comment [o3]: Change Date

Comment [o4]: Change Date

Comment [o5]: Change Date & Advertise Newspaper

The public was and has been invited to read the final version of the plan, placed in the Pender County Clerk's office and the county libraries in Burgaw and Hampstead.

**Part V. SOLID WASTE MANAGEMENT METHODS:
ASSESSMENT OF PROGRAMS AND DESCRIPTION OF INTENDED ACTIONS**

Each solid waste management method as required by North Carolina G.S. 130A-309.09A (b) is described below. Each section includes an assessment of the current program and a summary of the intended actions.

A. Reduction Element

Current Program: Few resources have been directed toward source reduction. However, a series of public hearings across the County were held in July 1994 in an effort to stress the importance of source reduction as the primary means of keeping costs down. Additionally, Pender County's per capita disposal rate of 0.50 is considerably lower than the states' 1.22 tons per capita in FY 2001-02. Pender County is a rural county and rural counties normally have lower per capita rates than urban counties.

A "Curtail-Your-Junk-Mail" program has been developed that has allowed county residents to obtain postcards addressed to major firms that sell names and addresses to advertising firms. The cards enable residents to request removal of their names from mailing lists supplied to advertisers. These cards are distributed periodically to citizens at the convenience centers.

Intended Actions: The residential source reduction program has been targeted to reduce future waste by 210.06 tons in FY 2005-06 and 492.31 tons in FY 2012-13.

The County's solid waste enterprise fund will develop, for the county manager, a source reduction resolution that will contain language encouraging county departments to use fewer disposable items, purchase products with longer life, and double side all documents (when feasible).

It is expected that the non-residential source reduction program can reduce future waste by 74.70 tons in FY 2005-06 and 175.04 tons in FY 2012-13. Company representatives can be encouraged to call the Division of Pollution Prevention and Environmental Assistance (DPPEA) for a waste audit.

The community and school education programs also address source reduction and will contribute to the amount of waste reduced.

B. Collection Element

Current Program: Waste is collected and hauled by private enterprise (see **Table 9**). Waste is currently collected by Waste Industries, Inc., from twelve collection ("convenience") centers located in the rural areas of the county (see map in **Appendix C**). The collection centers currently are staffed through the same firm within the solid waste collection contract. The centers are open on various days and times, (see **Appendix C**). Residential solid waste is accepted at each center in an enclosed compactor. The contractor hauls this waste to the County's transfer station, also operated by Waste Industries. A variety of recyclable materials are also accepted (see **Section C**).

Table 9. Waste Hauling Information, FY 2001-02

HAULERS	RESIDENTIAL WASTE	NON - RESIDENTIAL WASTE	C&D WASTE	TONS HAULED	DISPOSAL DESTINATION
Central Carolina Tire	X	X		554.22	Tire monofill, Cameron, NC
Waste Industries	X	X	X	19014.52	BFI Sampson County /various recycling processors
Waste Mgmt/ARS	X	X	X	1516.20	BFI Sampson Co.
Others	X			780.80	Pender County Transfer Station
TOTAL				21865.74	

Source: information provided to the planning area by municipal solid waste haulers and County Waste Disposal Report

As fewer landfills for MSW exist, transfer stations have become a prominent part of North Carolina's solid waste infrastructure. These facilities receive waste from a variety of sources including individual homeowners and businesses, local governments, and private waste hauling companies. At the transfer station these wastes are consolidated into larger truckloads (typically a tractor-trailer with cargo loads of 20 tons) that are more suitable for transporting greater distances

The transfer station, located in Hampstead, and the twelve collection (recycling/convenience) centers serve most of the County's unincorporated area, and are geographically dispersed across inhabited areas of the county (see map in **Appendix C**). Based on population figures, Pender County does not need to build any new collection centers, but may consider extended days/hours in more heavily populated areas. Additionally, private haulers are required by the Pender County Solid Waste Ordinance to meet certain requirements as a condition of licensure. Vehicles must be covered, leak proof, durable, and of easily cleanable construction.

Intended Actions: The County will continue to use collection centers to collect waste and recyclables from rural areas of the unincorporated county. Collection center hours will be adjusted as needed for areas with heavy population growth. The Eastern area of the county is growing very rapidly, and accounts for a large portion of the county's total solid waste disposal requirements.

The County will continue to look for ways to improve service and conduct surveys on the need for curbside pickup. At this time curbside pickup would cost residents more money and would not help to alleviate any problems associated with the convenience centers.

C. Recycling and Reuse

Recycling

Current Program: Pender County has been working since late calendar year 1991 to establish a stable recycling program. In the fall of 1991 and during 1992, the "green box" open dumpster system was replaced by manned convenience/recycling centers. In FY 2001-02 the county recycled about 7% of its residential waste. Twelve collection centers have a variety of collection bins, including ten (10) ton compactor units, roll-offs, and converted dumpsters. Ten materials are collected: newspaper; cardboard; plastic bottles; aluminum cans; steel cans; clear, brown, and green glass; batteries; motor oil; tires; and white goods. Collection center staff teaches residents proper sorting and material preparation and are available to answer questions. Brochures containing recyclable material listings, phone numbers, and other information were distributed on a one-time basis at the convenience centers and published in the newspaper, following the landfill closure.

Paper and cardboard are taken to Paper Stock Dealers, glass and aluminum and steel cans are taken to Container Recycling Alliance, and metals were taken to Southern Iron & Metals (now metals & white goods go to East Coast Recycling).

The amount of materials recycled by the county-operated program is shown in **Table 10**.

Table 10. Residential Recycling in Tons, FY 2001-02

MATERIAL	COUNTY TONS
Glass – mixed	111.45
Plastic - mixed	56.10
Aluminum cans	4.32
Steel cans	0.00
White goods and other metals	994.37
Newspaper	148.5
Corrugated cardboard	191.83
Batteries ** (each)	1,500
Motor Oil ** (in gallons)	11,687

Source: tons recycled derived from County Annual Solid Waste Management reports

** Batteries and motor oil are provided for information only, and are not factored in this table's computations.

Comparing the recycling tonnages listed above with the estimated waste tonnages and estimated composition from **Table 3**, shows that there is potential to increase the amount of

each material recycled. The table shows that there is plenty of material remaining in the waste stream that can be recycled and/or reduced. According to these figures, the quantity targeted to recycle in **Table 6** can be met.

During FY 98-99, Pender County marketed most of its metal and white goods materials through East Coast Recyclers. However, other markets are available. Changing markets may require the county to use another processor or assume the processing function itself. There are few **local** markets for paper and plastic.

Due to its rural nature, Pender County has no curbside recycling program; however, participation in residential recycling could nonetheless be increased. Maximizing recovery of residential recyclables will entail increasing participation through awareness and possibly increasing the types of materials accepted (e.g. add magazines and other color inserts).

It is unclear how much recycling is being done by industries, businesses, and institutions, but it is clear that there is a large amount of recyclables in that waste stream. It may be possible to find other markets or outlets for some of the currently unmarked wastes.

Intended Actions: The residential recycling programs are targeted to reduce waste by an additional 721.30 tons in FY 2000-01 and 1,085.73 tons in FY 2003-04. **Table 11** shows the projected tons that will be targeted by type of material.

Table 11. Planning Area Recycling Projections, FY 2000-01 to FY 2003-04

MATERIAL	2001-02 TONS	2002-03 TONS	2003-04 TONS	2004-05 TONS
Aluminum cans	4.32	13.59	15.54	17.53
Metals	38.04	45.40	52.76	68.32
Glass	111.45	163.59	186.95	205.36
Paper	148.50	589.48	663.16	694.75
Cardboard	191.83	121.17	136.31	145.86
Plastics	56.10	28.80	31.01	32.60
TOTAL	550.24	962.03	1,085.73	1,152.20

Source: staff projections

It is assumed that residents who currently use the solid waste and recycling collection centers will continue to recycle. Collection center staff has been monitoring recycling habits and have seen a steady increase in the number of people who recycle. Approximately one-third of the residents currently using the collection centers use the recycling bins. Collection center staff continually educates residents on how to separate materials.

Non-residential recycling is targeted to reduce waste by 217.15 tons in FY 2003-04 and 260.59 tons in FY 2006-07. Research into potential new recycling markets may prove to be a key to reducing non-residential waste.

In an effort to further reduce the amount of non-residential cardboard disposed, the county will work on an application for a grant to purchase a cardboard baler and then lease it to Waste Industries, Inc. so it will be placed at the transfer station. Cardboard would be accepted at the site free of charge. Preliminary discussions with Waste Industries, Inc. have been positive.

To make recycling more uncomplicated for county residents, the county is working on setting up service with Waste Industries in which one container for all recyclables would be used. Residents would not have to separate their recyclables; instead residents would dispose of all their recyclables in one container. This change would allow for not only facilitate traffic at the centers, but encourage more people to recycle.

Reuse

Current Program: There is currently no reuse program. However, there are charitable organizations in the area, such as the Salvation Army, that may be of assistance. Alternative types of reuse programs need to be developed and promoted to reach people who do not use the thrift store or other programs. More convenient methods may increase participation. Particular materials, such as appliances, can be targeted. Exchange of non-residential reusable items needs to be addressed.

Intended Actions: Exchange sheds (or "swap shops") are being considered that could be built at the collection centers to offer a more convenient reuse program. Collection center staff will maintain the sheds and donate any items that are not being taken to the Salvation Army.

The county newspaper "give away" section will be promoted as a place to list reusable household items such as appliances.

D. Composting and Mulching

Composting

Current Program: The County and the Cooperative Extension Service have encouraged residential composting, but the program could be expanded or given again at a later date. Composting could also be done at the county schools and the community college. The County gave away approximately 200 composting bins at no charge to citizens who attended a two (2) hour class. The County in the Summer/Fall 2000 will conduct a survey of continued use of composting.

Intended Actions: Due to the rural composition of Pender County, those that would benefit from composting are already doing so. No countywide composting program is being considered.

Mulching

Current Program: Yard waste is not accepted at the county convenience/recycling centers. Most residents dispose of their own yard waste through on-site open burning or other methods.

Intended Actions: Again, due to Pender County's rural composition, no countywide mulching program is now being considered. Residential yard waste will continue to be excluded from the county's convenience/recycling centers. A fee-mulching program may be considered in the future. However, the County intends to set up emergency sites for handling (burning) hurricane

storm vegetative debris. A list of yard waste disposal sites within the County will be developed for citizen information.

E. Incineration with Energy Recovery

Current Program: Incineration with energy recovery is not part of the county's current program. The county cannot afford this waste management option due to the County's own low total waste flow, public opinion, and capital/operating costs.

Intended Actions: The County does not plan to build an incinerator with energy recovery.

F. Incineration without Energy Recovery

Current Program: Incineration is not part of the county's current program. The county cannot afford this waste management option due to the local waste flow, public opinion, and capital/operating costs. There are no regional facilities of this type hosted in nearby counties that are currently operating.

Intended Actions: The County does not plan to use incineration without energy recovery.

G. Transfer of Solid Waste Outside Geographic Area

Current Program: Pender County uses a transfer station operated by Waste Industries, Inc., on a long-term renewable contract. Solid waste collected at the transfer station is then transported to the Subtitle D landfill in nearby Sampson County, under an agreement with Waste Industries who operates the facility under an agreement with the Sampson County Government.

The transfer station is expected to operate indefinitely because it is unlikely that the county will build another landfill.

Intended Actions: Pender County will continue current policies and procedures.

H. Disposal of Solid Waste

Current Program: The Pender County landfill closed on April 8, 1994. The facility is not being used for any other purpose at this time (an animal shelter was built on the "virgin land" in 1996). Pender County has signed a long-term collection contract with Waste Industries, Inc. with a clause allowing price increases based on the Consumer Price Index. Waste Industries transports collected waste to Sampson County as outlined above.

Intended Actions: Pender County's plan is to continue handling the disposal and transfer aspects of the solid waste program in the current manner. Pender County has approved an additional charge for construction and demolition waste, in an effort to recover the overall costs of handling/disposing of this waste.

In 1999, Pender County dealt with debris from Hurricanes Dennis and Floyd. The county set up a site for emergency management of storm debris. This site was centrally located to manage excessive amounts of debris. The site selected met all federal, state, and local regulations

concerning storage, processing and potential controlled burning. Specific plans for entrance and exit paths at the site, controlled access, and other issues were coordinated with county emergency management. This plan worked well, and will continue to be used in the event of future storms.

Part VI. EDUCATION, SPECIAL WASTES, ILLEGAL DISPOSAL, AND PURCHASING: ASSESSMENT OF PROGRAMS AND DESCRIPTION OF INTENDED ACTIONS

A. Community and School Education

Community Education

Current Program: Educational pamphlets describing the locations of collection centers, recyclable materials accepted, and how to prepare materials for recycling (e.g. wash and remove lids) will be updated and distributed by Pender County. The individual towns do not have waste education programs.

The level of participation in residential recycling may be increased by more intensive public education. Also, current education has been limited to brochures. Use of the local newspaper can be expanded. Also, use of the public access television channel on cable TV may be increased. Education can be enhanced by targeting specific audiences, specific recyclable materials, and using many different methods of communication.

Large generators of waste that could be targeted include the public schools and shopping centers - places where large numbers of citizens could be reached by a single event. Specific recyclables can be targeted, such as newspapers, magazines, corrugated cardboard and used oil. Volunteer time can be organized to reach several different audiences.

Intended Actions: The county and the Cooperative Extension Service will consider several methods to encourage source reduction and recycling, and if feasible, institute programs that facilitate community participation.

School Education

Current Program: School children are taught the benefits of recycling, and encouraged to do so as much as possible. The schools need to take the lead to maintain this program.

Intended Actions: Schools will be encouraged to participate in the state Adopt-A-Highway program and other recycling and/or beautification programs. Elementary schools will be given copies of the video, The Rotten Truth, to use in the education of students. Local schools were involved in the composting program initiated by the County through a DPPEA grant in FY 1999-2000.

The county will assist teachers in obtaining educational materials from the NC Division of Environmental Assistance and Pollution Prevention and the NC Office of Environmental Education. In addition, teachers will be given information about the annual environmental educators conference sponsored by the NC Office of Environmental Education.

Local livestock farmers will be given the opportunity to participate in a program for collection of school cafeteria food waste for use as animal feed, if disease control measures can be instituted.

B. Special Waste Management

Tires

Current Program: Tires are collected free of charge (up to five tires at a time) at the county convenience centers. Tires from outside the county are not allowed. Tires are then hauled to a monofill operated by Central Carolina Tire, Inc., out of Cameron, NC.

Intended Actions: Tire collection and hauling will remain essentially the same, although the County will encourage Central Carolina Tire to recycle as many tires as possible. Cost recovery for large tire generators will be examined during FY 2000-01.

White Goods

Current Program: White goods are also collected at the county convenience centers. White goods are now recycled at East Coast Recycling, a firm operating out of Virginia.

White goods collection has been increasing dramatically. Residents may be cleaning up old piles of appliances since no additional fee is charged to dispose of them at the convenience centers.

It is assumed that most white goods are recovered in Pender County.

Intended Actions: White goods collection will remain the same.

Lead-acid batteries

Current Program: Lead-acid batteries are collected at the county collection centers. Periodically, the Solid Waste Manager is called to take them for recycling. Residents can also recycle batteries with a number of auto parts dealers.

Currently, 1,000-1,300 batteries are collected every six to nine months. It is estimated that most of the batteries generated in the county are being reclaimed. Many residents do their own automotive maintenance, and with credit given for battery cores, it is expected that most of the batteries taken out of cars by do-it-yourselfers are recycled through auto parts dealers.

Intended Actions: Battery collection locations will remain the same.

Used Motor Oil

Current Program: Collection of used oil is made available to all citizens at the collection centers. Noble Oil Company picks up used oil on a periodic basis. Pender County collected 14,914 gallons of used oil during FY 2001-02.

Intended Actions: Used oil collection will remain the same.

Household Hazardous Waste

Current Program: The County has no household hazardous waste (HHW) program at this time.

The county does not have the financial resources to establish a permanent facility for HHW. A regional program is the most cost-effective method for disposing of HHW for the county. Another concern is that with a transfer station operating, it may be necessary to monitor residential wastes more carefully for hazardous constituents as they enter the collection centers.

Intended Actions: The County will research a modified HHW site at its old landfill during FY 2000-01, or will propose, consider, and evaluate a regional program with neighboring counties. The county intends to work with the Cooperative Extension Service to educate the agricultural community about proper disposal of hazardous materials. Household hazardous waste will also be included in the solid waste ordinance.

Pesticide Containers

Current Program: Pender County Cooperative Extension Service, in cooperation with the North Carolina Department of Agriculture, collects empty pesticide containers for recycling. USAg Recycling, Inc. processes these empty, rinsed, containers. This program has been a success in our area, especially for farmers.

Intended Actions: Continue and/or expand current program through a Household Hazardous Waste Collection Center.

Septage

Current Program: Pender County does not currently have a program to reduce septage wastes.

Intended Actions: No action is planned.

C. Prevention of Illegal Disposal and Management of Litter

Illegal Disposal - Operated Sites

Current Program: Illegal disposal of waste is addressed in the Pender County Solid Waste Ordinance, and covers requirements and penalties pertaining to illegal disposal; See Appendix. While illegal disposal undoubtedly occurs, it does not appear to be a serious problem. The County's Health, Sheriff, and Planning Departments investigate sites when reported by concerned citizens. A newly hired Code Enforcement Officer will investigate dump sites and other complaints.

Intended Actions: Current illegal disposal enforcement will continue.

Litter Management and Illegal Household Dumping

Current Program: Pender County has no litter or illegal household dumping prevention program at this time. However, the Pender County Code makes it illegal to do so, and establishes fines and provides for enforcement. Roadside litter is a problem in Pender County, as it is elsewhere.

Intended Actions: Litter management and illegal household dumping enforcement will continue as it is currently. Programs such as the Adopt-A-Highway program will be encouraged. The County participates in the semi-annual Governor's Litter Sweep campaign by encouraging Adopt-A-Highway participants and community groups to select a road to clean up.

D. Purchase of Recycled Materials and Products

Current Program: No recycled product-purchasing program is in place at this time; however, most paper products purchased have recycled content.

Intended Actions: No changes in existing policies are planned.

E. Summary of Intended Actions

The intended actions described on the previous pages are listed chronologically in **Table 12** and derived from **Appendix J**.

Table 12. Intended Actions Implementation Schedule

FISCAL YEAR	PROGRAM
2003-04 Upcoming Year	Institute magazine and color insert recycling Promote Adopt-A-Highway program and Litter Sweep campaign Evaluate collection and disposal alternatives for C&D Promote a curtail-your-junk-mail program Research and evaluate HHW Program Update and distribute recycling information and brochures to citizens
2004-05	Research feasibility of starting a "give-away" section in the local newspaper Develop waste exchange facility plan Establish a county site for disposal of Household Hazardous Waste Implement education program for citizens and in schools
2005-06	Re-evaluate waste disposal contract with Waste Industries Re-evaluate recycling markets Purchase Baler for cardboard collection
2006-07	Work on 3-year solid waste management plan update

Source: staff estimates

Part VII. SOLID WASTE COSTS AND FINANCING METHODS

Description and Assessment of Costs:

County Description:

Pender County operates a solid waste program, while the incorporated communities of Atkinson, Burgaw, St. Helena, Surf City, Topsail Beach, and Watha contract out their programs with local haulers. The county-operated program and the contracted programs separate the solid waste costs shown below.

The total budget for the county-operated solid waste program during FY 2001-02 was \$2,289,499. The annual cost of county collection and disposal was \$2,109,137. This includes the collection centers and collection from government-operated facilities such as schools, town hall, and the courthouse. Pender County, including the incorporated communities, managed a projected 21,865.74 tons of waste and 1,506 tons of recyclable materials in FY 2001-02. Summaries of the county-operated solid waste program costs are shown in **Table 13**. These totals are derived from the Solid Waste Management Annual Reports for FY 2001-02.

Table 13. County-operated Solid Waste Program Costs, FY 2001-02

	Solid Waste Collection	Solid Waste Disposal	TOTAL
PROGRAM COST	\$1,092,140	\$1,066,187	\$2,109,137
COST PER TON	\$47.70	\$57.63	\$96.46
COST PER HOUSEHOLD	\$56.38	\$ 48.76	\$114.01

Source: FY 2001-02 Annual Solid Waste Report for Pender County

County Assessment:

According to the analysis, the cost of collection is higher than disposal of waste is on a per ton basis. Waste reduction costs are included in collection costs.

Topsail Beach Description:

Topsail Beach contracts solid waste collection and recycling. The town serviced a total of 1128 households that disposed of a projected 709.94 tons of waste in FY 2001-02. Topsail Beach's solid waste program costs are summarized for that year in **Table 14**. These totals are derived from the Solid Waste Management Annual Report for FY 2001-02

Table 14. Topsail Beach Solid Waste Program Costs, FY 2001-02

	COLLECTION and DISPOSAL	WASTE REDUCTION	TOTAL
PROGRAM COST	\$ 110,509.56	\$ 12,311.79	\$122,821.35
COST PER TON	\$155.66	\$17.34	\$173.00
COST PER HOUSEHOLD	\$97.97	\$10.91	\$108.08

Source: Topsail Beach FY 2001-02 Solid Waste Management Annual Report

Topsail Beach Assessment:

Topsail Beach has implemented a recycling collection center in Topsail Beach that collects newspaper, plastic, aluminum, and glass. Town employees transfer the recycling materials to Pender County's Hampstead Convenience Center as needed. The population of Topsail Beach is mainly seasonal, thus the tons collected and disposed of vary seasonally.

Watha Description:

Watha has 153 residents (92 households) that disposed of a projected 17 tons of waste and 5.8 tons of recyclable material in FY 2001-02. The summary of solid waste costs for that year is shown below in **Table 15**. These totals are derived from the Solid Waste Management Annual Report for FY 2001-02.

Table 15. Watha Solid Waste Program Costs, FY 2001-02

	COLLECTION AND DISPOSAL	WASTE REDUCTION	TOTAL
PROGRAM COST	\$5,963.10	\$0.00	\$5963.10
COST PER TON	\$261.54	\$0.00	\$261.54
COST PER HOUSEHOLD	\$64.82	\$0.00	\$64.82

Source: Watha FY 2001-02 Solid Waste Management Annual Report

Watha Assessment:

Watha's waste reduction program is extremely small, with only 153 residents. Therefore, there is no long-range recycling plan for the town of Watha.

St. Helena Description:

St. Helena has 402 residents (160 households) that disposed of a projected 162.90 tons of waste and 12.67 tons of recyclable material in FY 2001-02. The summary of solid waste costs for that year are shown below in **Table 16**. These totals are derived from the Solid Waste Management Annual Report for FY 2001-02.

Table 16. St. Helena Solid Waste Program Costs, FY 2001-02

	COLLECTION AND DISPOSAL	WASTE REDUCTION	TOTAL
PROGRAM COST	\$17,704	\$6,043.20	\$24,347.20
COST PER TON	\$108.68	\$476.86	\$645.54
COST PER HOUSEHOLD	\$110.65	\$42.45	\$152.17

Source: St. Helena FY 2001-02 Solid Waste Management Annual Report

St. Helena Assessment:

St. Helena's recycling program is relatively new, and had considerable up-front expense, accounting for the artificially high cost per ton. Recycling costs have remained relatively the same in the last three years due to the low yield of recyclables in the town.

Burgaw Description:

Burgaw has a population of 3,375 residents that disposed of a projected 848.27 tons of waste and 94.82 tons of recyclable material in FY 2001-02. The summary of solid waste costs for that year are shown below in **Table 17**. These totals are derived from the Solid Waste Management Annual Report for FY 2001-02.

Table 17. Burgaw Solid Waste Program Costs, FY 2001-02

	COLLECTION AND DISPOSAL	WASTE REDUCTION	TOTAL
PROGRAM COST	\$142,268	\$34,032	\$176,300
COST PER TON	\$167.72	\$358.91	\$526.63
COST PER HOUSEHOLD	\$141.98	\$33.96	\$175.94

Burgaw Assessment:

Burgaw's recycling program is developing. As time goes on, the Town of Burgaw will explore a variety of methods to reduce costs, including a cost-share program with their contractor for sale of recyclables.

Surf City Description:

Surf City reported 2,747 households that disposed of a projected 1988.99 tons of waste and 8.35 tons of recyclable material in FY 2001-02. The summary of solid waste costs for that year are shown below in **Table 18**. These totals are derived from the Solid Waste Management Annual Report for FY 2001-02.

Table 18. Surf City Solid Waste Program Costs, FY 2001-02

	COLLECTION AND DISPOSAL	WASTE REDUCTION	TOTAL
PROGRAM COST	\$ 274,136.36	\$648.84	\$ 274,785.20
COST PER TON	\$137.83	\$.32	\$138.15
COST PER HOUSEHOLD	\$99.79	\$.24	\$100.03

Source: Surf City FY 2001-02 Solid Waste Management Annual Report

Surf City Assessment:

Surf City's recycling program is still somewhat small. Recycling is voluntary, with no curbside pickup. Currently, the town is generating no recycling revenues. Surf City has made an agreement with a local grocer to drop off the town's corrugated cardboard for baling and recycling. The population of Surf City is seasonal, thus the tons collected and disposed of vary seasonally.

Atkinson Description:

Atkinson has only households that disposed of a projected 151.32 tons of waste and 0 tons of recyclable material in FY 2001-02. The summary of solid waste costs for that year is shown below in **Table 19**.

Table 19. Atkinson Solid Waste Program Costs, FY 2001-02

	COLLECTION AND DISPOSAL	WASTE REDUCTION	TOTAL
PROGRAM COST	\$12,151.12	\$0.00	\$12,151.12
COST PER TON	\$137.92	\$0.00	\$137.92
COST PER HOUSEHOLD	\$83.80	\$0.00	\$83.80

Source: Atkinson FY 2001-02 Solid Waste Management Annual Report

Atkinson Assessment:

Atkinson is extremely small, with just 145 households. No long-range reduction is planned.

Description of Financing Methods:

The current solid waste program is funded through the county household solid waste user fee, property taxes, regular MSW tipping, construction and demolition tipping fees, state revenues, and the sale of recyclables. The tire program is paid for through the tire tax levied by the state. The white goods tax distribution generally helps to support the white goods and metals recycling program. The towns pay for solid waste management services through individual assessments. See **Table 20** for a summary of current financing methods.

Table 20. Solid Waste Financing Methods Used By the Planning Area, FY 2001-02

	Total SWM Budget	Tip fee	Property Taxes - General Fund	Household Charge	Volume or Weight-based fees	Sale of Recyclables	Grants	Tire & White Good Tax	Other
Pender County	\$2,289,499	14.35%	5.62%	69.45%	0.00%	0.23%	0.00%	3.5%	6.85%

Source: Finance Department records plus County and Municipal Solid Waste Management Annual Reports

Assessment of Financing Methods: The county's current financing methods generated enough revenue for the FY 98-99 solid waste program for the first time, with no supplement from the general fund. However, due to explosive residential growth, Hurricane Dennis/Floyd debris, strong C&D tonnages, and static revenues, the forecast for additional revenue (subsidy) from the general fund is made for FY 2000-01. As tonnages and inflationary costs increase, sources of revenue will need to be expanded. For example, an increase in the household fees may be necessary to reduce the general fund subsidy. Other revenue options include establishing construction and demolition tipping fees for **all users**, and applying for one-time grant funds. Below is a description of each financing method used to determine the user fees.

Tipping Fees: The transfer station's solid waste tipping fee is \$60 per ton in FY 2001-02. If the County ever decides to purchase the existing transfer station equipment, the operational costs of the facility would be increased. However, the one-time capital cost of purchasing the transfer station may be prohibitive.

General Fund: General fund (property tax) money is no longer used to fund the county's solid waste program. The solid waste program is operated as an enterprise fund since FY 1998-99.

Household Fee: County residents who **do not contract** with a private hauler pay the annual household waste fee of \$133. This fee contributes 69.45% of the total revenue that supports the program. An increase in the number of households in the unincorporated areas of the county will increase this revenue; however, revenues may decrease if more households begin to use private haulers. The structure of the household fees may need to be modified to include a tiered system for commercial users.

Volume or Weight-based Fees: Volume or weight-based fees are not an immediate option for the county program, but are being considered.

Sale of Recyclables: Revenue from the sale of recyclables funds approximately 0.23% of the county operated solid waste program. Although such revenues can be expected to rise with increasing recycling levels, fluctuations in material prices make it difficult to predict how much revenue will be generated by recycling. The total gross recycling revenues for FY 2001-02 are listed by material in **Table 21**.

Table 21. County Revenue from the Sale of Recyclables, FY 2001-02

MATERIAL	AVERAGE \$/TON	FY 2001-02 TONS COLLECTED	GROSS REVENUE
Glass - mixed	\$27.50	111.45	\$1,694.00
Plastic - mixed	\$0.00	56.10	\$0.00
Aluminum	\$600.00	4.32	\$6,902.00
White Goods	\$0.00	994.37	\$0.00
Newspaper & Cardboard	\$0.00	340.33	\$0.00
Batteries	N/A	Unknown	N/A
TOTAL		1,284.09	\$7,727.85

Source: staff calculations and financial records

Grants: Sources of grant funding are limited, but the county plans to apply for any grant funds to cover implementation of new programs.

Tax Reimbursements: The County recognizes that the revenue received from state tax reimbursements may change in the future.

Part VIII. FACILITIES AND RESOURCES AVAILABLE THROUGH PRIVATE ENTERPRISE

The Pender County planning area considered the use of privately operated facilities and resources in developing this plan. All municipal solid waste disposal is provided through private enterprise. In addition, a large portion of waste collection and some recycling is operated privately, under contractual arrangements. Pender County uses a combination of publicly and privately operated programs.

APPENDIX A
Resolutions from local governments

Each Town was asked to adopt the following resolution:

RESOLUTION TO APPROVE THE PENDER COUNTY SOLID WASTE PLAN.

WHEREAS, better planning for solid waste will help protect public health and the environment, provide for an improved solid waste management system, better utilize our natural resources, control the cost of solid waste management; and,

WHEREAS, NC General Statute 130A-309.09A(b) requires each unit of local government, either individually or in cooperation with other units of local government, to develop a 10-year comprehensive solid waste management plan and provide 3-year updates; and,

WHEREAS, the Town of _____ was represented on the Pender County Planning Advisory Committee and has been actively involved in the planning process;

NOW, THEREFORE, BE IT RESOLVED that the Town Council of _____ hereby approves the Pender County comprehensive solid waste management plan.

Adopted this ____ day of June, 2003. ..

John Doe, Mayor

Jane Doe, Recorder

APPENDIX A
Resolutions to Adopt the Plan

PENDER COUNTY

RESOLUTION TO APPROVE THE PENDER COUNTY SOLID WASTE PLAN.

WHEREAS, better planning for solid waste will help protect public health and the environment, provide for an improved solid waste management system, better utilize our natural resources, control the cost of solid waste management; and,

WHEREAS, NC General Statute 130A-309.09A(b) requires each unit of local government, either individually or in cooperation with other units of local government, to develop a 10-year comprehensive solid waste management plan and provide 3-year updates; and,

WHEREAS, Pender County was adequately represented on the Pender County Planning Advisory Committee and has been actively involved in the planning process;

NOW, THEREFORE, BE IT RESOLVED that the County Commissioners of Pender County hereby approve the Pender County comprehensive solid waste management plan.

Adopted by the Board of Commissioners during regular session on this ____ day of July, 2003.

Dwight Strickland, Chairman,
Pender County Board of Commissioners

Attest:
Clerk to the Board

APPENDIX B
Public Notice Hearing

Display ad

NOTICE OF PUBLIC HEARING
SOLID WASTE MANAGEMENT PLAN
PENDER COUNTY

The public shall take notice that a public hearing will be held and comments will be openly received with respect to the Pender County, North Carolina Solid Waste Management Plan - July 1, 2000 - July 1, 2010 as follows:

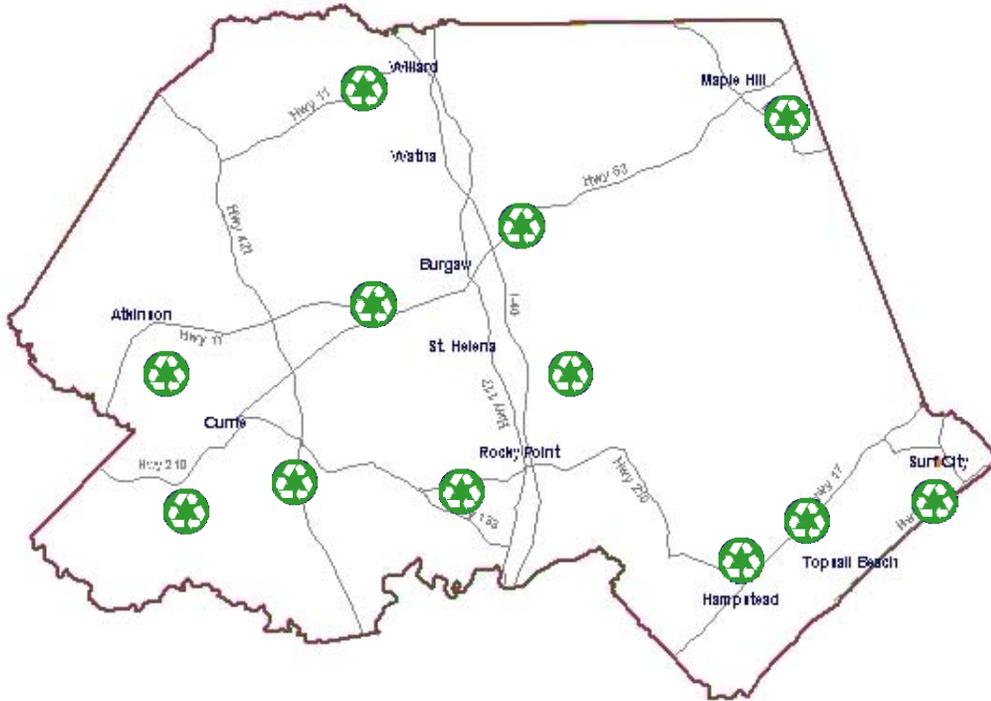
Time: 7:00 p.m.
Day: Monday
Date: May 19, 2003
Place: Public Meeting Room 145
805 S. Walker St., Burgaw, NC

Copies of the Plan are available for review in the County Manager's Office and the Hampstead and Burgaw Libraries. The Pender County Board of Commissioners may, by resolution, adopt the Plan at this meeting, after hearing comments, but in any case are legally required to adopt the Plan prior to June 30, 2003.

Clerk to the Board

APPENDIX C
Map of facilities

Map of Pender County with towns and convenience center locations



 **Indicates convenience center location**

APPENDIX D

Waste Characterization of Towns and County

Fiscal Year 2001-02 Solid Waste Tonnage

COUNTY	TONNAGE
Transfer Station	
Pender County	12,752.48
C&D	2,632.80
Other	
Pender County (tires)	554.22
Pender County (recycling)	1,566.57
Pender County Total	17,506.07
TOWNS	TONNAGE
Atkinson	151.32
<i>Recycling</i>	<i>0.00</i>
Burgaw	848.27
<i>Recycling</i>	<i>94.82</i>
St. Helena	162.90
<i>Recycling</i>	<i>12.67</i>
Surf City	2345.00
<i>Recycling</i>	<i>8.40</i>
Topsail Beach	675.00
<i>Recycling</i>	<i>38.49</i>
Watha	17.00
<i>Recycling</i>	<i>5.80</i>
Towns' Totals	4,359.67
GRAND TOTAL	21,865.74

Sources: FY 2001-02 Waste Industries Material Analysis Report for Pender County Transfer Station;
FY 2001-02 Municipal and County Solid Waste Management Annual Reports

APPENDIX E
Waste Reduction Goal Sheet

WASTE REDUCTION GOAL SHEET

**NC LOCAL GOVERNMENT TEN YEAR
SOLID WASTE MANAGEMENT PLAN**

Local government name Pender County

Previously established FY 2005-2006 waste reduction goal
none %

After considering your government's current and projected
Solid waste activities, resources, population and
Economic growth will the FY 2005-2006
Waste reduction goal change? Yes No

If Yes, what is the revised FY 2005-2006 waste reduction goal?
22 %

Establish a new FY 2012-2013 waste reduction goal
32 %

**NOTE: if the Plan is based on dates other than FY 2005-2006 and FY 2012-2013 please
Change waste reduction goal dates.**

WASTE REDUCTION CALCULATIONS

To provide 10 years of solid waste management planning, as per General Statute 130A-309.09A(b), waste reduction goals are up-dated. Use the following chart to determine the tonnages needed to manage without landfilling, to meet waste reduction goals for FY 2005-2006 and FY 2012-2013.

Calculations	FY 2005-2006	FY 2012-2013
1. Baseline year per capita disposal rate (FY 1991-1992 unless alternate approved by Section)	0.6	0.6
2. Percent waste reduction goal	22%	32%
3. Targeted per capita disposal rate (Subtract line 2 from 1.0 and multiply result by line 1)	0.47	0.41
4. Estimated population for July 2006 and July 2013 (available at http://www.osbm.state.nc.us/osbm/index.html)	48,294	56,629
5. Projected tonnage for disposal at baseline disposal rate (Multiply line 1 by line 4)	28,976.40	33,977.40
6. Targeted annual tonnage for disposal (Multiply line 3 by line 4)	22,601.59	23,104.63
7. Targeted annual tonnage to reduce (Subtract line 6 from line 5)	6,374.81	10,872.77

**APPENDIX F
Planning Element
Reduction**

PLANNING ELEMENTS
NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN
Planning years 2003-2013

Element:

Reduction

Collection Recycling & Reuse Composting & Mulching Incineration (with / without energy recovery)
 Transfer outside geographic area Disposal Education with community & through schools
 Special Waste Illegal Disposal/Litter Purchasing Recycled Products Disaster Response

COMPLETED ACTIONS	INCOMPLETE ACTIONS		NEW/REVISED ACTIONS		
KEY ACTIONS	KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	ESTIMATED TONS DIVERTED IN 10TH YEAR.
Start a curtail your junk Mail program.			County residents can pickup post-cards to reduce junk mail		10 tons diverted

**APPENDIX F
Planning Element
Collection**

**PLANNING ELEMENTS
NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN
Planning years 2003-2013**

Element:

Reduction *Collection* *Recycling & Reuse* *Composting & Mulching* *Incineration (with / without energy recovery)*
Transfer outside geographic area *Disposal* *Education with community & through schools*
Special Waste *Illegal Disposal/Litter* *Purchasing Recycled Products* *Disaster Response*

COMPLETED ACTIONS	INCOMPLETE ACTIONS		NEW/REVISED ACTIONS		
KEY ACTIONS	KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	ESTIMATED TONS DIVERTED IN 10TH YEAR
Analyze curbside pickup versus convenience center drop off		Cost of curbside pickup is significantly greater than the drop off locations			All MSW is diverted by collection. Not all is recycled though.

**APPENDIX F
Planning Element
Recycling & Reuse**

**PLANNING ELEMENTS
NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN
Planning years 2003-2013**

Element:

Reduction Collection Recycling & Reuse Composting & Mulching Incineration (with / without energy recovery)
 Transfer outside geographic area Disposal Education with community & through schools
 Special Waste Illegal Disposal/Litter Purchasing Recycled Products Disaster Response

COMPLETED ACTIONS	INCOMPLETE ACTIONS		NEW/REVISED ACTIONS		
KEY ACTIONS	KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	ESTIMATED TONS DIVERTED IN 10TH YEAR
	Investigate market for magazines/catalog recycling Acquire Cardboard Baler	Funds are not available as of this plan	Research market and implement plan	07/2004	800+

APPENDIX F
Planning Element
Composting & Mulching

PLANNING ELEMENTS
NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN
Planning years 2003-2013

Element:

Reduction *Collection* *Recycling & Reuse* *Composting & Mulching* *Incineration (with / without energy recovery)*
Transfer outside geographic area *Disposal* *Education with community & through schools*
Special Waste *Illegal Disposal/Litter* *Purchasing Recycled Products* *Disaster Response*

COMPLETED ACTIONS	INCOMPLETE ACTIONS		NEW/REVISED ACTIONS		
KEY ACTIONS	KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	ESTIMATED TONS DIVERTED IN 10TH YEAR
KEY ACTIONS The gave away 200 composting bins at no charge to citizens who attended a two hour class.			KEY ACTIONS Give away another 20 bins left-over	DATE DUE 06/2003	ESTIMATED TONS DIVERTED IN 10TH YEAR 500+

APPENDIX F
Planning Element
Incineration (with / without energy recovery)

PLANNING ELEMENTS
NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN
Planning years 2003-2013

Element:

Reduction *Collection* *Recycling & Reuse* *Composting & Mulching* *Incineration (with / without energy recovery)*
Transfer outside geographic area *Disposal* *Education with community & through schools*
Special Waste *Illegal Disposal/Litter* *Purchasing Recycled Products* *Disaster Response*

COMPLETED ACTIONS	INCOMPLETE ACTIONS		NEW/REVISED ACTIONS		
KEY ACTIONS	KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	ESTIMATED TONS DIVERTED IN 10TH YEAR
<p>The county will not seek to build any type of waste recovery facility.</p>		<p>A plant of that magnitude would not be cost effective</p>			
<p>Send waste the New Hanover Wastec facility.</p>		<p>New Hanover County's Wastec plant no longer accepts out of county waste</p>			

APPENDIX F
Planning Element
Transfer outside geographic region

PLANNING ELEMENTS
NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN
Planning years 2003-2013

Element:

Reduction Collection Recycling & Reuse Composting & Mulching Incineration (with / without energy recovery)
Transfer outside geographic area Disposal Education with community & through schools
Special Waste Illegal Disposal/Litter Purchasing Recycled Products Disaster Response

COMPLETED ACTIONS	INCOMPLETE ACTIONS		NEW/REVISED ACTIONS		
	KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	ESTIMATED TONS DIVERTED IN 10TH YEAR N/A
<p>KEY ACTIONS</p> <p>Pender County transfers all MSW to other landfills via a transfer station. The transfer station is expected to operate indefinitely because it is unlikely that the county will build another landfill.</p>					

**APPENDIX F
Planning Element
Disposal**

**PLANNING ELEMENTS
NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN
Planning years 2003-2013**

Reduction *Collection* *Recycling & Reuse* *Composting & Mulching* *Incineration (with / without energy recovery)*
Transfer outside geographic area **Disposal** *Education with community & through schools*
Special Waste *Illegal Disposal/Litter* *Purchasing Recycled Products* *Disaster Response*

COMPLETED ACTIONS	INCOMPLETE ACTIONS		NEW/REVISED ACTIONS		
KEY ACTIONS	KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	ESTIMATED TONS DIVERTED IN 10TH YEAR N/A
<p>KEY ACTIONS</p> <p>Pender County residents dispose of their own MSW at 12 convenience centers across the county. A contractor then hauls off all MSW to the transfer station. The transfer station is expected to operate indefinitely because it is unlikely that the county will build another land-fill.</p>					

APPENDIX F

Planning Element

Education with community & through schools

PLANNING ELEMENTS
NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN
Planning years 2003-2013

Element:

Reduction Collection Recycling & Reuse Composting & Mulching Incineration (with / without energy recovery)
 Transfer outside geographic area Disposal *Education with community & through schools*
 Special Waste Illegal Disposal/Litter Purchasing Recycled Products Disaster Response

COMPLETED ACTIONS	INCOMPLETE ACTIONS		NEW/REVISED ACTIONS		
KEY ACTIONS	KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	ESTIMATED TONS DIVERTED IN 10TH YEAR
<p>KEY ACTIONS</p> <p>Educational pamphlets describing the locations of collection centers, recyclable materials accepted, and how to prepare materials for recycling (e.g. wash and remove lids) distributed by Pender County.</p>			<p>The county and the Cooperative Extension Service will consider several methods to encourage source reduction and recycling, and if feasible, institute programs that facilitate community participation.</p> <p>The county will assist teachers in obtaining educational materials from the NC Division of Environmental Assistance and Pollution Prevention and the NC Office of Environmental Education. In addition, teachers will be given information about the annual environmental educators conference sponsored by the NC Office of Environmental Education.</p>		4000+

**PLANNING ELEMENTS
NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN
Planning years 2003-2013**

Element:

Reduction *Collection* *Recycling & Reuse* *Composting & Mulching* *Incineration (with / without energy recovery)*
Transfer outside geographic area *Disposal* *Education with community & through schools*
Special Waste *Illegal Disposal/Litter* *Purchasing Recycled Products* *Disaster Response*

COMPLETED ACTIONS	INCOMPLETE ACTIONS		NEW/REVISED ACTIONS		
KEY ACTIONS	KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	ESTIMATED TONS DIVERTED IN 10TH YEAR
<p>A HHW Day will be established once a year for residents of the county.</p>	<p>Place larger containers at convenience sites</p>	<p>Determining cost benefit analysis of larger containers.</p>			<p>N/A</p> <p>2500+</p>

**APPENDIX F
Planning Element
Illegal Disposal/Litter**

**PLANNING ELEMENTS
NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN
Planning years 2003-2013**

Element:

Reduction Collection Recycling & Reuse Composting & Mulching Incineration (with / without energy recovery)
 Transfer outside geographic area Disposal Education with community & through schools
 Special Waste Illegal Disposal/Litter Purchasing Recycled Products Disaster Response

COMPLETED ACTIONS	INCOMPLETE ACTIONS		NEW/REVISED ACTIONS		
<p>KEY ACTIONS</p> <p>Illegal disposal of waste is addressed in the Perder County Solid Waste Ordinance, and covers requirements and penalties pertaining to illegal disposal. While illegal disposal undoubtedly occurs, it does not appear to be a serious problem. The County's Health, Sheriff, and Planning Departments investigate sites when reported by concerned citizens.</p>	<p>KEY ACTIONS</p>	<p>WHY INCOMPLETE?</p>	<p>KEY ACTIONS</p> <p>Post signs in Spanish due to large influx of migrant workers that reside in the county.</p>	<p>DATE DUE</p> <p>5/2003</p>	<p>ESTIMATED TONS DIVERTED IN 10TH YEAR</p>

APPENDIX F
Planning Elements
Purchasing Recycled Products

PLANNING ELEMENTS
NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN
Planning years 2003-2013

Element:

Reduction Collection Recycling & Reuse Composting & Mulching Incineration (with / without energy recovery)
 Transfer outside geographic area Disposal Education with community & through schools
 Special Waste Illegal Disposal/Litter Purchasing Recycled Products Disaster Response

COMPLETED ACTIONS	INCOMPLETE ACTIONS		NEW/REVISED ACTIONS		
<p>KEY ACTIONS</p> <p>No recycled product-purchasing program is in place at this time; however, most paper products purchased have recycled content</p>	<p>KEY ACTIONS</p> <p>Although there is not a definite push to buy recycled materials or items within the county with post consumer products, most if not all office paper has recycled content.</p>	<p>WHY INCOMPLETE?</p> <p>Attempt to start to recycle paper at all government buildings including schools</p>	<p>KEY ACTIONS</p>	<p>DATE DUE</p>	<p>ESTIMATED TONS DIVERTED IN 10TH YEAR</p> <p>200+</p>

**APPENDIX F
Planning Element
Disaster Response**

**PLANNING ELEMENTS
NC LOCAL GOVERNMENT 10 YEAR SOLID WASTE MANAGEMENT PLAN
Planning years 2003-2013**

Element:

Reduction Collection Recycling & Reuse Composting & Mulching Incineration (with / without energy recovery)
 Transfer outside geographic area Disposal Education with community & through schools
 Special Waste Illegal Disposal/Litter Purchasing Recycled Products Disaster Response

COMPLETED ACTIONS	INCOMPLETE ACTIONS		NEW/REVISED ACTIONS		
KEY ACTIONS	KEY ACTIONS	WHY INCOMPLETE?	KEY ACTIONS	DATE DUE	ESTIMATED TONS DIVERTED IN 10TH YEAR Dependent on type of storm
<p>KEY ACTIONS</p> <p>This site was centrally located to manage excessive amounts of debris. The site selected met all federal, state, and local regulations concerning storage, processing and potential controlled burning. Specific plans for entrance and exit paths at the site, controlled access, and other issues were coordinated with county emergency management. This plan worked well, and will continue to be used in the event of future storms.</p>					

APPENDIX G

County Population and Solid Waste Growth

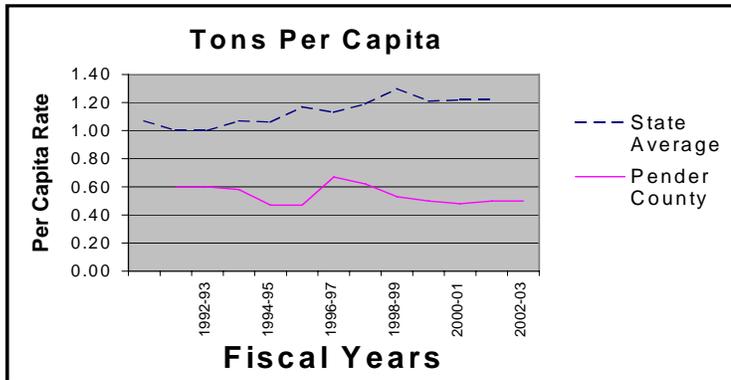
Comparison of State and Pender County Per Capita Rate of MSW

**Actual and Projected Solid Waste Disposal Rates at current Per Capita Rates
Compared to Population Growth**

Fiscal Year	Solid Waste (TONS)	Population	Tons Per Capita
1990-91	18,133.02	28,855	0.63
1991-92	17,499.67	29,022	0.60
1992-93	18,074.02	30,218	0.60
1993-94	17,845.16	30,850	0.58
1994-95	15,346.12	32,568	0.47
1995-96	16,192.64	34,671	0.47
1996-97	24,395.00	36,491	0.67
1997-98	23,464.73	37,960	0.62
1998-99	20,297.25	38,148	0.53
1999-00	20,609.27	41,082	0.50
2000-01	20,124.00	42,007	0.48
2001-02	21,865.74	43,300	0.50
2002-03	22,274.00	44,548	0.50
2003-04	22,898.50	45,797	0.50
2004-05	23,523.00	47,046	0.50
2005-06	24,147.00	48,294	0.50
2006-07	24,771.50	49,543	0.50
2007-08	25,395.50	50,791	0.50
2008-09	26,019.50	52,039	0.50
2009-10	26,620.00	53,240	0.50
2010-11	27,162.00	54,324	0.50
2011-12	27,726.50	55,453	0.50
2012-13	28,314.50	56,629	0.50

Source: Office of State Planning, State Demographics <http://www.ospl.state.nc.us/demog/munpop98.html>
 Line items in **bold** indicate baseline year; line items in *italics* indicate estimates
 (Note: Pender County Landfill closed on 4-8-94)
 * First full year with recycling / convenience centers

REDUCTION SINCE BASELINE YEAR = 16% (0.60 minus 0.50 divided by 0.60)



APPENDIX G
County population changes and projections

Changes in demographics for Pender County 1990-2013

Year	Population	Increase from prior year	% Increase from prior year
1990	28,855	-----	---
1991	29,022	167	0.03
1992	30,218	1,196	3.96
1993	30,850	632	2.05
1994	32,568	1,718	5.28
1995	34,671	2,103	6.07
1996	36,491	1,820	4.99
1997	37,960	1,469	3.87
1998	38,148	188	0.49
1999	40,538	2,390	5.90
2000	41,082	544	1.32
2001*	42,007	925	2.20
2002*	43,300	1,293	2.99
2003*	44,548	1,248	2.80
2004*	45,797	1,249	2.73
2005*	47,046	1,249	2.65
2006*	48,294	1,248	2.58
2007*	49,543	1,249	2.52
2008*	50,791	1,248	2.46
2009*	52,039	1,248	2.40
2010*	53,240	1,201	2.26
2011*	54,324	1,084	2.00
2012*	55,453	1,129	2.04
2013*	56,629	1,176	2.08
Average Population Increase per year		1,157	
* Indicates all figures for that year are estimates			

APPENDIX G

Pender County Solid Waste Planning Advisory Committee

1. Mrs. Karen Barnhill, Assistant to the County Manager
2. Mr. George H. Stalker, Mayor, Town of Atkinson
3. Mr. Steve Candler, Burgaw Town Manager
4. Mr. Mike Moore, Surf City Town Manager
5. Mr. Peter Mack, Topsail Beach Town Manager
6. Mr. Marion Knowles, Jr., Mayor, Town of Watha
7. Mr. Robert Barnhill, Mayor, Village of St. Helena
8. Mr. Greg Brinkley, Waste Industries
9. Pender Watch & Conservancy Representative

