10 YEAR SOLID WASTE MANAGEMENT PLAN

FOR

FORSYTH COUNTY

AND

THE MUNICIPALITIES

OF

BETHANIA, CLEMMONS, KERNERSVILLE, LEWISVILLE, RURAL HALL, TOBACCOVILLE, WALKERTOWN AND WINSTON-SALEM

For the Planning Period of
July 1, 2003 - June 30, 2013

Prepared by the
Winston-Salem/Forsyth County Utility Commission

Winston-Salem • Forsyth County
City/County Utilities
Water • Sewer • Solid Waste Disposal

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Statement of Conformance

This 10 Year Solid Waste Management Plan for Forsyth County has been prepared and compiled in conformance with NC General Statute 130A-309.09A(b). It exceeds statutory requirements in its completeness and function as a local solid waste management planning tool. Every attempt has been made to incorporate the information and detail that the Division of Waste Management requested in its Ten Year Solid Waste Management Plan Guide document. However, there may be rare instances where the information is found in places other than where requested or omitted due to the inability of staff to gather it.

Acknowledgements

Although this solid waste management plan bears the name of the Winston-Salem/Forsyth County Utility Commission, it is a result of the cooperation and collaboration between many political bodies, town administrators and government employees. Each town, village or city provided invaluable help in compiling and insuring the accuracy of the information contained herein. The Commission would like to thank:

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EXECUTIVE SUMMARY

Forsyth County and all incorporated municipalities participated in the preparation of this 10 Year Solid Waste Management Plan. The Winston-Salem/Forsyth County Utility Commission, or City/County Utility Commission (CCUC) was the lead agency in preparing the Plan and conducting the public meeting at which public input was received.

Since publication of the last Solid Waste Management Plan, the CCUC has conducted a waste characterization study at Hanes Mill Road and Old Salisbury Road Landfills. This study showed that old corrugated containers (OCC) and food waste make up the largest reduction targets at Hanes Mill Road Landfill.

The generation of solid waste in Forsyth County decreased from 534,346 tons in FY 2000-01 to 511,164 tons in FY 2001-02. (See Table ES-1) This net decrease of 23,182 tons represents a 4.3% reduction in waste generation from the previous year. The population of Forsyth County grew from 306,067 in FY 2000-01 to 310,187 in FY 2001-02. The waste generation rate in FY 2001-02 decreased to 1.65 tons per capita, a 5.7% drop from the 1.75 tons per capita in FY 2000-01.

Total solid waste disposal from Forsyth County in FY 2001-02 fell by 16,827 tons from the previous year. Hanes Mill Road Landfill receipts decreased by 12.2%, from 296,753 tons in 2000-01 to 260,617 tons in FY 2001-02. Piedmont Landfill (WMI) receipts fell from 67,019 tons in FY 2000-01 to 65,050 tons in FY 2001-02. These decreases in solid waste disposal were partially offset by increases at both Uwharrie Environmental Landfill (Republic) and Old Salisbury Road C & D Landfill. Uwharrie saw an increase in solid waste disposal from Forsyth County from 7,341 tons in FY 2000-01 to 16,911 tons in FY 2001-02. Old Salisbury Road C & D Landfill receipts grew from 93,100 tons in 2000-01 to 104,808 tons in 2001-02.

The disposal rate for Forsyth County decreased from 1.52 tons per capita in FY 2000-01 to 1.44 tons per capita in 2001-02. This decrease of 5.3% in the waste disposal rate moves Forsyth County in the right direction to achieve its waste reduction goal of 1.41 tons per capita by FY 2005-06. Forsyth County has adopted the following new waste reduction goals for the planning period 2003-2013.

- ***By FY 2005-06, achieve a disposal rate of 1.41 tons per capita, which is 5% above the 1988-89 baseline year rate.***

- ***By FY 2012-13, achieve a disposal rate of 1.14 tons per capita, which is 15% below the 1988-89 baseline year rate.***

To further move the county toward its waste reduction goals, the CCUC and the Town of Kernersville added staff positions dedicated to solid waste planning and reduction in 2001 and 2002, respectively. The Town of Kernersville conducted the county's first e-recycling event in 2002. The CCUC funded and implemented a system-wide school recycling program in Forsyth County in FY 2002-03.

The total amount of solid waste recovered or recycled in FY 2001-02 was 63,595 tons, a 6,363 ton decrease from the 69,958 tons in FY 2000-01. Both curbside and drop-site recycling amounts fell from FY 2000-01. Drop site recycling decreased by 21.6% from 4,257 tons in FY 2000-01 to 3,338 tons in FY 2001-02. Curbside recycling declined from 12,394 tons in FY 2000-1 to 12,165 tons in FY 2001-02, or 1.9%. There were no decreases in the service levels for drop-off and curbside recycling throughout the county except that Walkertown discontinued their curbside recycling program in July 2002.

Total recycling dropped from 16,688 tons in FY 2000-01 to 15,528 tons in FY 2001-02, or 7%. Likewise, composting decreased by 4,674 tons, or 10.4%, from the previous fiscal year. White goods recovery fell from 2,832 tons in FY 2000-01 to 2,147 tons in FY 2001-02, or by 24.2%. Tire recovery posted a 2.9% growth, from 5,378 tons in FY 2000-01 to 5,534 tons in FY 2001-01. Receipts of household hazardous waste at the Enviro-Station facility rose by 4.6%, from 175 tons in FY 2000-01 to 183 tons in FY 2001-02.

The overall reduction in solid waste disposal was driven mostly by lower generation. Although the total amount of solid waste disposed in FY 2001-02 fell substantially, the amount disposed compared to other management methods remained essentially unchanged from the previous year. In FY 2000-01, 86.9% of solid waste was disposed of in landfills, while in FY 2001-02, 87.5% was disposed of in landfills. Of all disposal facilities receiving Forsyth County waste, Hanes Mill Road Landfill saw the largest decrease in the amount of waste disposed, falling from 55.9% of the total disposed in FY 2000-01 to 51% in FY 2001-02. The fraction of solid waste that was recovered/recycled remained relatively unchanged. In FY 2000-01, 13.1% of solid waste was recovered/recycled, compared to 12.4% in FY 2001-02.

Although the exact cause of this decrease in overall waste generation in Forsyth County from FY 2000-01 to 2001-02 cannot be determined, an economic indicator may provide some clues. Waste generation and disposal is closely tied to the health of a region's economy, particularly retail sales. From FY 1995-96 to FY 2000-01 Forsyth County saw it's gross retail sales grow from between 0.3% to 7% per year. However, FY 2001-2002 saw a decrease in gross retail sales from the previous year of 0.1%. Although a 0.1% drop in retail sales might not seem significant in a broad sense, it indicates that consumers were buying less and most likely holding onto existing goods longer. This could, in part, explain the decrease in waste generation in FY 2001-02. Moreover, there were no significant source reduction programs introduced during this time that would help account for such a decrease in waste generation.

Waste Generation, Disposal & Recovery in Forsyth County

	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02
Landfilled	**433,203**	**440,104**	**445,674**	**422,803**	**464,213**	**447,386**
Hanes Mill Road	282,682	273,320	277,398	272,880	296,753	260,617
Piedmont Sanitary	100,301	82,266	76,945	71,747	67,019	65,050
BFI Speedway	13,636	-	-	-	-	-
Uwharrie	2,309	9	1,411	804	7,341	16,911
Old Salisbury Road C & D	34,275	84,509	89,920	77,372	93,100	104,808
Recycled	**15,677**	**21,321**	**21,760**	**23,138**	**24,898**	**23,209**
Curbside/Drop site	9,099	13,448	13,234	15,425	16,688	15,528
White Goods	732	744	1,270	1,947	2,832	2,147
Tires	5,846	7,129	7,256	5,766	5,378	5,534
Composted	**45,882**	**42,268**	**49,855**	**52,201**	**45,060**	**40,386**
Other (HHW)	**82**	**88**	**153**	**133**	**175**	**183**
Total (Generation)	**494,844**	**503,781**	**517,442**	**498,275**	**534,346**	**511,164**
Population	290,901	295,803	299,649	302,915	306,067	310,187
Per Capita Landfilled	**1.49**	**1.49**	**1.49**	**1.40**	**1.52**	**1.44**
Per Capita Recycled	**0.05**	**0.07**	**0.07**	**0.08**	**0.08**	**0.07**
Per Capita Composted	**0.16**	**0.14**	**0.17**	**0.17**	**0.15**	**0.13**
Per Capita Generated	**1.70**	**1.70**	**1.73**	**1.64**	**1.75**	**1.65**

Table ES-1

Costs for individual components of solid waste programs vary greatly within the county influenced primarily by the level and frequency of service. Residents of Bethania (curbside) and Winston-Salem (backyard) enjoy the lowest cost for solid waste collection at $6.50/HH/Mo. Bethania and Tobaccoville residents have the lowest per household cost for curbside recycling at $1.30/Mo.

Winston-Salem's solid waste budget for 2001-02 was almost $12 million while Bethania's was less than $18,000 for the same year. The CCUC, Forsyth County as well as each municipality continues to fund solid waste programs through a variety of sources, including ad valorem taxes, user fees, tipping fees and commodity revenues. Total countywide expenditures for solid waste services in FY 2001-02 were $14,985,000.

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I. THE PLANNING PROCESS

A. BACKGROUND

The Solid Waste Section of the City/County Utility Commission (CCUC), a joint agency of the City of Winston-Salem and Forsyth County, prepared this Solid Waste Management Plan. Plan participants include: Forsyth County, Bethania, Clemmons, Kernersville, Lewisville, Rural Hall, Tobaccoville, Walkertown and Winston-Salem. The original Plan was developed in 1997, in accordance with N.C. General Statute 130A-309.09A(b), and revised in 2000. This is the second update to the plan and covers the planning period from July 1, 2003 – June 30, 2013.

The following organizations were consulted in developing this Plan:

- The NC Division of Waste Management,
- The Forsyth County Environmental Health Department,
- The Winston-Salem Sanitation Department,
- The seven other incorporated municipalities that are included in this plan, and,
- To a limited extent, owners of private MSW hauling companies and disposal facilities.

Input from the public was also considered in developing the Plan. The CCUC held a public meeting during its regularly scheduled meeting on May 12 to accept input on the Plan. The meeting was advertised in advance in the Winston-Salem Journal, The Chronicle, through the City of Winston-Salem's internet site and on cable television Channel TV 13. (See Appendix A for notice concerning the Public Meeting.) Comments were received during the meeting and accepted by CCUC staff in writing following the meeting. Prior to this meeting, drafts of the Plan were placed in the CCUC Administrative Office, the Forsyth County Main Library, and all town offices of the eight municipalities for public review and comment.

The revised final Plan was submitted for approval and adoption by the elected bodies of the seven smaller incorporated municipalities, followed by the Winston-Salem/Forsyth County Utility Commission, acting for Winston-Salem and Forsyth County (based on their joint agreement). (See Appendix B for copies of the Resolutions adopting the plan.)

B. OBJECTIVES

The purpose of this planning document is to guide the Plan participants in meeting the following solid waste management objectives:

- To provide for the long-term management of the County's solid waste in a cost-efficient manner, meeting all applicable regulations;
- To protect the public health and the environment;
- To provide waste collection services where practical;
- To provide education and support for waste reduction activities, including composting and recycling; and
- To meet local solid waste reduction goals.

C. VISION

The long-term vision for this area's solid waste management program is to be a comprehensive program providing for environmentally sound collection and disposal of waste with an emphasis on waste reduction and recycling, managed in a professionally and financially responsible manner.

The publicly operated collection programs will provide the best service possible within the financial constraints of publicly funded budgets. Publicly operated disposal facilities will utilize the best technology possible to protect the environment and maximize the life of any capital investments while providing for disposal services to meet the needs of the service area. Governments that contract for collection and disposal services will strive to insure that those services are provided in a manner consistent with their public counterparts.

Reduction and recycling efforts will be emphasized in order to increase the ability to provide long-term disposal capacity for the area. These efforts will be expanded to address the non-residential portion of the waste stream through education and support to area businesses.

These goals will be pursued in a professional and financially responsible manner to ensure that they are met using a well-planned and organized approach while maintaining competitive prices for the services provided.

II. PLANNING AREA AND SOLID WASTE DISPOSITION

The planning area covers all of Forsyth County, which includes the unincorporated areas, as well as the towns of Bethania, Clemmons, Kernersville, Lewisville, Rural Hall, Tobaccoville, Walkertown and Winston-Salem. Appendix C-1 contains a map showing the planning area, the geographic distribution of the municipalities within the county and the major MSW disposal facilities in the county. Appendix C-2 contains a complete listing of all permitted MSW disposal facilities in Forsyth County.

Davie and Stokes Counties dispose of waste at the Hanes Mill Road Landfill. Hanes Mill Road Landfill is permitted to accept waste from two additional counties, Yadkin and Surry, but they are not currently bringing their waste there. None of these four counties' wastes is addressed by this plan. Also excluded from the plan is the substantial quantity of non-Forsyth County waste disposed at Waste Management's Piedmont Sanitary Landfill in Kernersville or transferred into the county via Republic Services' Overdale Road Transfer Station.

Forsyth County has a total estimated 2003 population of 319,932. The County grew by 15.1% from 1990 to 2000 as indicated by the year 2000 census. If it continues to grow at the same rate it will reach a population of 355,075 by the year 2010. Most of the county is developed, but there are still large areas of farmland. The distribution of the population within the County and its municipalities plays an important role in determining where most of the solid waste is generated as well as how solid waste and recycling services can be efficiently provided. Table 2-1 shows population estimates for each Forsyth County jurisdiction. Based on population, Winston-Salem is by far the largest jurisdiction, followed by unincorporated Forsyth County.

Estimated Forsyth Populations by Jurisdiction - 2003

Jurisdiction	Population
Bethania	354
Clemmons	19,207
Kernersville	20,055
Lewisville	9,806
Rural Hall	2,862
Tobaccoville	2,258
Walkertown	6,823
Winston-Salem	202,217
Unincorporated Area	55,455
Forsyth County	319,932

Table 2-1

Table 2-2 shows the amount of solid waste generated in Forsyth County that is landfilled or recycled, composted/mulched, or otherwise recovered through government programs. In FY 2001-02, approximately 447,386 tons of solid waste generated in Forsyth County were landfilled. This is equivalent to 1.44 tons per capita per year, based upon the July 1, 2002, population estimate. The remaining 12.5% of materials accounted for in Table 2-2 were diverted from disposal via the

means indicated above. In addition, 6,831 gallons of oil were recovered for recycling through municipal and Forsyth County collection programs during that time period. Unknown quantities of used oil were recycled by commercial service stations and auto parts stores throughout the County.

Solid Waste Management in Forsyth County – FY 01-02

Management Practice	Tons	Percent
Landfilled	**447,386**	**87.5%**
OSR C&D Landfill	104,808	
Piedmont Sanitary Landfill	65,050	
Hanes Mill Road Landfill	260,617	
Uwharrie Env. Regional Landfill	16,911	
Recycled:	**23,209**	**4.5%**
Drop-Off, Curbside, Special Events, Office & Other Recycling Programs	15,528	
White Goods	2,147	
Tires	5,534	
Composted/ Mulched:	**40,386**	**7.9%**
Overdale Yard Waste Facility	21,506	
Other Leaf, Yard, & Wood Waste Programs	18,880	
Other:	**156** (excl. oil)	**<1%**
Used Oil (gallons)	6,831gal.	
Household Hazardous Waste	156	
County Total	**511,164**	**100%**

Table 2-2

The majority of Forsyth County's municipalities report that most of their solid waste comes from residences, as reported in FY 01-02 Annual Solid Waste Reports (Winston-Salem and Kernersville, however, report that 70% of their waste comes from the commercial sector). Forsyth County estimates, shown in Table 2-3, reflect a breakdown similar to the two larger municipalities regarding solid waste disposed – indicating that 70% of all solid waste disposed comes from non-household sources. A substantial amount of the county's solid waste is generated by businesses and institutions, collected by private haulers, and disposed of in either Piedmont Sanitary Landfill operated by Waste Management (WM) or Uwharrie Environmental Regional Landfill operated by Republic Services.

Estimated Waste Disposal by Source Sector – FY 01-02

Waste Source	Percent of Total
Residential	30%
Commercial/ Institutional	27%
Industrial	22%
Construction & Demolition	21%
Total	100%

Table 2-3

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III. WASTE STREAM EVALUATION

A. TONNAGES BY SERVICE AREA

The following table shows the amounts of solid waste disposed by each area. As indicated, nearly 70% of the solid waste generated comes from City of Winston-Salem sources, and almost one-quarter of the waste comes from non-municipal (i.e. unincorporated) sources in Forsyth County. Solid waste generated by the remaining seven municipalities comprises only 6.5% of Forsyth County's solid waste stream currently being landfilled.

FY 01-02 Tons Landfilled by Service Area

Area	Tons	Percent
Winston-Salem	308,932 *(estimated)*	69.1%
Kernersville	17,040	3.8%
Clemmons	4,785	0.7%
Lewisville	2,174	0.5%
Walkertown	2,138	0.5%
Rural Hall	878	0.2%
Tobaccoville	3,716	0.8%
Bethania	137	0.0%
Other Forsyth Co. Waste	107,586	24.0%
Total County	**447,386**	**100%**

Table 3-1

B. WASTE STREAM BY MATERIAL TYPE

In April 2000, the CCUC contracted with CalRecovery Incorporated to conduct a waste characterization study at the Hanes Mill Road Landfill and Old Salisbury Road Construction & Demolition Landfill. The goal of the study was to identify major waste types and generators and to determine the quantity and composition of the waste from each source. Data from this study is presented in Appendix D.

Since a significant portion of Forsyth County's waste is delivered to private in-county and out-of-county landfills for disposal, the characterization of those waste streams was unable to be determined. It is assumed that those waste streams are somewhat more industrial in nature so no extrapolation based on the characterization study conducted at Hanes Mill Road Landfill can be performed. Therefore, the data presented in Appendix D is exclusive of any waste taken to privately operated in-county and out-of-county landfills. This caveat applies mostly to the commercial, institutional and industrial waste stream since the City of Winston-Salem has exclusive rights to collect and transport that City's residential waste.

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IV. WASTE REDUCTION GOALS

North Carolina state law requires that local governments make a good faith effort toward achieving the statewide goal of reducing per-capita solid waste disposed by 40%, as measured against the baseline year of FY 1991-92, or an alternate year if approved by the State. In the case of Forsyth County, approval of an alternative baseline year of 1988-89 was granted. However, the State also recognizes that circumstances arise over the course of time affecting the per-capita waste generation rate that may bear little relationship to the extent to which businesses, institutions and residents make progress in implementing waste reduction programs. Increased waste due to hurricanes and other natural phenomena, growth in construction starts, establishment of new manufacturing facilities, and an overall increase in the health of the economy are just a few such examples.

Forsyth County has experienced such forces at play within its boundaries. In spite of expanding recycling and other waste diversion programs, the County as a whole has experienced an increase in the per-capita waste disposal by 7.5% since the County's baseline year of July 1, 1988-June 30, 1989 (see Table 4-1). However, 2001-02 saw a 5.3% decrease in per capita waste disposal from the previous year. The low per capita disposal rate for 1999-00 is considered a reporting anomaly. The 1.44 tons/capita in 2001-02 is considered accurate and most likely a result of poor economic conditions during the fiscal year after the terrorist events of September 11, 2001. Overall waste generation for FY 2001-02 was down commensurately indicating that people were consuming and disposing less.

Per Capita Solid Waste Disposed from Forsyth County Sources

Fiscal Year	Tons/Capita Disposed	Percent Change*
1988-89 (Baseline Year)	1.34	
1996-97	1.49	+ 11.2%
1997-98	1.49	+ 11.2%
1998-99	1.49	+ 11.2%
1999-00	1.40	+ 4.5%
2000-01	1.52	+ 13.4%
2001-02	1.44	+ 7.5%

* Over baseline year

Table 4-1

North Carolina state law also requires that each region covered by a solid waste management plan specify per-capita municipal solid waste reduction goals to be achieved by June, 30 2001 and by June 30, 2006, and that each plan be designed to achieve these goals. In the 1997 Forsyth County Solid Waste Plan, the following waste reduction goals were established:

- By June 30, 2001, the per capita amount of waste diverted by reduction, recycling or other means will total 20% of the total waste stream compared to the per capita level of the base year of FY 88/89.

- By June 30, 2006, the per capita amount of waste diverted will total 40% of the total waste stream compared to the per capita level of the base year.

As indicated by the figures presented in Table 4-1, Forsyth County did not meet its waste reduction goal for 2001. In the 2000 update to the plan, Forsyth County established more attainable and realistic goals pending completion of a solid waste characterization study and recommendations from the Solid Waste Task Force. As revised goals are required under General Statute 130A-309.09A, Forsyth County established the following waste reduction goals in the 2000 plan update:

- By FY 2005-06, reduce the per-capita solid waste disposal rate by 10%, thereby bringing the waste disposal rate to 5% above baseline levels.

- By FY 2009-10, reduce the per-capita solid waste disposal rate by 25%, thereby achieving a per-capita waste reduction rate of 10%.

After reviewing these goals, plan participants agreed that they are both realistic and attainable. Forsyth County is now adopting the following waste reduction goals.

- ***By FY 2005-06, achieve a disposal rate of 1.41 tons per capita, which is 5% above the 1988-89 baseline year rate.***

- ***By FY 2012-13, achieve a disposal rate of 1.14 tons per capita, which is 15% below the 1988-89 baseline year rate.***

The FY 2009-10 goal of 1.21 tons/capita disposed will remain as an unofficial, intermediate goal for the county on its way to the 2012-13 goal of 1.14 tons/capita disposed. Appendix E-1 is the completed Waste Reduction Goal Sheet for the period covered by this Plan. Appendix E-2 shows more detailed and extended planning data for Forsyth County. It also shows specific waste reduction target amounts based on those generation patterns that are consistent with the goals above.

Section V is a discussion of current programs and intended actions related to the attainment of these future waste reduction goals. It addresses each of the planning elements required in the statute. In addition, the planning elements sections are preceded by a discussion of staff resources dedicated to solid waste planning and reduction.

V. SOLID WASTE MANAGEMENT METHODS

North Carolina's revised Solid Waste Management Act requires local governments to assess the adequacy of local solid waste collection services and disposal capacity to meet current needs and protect human health and the environment, and to take actions as necessary to address identified service or capacity deficiencies. In addition, state law specifies that local governments assess current programs and identify intended actions with respect to:

- source reduction
- collection
- recycling and reuse
- composting and mulching
- incineration with and without energy recovery
- transfer of waste outside the planning region
- disposal
- education with the community and through the schools
- management of special wastes
- prevention of illegal disposal and litter management
- purchase of recycled materials and products
- disaster response

Appendix F summarizes some of the key characteristics of the solid waste collection and recovery programs for each jurisdiction in Forsyth County. Each of the various components of Forsyth County's solid waste management system is discussed in greater detail below, followed by a discussion of intended actions pertaining to each waste management component. It is important to note that ***all intended actions are subject to budgetary approval.***

Staff Resources

The City/County Utility Commission, the City of Winston-Salem and the Town of Kernersville have staff positions dedicated to the management and promotion of recycling and waste reduction programs.

In 2001 the CCUC hired an Assistant Solid Waste Administrator for Waste Reduction. This position is primarily responsible for evaluating the recommendations of the Solid Waste Task Force, to determine their practical and economic application within the context of our Solid Waste Management Plan and to insure the implementation of those recommendations that are approved by the Commission.

Winston-Salem has a Recycling Programs Administrator housed in the Sanitation Division whose primary responsibility is to administer the curbside recycling contract with WMI and promote participation in the residential and small business recycling programs.

The Town of Kernersville hired a Recycling and Waste Reduction Programs Coordinator in 2002 whose primary responsibilities are to manage and promote participation in the residential

recycling program and provide technical assistance to the business community in the form of waste assessments and setting up or expanding programs.

Volunteers

The Town of Lewisville has a very active, standing Recycling Committee that is responsible for assisting the town with recycling planning, policy and operations.

Keep Winston-Salem Beautiful has a very strong environmental program that assists with annual recycling and solid waste collection events within the City of Winston-Salem.

A. SOURCE REDUCTION

Current Programs

Governments within Forsyth County agree that source reduction is a priority method in managing our waste, although, in many applications, it is a concept that is difficult to describe and implement. City of Winston-Salem personnel provide information and assistance on junk mail reduction, "enviroshopping," use of non-toxics in homes and businesses and provide support to local groups on these activities. The City distributes junk mail terminator kits that provide individuals with postcards pre-addressed to major firms that sell names and addresses to advertising firms. The kits allow residents to request their names be removed from the mailing list. The City of Winston-Salem, the Towns of Kernersville, Rural Hall and Lewisville, and CCUC staff make presentations to community groups and schools to address source reduction. Many communities support waste reduction through periodic newsletters to citizens and/or their government website. Keep Winston-Salem Beautiful, an agency partially supported by the City of Winston-Salem, also provides speakers on waste reduction.

In January 2002, the CCUC began printing its agenda double-sided. Likewise, in September 2002, the Winston-Salem City Council began printing its agendas double-sided. Prior to that time, both agendas were printed on only one side of the paper. This source reduction action has resulted in a significant savings of paper and money for the CCUC and the City of Winston-Salem.

Ikon Printing Services provides the City of Winston-Salem with copier services. CCUC staff convinced Ikon to place decals that encourage the use of double-sided copying on all City copiers. There is also an increased emphasis on printing double-sided from computers. The Town of Rural Hall has a double-sided copying policy in place for town administrative offices.

Intended Actions

Although the real application of source reduction activities is limited, CCUC, municipal and county staff continue to investigate them as means to lower the overall disposal rate and achieve our waste reduction goals. Educational activities targeted toward businesses and industries will receive the most attention in the coming years. The Town of Kernersville intends to continue developing commercial source reduction programs. Several options are being considered

including commercial collection of OCC and commercial recycling workshops. Source reduction programs will receive more attention as waste generation continues to rise mostly in response to a strong economy.

B. COLLECTION OF SOLID WASTE

Current Programs

The collection of solid waste in Forsyth County is performed by a number of different organizations. The two largest municipalities, Winston-Salem and Kernersville run their own collection operations while the remaining municipalities contract with private haulers (primarily with Waste Management). Twelve private haulers, which are listed in Table 5-1, operate in Forsyth County as independent contractors, transporting waste from private individuals or companies to disposal facilities. Some commercial and industrial waste generators haul their own waste to disposal facilities.

Private Waste Collection Companies Operating in Forsyth County

Company Name	Waste Type Managed
ABC Garbage Service	Residential
Allpoints Waste Service	Commercial/Industrial
Ernest Garbage Service	Residential
Kiser Garbage & Container	Residential
McKinney Disposal	Commercial/Industrial
Middlefork Garbage Service	Residential
North State Waste	Industrial/C & D
Piedmont Disposal	Commercial/Industrial
Republic Waste Services	Commercial/Industrial
Rural Garbage Service	Residential
Waste Industries	Commercial/Industrial
Waste Management	Commercial/Industrial/Residential

Table 5-1

As shown in Appendix F, residential waste is collected on a once-a-week basis in all of the municipalities. The City of Winston-Salem and the Town of Kernersville provide both backyard and curbside residential waste collection. The residents of municipalities that contract with Waste Management for residential waste collection have curbside, rollout service.

The City of Winston-Salem and the Town of Tobaccoville provides annual bulky item collection; Rural Hall and Kernersville provide bulky item collection on a weekly basis; Clemmons sponsors one bulky item collection day per year; and Lewisville collects bulky items at their Recycling Days held three times annually. Lewisville also provides two vouchers each year for its residents to take bulky items to the landfill.
Forsyth County government grants franchises to waste companies to operate in the

unincorporated areas of the county. There are five franchised waste companies providing service in the unincorporated areas of the county at this time. Waste Management continues to be the largest service provider based on households served with Rural Garbage Service (formerly Triad Garbage), Ernest Garbage Service, ABC Garbage Service and Middlefork Garbage Service following in descending size order. The current franchise period ends on October 31, 2004.

Commercial waste collection in Forsyth County is provided in one of several ways:

- By municipal crews serving business customers in Winston-Salem and Kernersville;
- By private contractors operating within the City of Winston-Salem (all of whom are required, by signed agreement, to dispose of their waste in the Hanes Mill Road Landfill);
- By a private hauler operating under contract with one or more of the smaller Forsyth municipalities; or
- Directly by independent contractors through an open collection system in areas outside of Winston-Salem.

Most commercial waste generators pay directly for solid waste collection service. In Tobaccoville, the town affords commercial generators the same amount of waste disposal paid for with tax revenues as it does its residential customers. Any amounts of commercial waste over the 90 gallon per week limit must be paid for by the generator and collected by a private hauler.

The City of Winston-Salem and Town of Kernersville provide commercial collection service with front-end loader trucks. Neither of these municipalities provide roll off service, and therefore do not serve the larger waste generators in their respective jurisdictions. The frequency of hauling depends upon what level of service the individual businesses have contracted for. As is the case in most North Carolina communities, generators of solid waste in quantities unsuitable for collection in 8-cubic-yard or smaller containers (includes some commercial and institutional as well as most industrial waste) must make their own arrangements for solid waste collection. These generators either haul their waste directly to the Hanes Mill Road or Piedmont landfill, or contract with a private hauler for collection and disposal service.

Intended Actions

It is generally recognized that solid waste collection costs would be substantially lower if service was provided at the curbside instead of backyard. The Citizens Efficiency Review Committee recommended a transition to this type of collection system in Winston-Salem several years ago. However, City elected officials are satisfied with the level and nature of service currently provided despite its higher cost. Plans are to continue to provide collection and service at the same level.

Preliminary discussions have been held about providing universal solid waste and recycling collection throughout Forsyth County, including all municipalities. By combining their service agreements into one contract and by considering inclusion of recyclables collection in the same contract, municipalities could possibly lower their per household waste collection rates than if each jurisdiction continues to contract for services independently. Such a system should also

serve to reduce illegal dumping, reduce the self haul traffic and associated handling costs at the Hanes Mill Road Landfill, as well as provide for more efficient collection and better economies of scale in the unincorporated areas.

CCUC staff has begun tracking and reviewing load inspection sheets from Hanes Mill Road Landfill in an effort to determine companies and other organizations that are disposing of easily recycled materials such as cardboard and pallets. These organizations will be contacted and referred to recycling companies.

CCUC staff has prepared a report on an OCC disposal ban for Forsyth County. This report is currently being reviewed internally for consideration to present to the Utility Commission. If approved, it will take approximately 18 months to fully implement the OCC disposal ban.

In addition:

- Pricing models have been developed and staff level discussions involving some elected officials have begun on instituting a Pay-as-You-Throw and user fee system in Winston-Salem.
- The Town of Kernersville will expand its dumpster leasing and commercial front loader service on an as needed basis.

C. RECYCLING

Current Programs

Residential recycling

Forsyth County residents living in single-family dwellings in incorporated areas (with the exception of Walkertown) are provided with weekly curbside recycling service. Appendix F gives an overview of the types of recycling in each community. In Winston-Salem and other communities, some multi-family dwellings have taken advantage of recycling collection service under these same contracts. Sixty-three apartment and condominium complexes are now served in Winston-Salem alone through a cart-based program.

These recycling programs collect aluminum and steel cans, glass containers, old newspapers (ONP) and PETE and HDPE plastic bottles. Four programs also collect old magazines (OMG) as a separate grade. The City of Winston-Salem collects OCC and residential mixed paper (RMP) (including OMG, chipboard, telephone books, and junk mail) through its curbside and multi-family programs. In addition, the City has nine (9) drop-off centers for the collection of old corrugated containers (OCC) located at area fire stations.

Residents of unincorporated areas do not have access to curbside recycling services. To provide opportunities for these residents to recycle, Forsyth County established two staffed drop-off centers (located in Kernersville and Pfafftown) in the Fall of 1998. The centers are administered by the City of Winston-Salem Sanitation Division, operated through a contract with Waste Management, and funded by landfill tipping fee revenue. The Utility Commission also provides

for the collection of recyclable materials at the Hanes Mill Road Landfill. The three existing centers accept all materials collected through the City's curbside recycling program. The landfill center also accepts used household appliances (white goods), tires, and used motor oil for recycling.

All recyclables collected through the above programs (with the exception of the special waste items collected at the landfill) are taken to Waste Management's Materials Recovery Facility in Winston-Salem where the items are sorted and marketed. Twenty-five percent (25%) of the revenue from the sale of recyclables collected in Winston-Salem is returned to the City. Revenue sharing arrangements among the other jurisdictions vary.

In addition to the curbside recycling and drop-off center programs, residents can participate in the special collection events listed in the following table.

Special Recycling Collection Events

Event	Jurisdiction	Frequency
R-Day (florescent bulbs, packing peanuts, curbside materials, chipboard, OCC, household and auto batteries, small propane tanks, 6 pack rings & grocery bags).	Lewisville	Three times annually
Christmas OCC & gift boxes	Lewisville	Annual
E-recycling day	Kernersville	Annual

Table 5-2

The amount of solid waste recovered through government-sponsored recycling programs in Forsyth County in FY 2001-02 was 23,209 tons (including white goods and tires), or 4.5% of the entire county waste stream. Appendix G reflects a breakdown of the tonnage of each material type collected by each jurisdiction as reported in the FY 2001-02 Solid Waste Annual Reports. There are many variables affecting these figures. Three of these are: the number and types of materials targeted for recovery in each community, the number of households living in multi-family complexes not currently receiving recycling collection service, and the extent to which each community promotes participation in recycling. While such variables limit the extent to which direct comparisons can be made between Forsyth communities, the substantial difference in per-household recycling rates in unincorporated Forsyth County relative to the incorporated areas is telling: unincorporated residents in Forsyth County do not recycle to the same extent as incorporated residents who receive curbside recycling service.

Maximizing recovery of residential recyclables will entail increasing participation, increasing the types of materials collected in some jurisdictions, and capturing more of the materials now targeted by existing recycling programs. The Town of Lewisville's bimonthly newsletter educates and encourages residents to participate in their recycling program. Anecdotal evidence suggests Lewisville has the highest participation rate in their recycling program among Forsyth

County Municipalities.

Non-residential recycling

Given that the majority of Forsyth County's waste stream comes from commercial, institutional and industrial (CII) sources, recycling non-residential waste is even more important, from a waste diversion standpoint, than recycling residential waste.

In 2002, the City of Winston-Salem extended its curbside recycling program to selected small businesses. There are now 527 small businesses participating in this program.

With respect to government offices, all jurisdictions reported that they had in house recycling programs in FY 2001-02.

In 2002, the CCUC agreed to fund and implement a school recycling program for every school in the WS/FC School District. The CCUC has committed over $250,000 and staff time for a period of three years to the school district for this program. It includes cardboard, paper and beverage container recycling components. Waste Management is under contract with the CCUC to provide collection and recycling services for this program. When fully implemented, this program may divert as much as 2,000 tons/year from disposal.

Intended Actions

Residential recycling

City of Winston-Salem staff intends to evaluate means of increasing the number of multi-family complexes participating in the recycling program.

The City of Winston-Salem will continue to promote and expand its small business recycling program.

The City of Winston-Salem is in the process of opening a third drop-off recycling center for residents of the unincorporated areas of Forsyth County.

The Utility Commission and the County are considering the establishment of additional recycling drop-off sites to serve residents and businesses in unincorporated areas that do not currently have convenient access to recycling.

D. REUSE

Current Programs

Forsyth County is home to several non-profit reuse programs such as Habitat for Humanity, Goodwill Industries and other social service type agencies. Additionally, several private reuse enterprises in the form of consignment and thrift shops operate in the community. Although it is impossible to know the amount of materials diverted through these programs, if they didn't exist

the additional amount of waste destined for disposal would increase significantly.

The CCUC and the City of Kernersville, along with other regional governments, helped to organize a Pallet Recycling and Reuse Workshop in the Piedmont Triad area. The North Carolina State University Cooperative Extension Service conducted this workshop, which drew participants from a 9 county area of the Piedmont Triad region.

Intended Actions

Current programs will continue. It is the intention of the City/County Utility Commission and staff to work with local businesses on reusing packaging and other materials as they work with them on reduction and recycling programs. However, additional staff will be needed in order for such efforts to be effective. The Solid Waste Division and City Sanitation will evaluate staffing needs for increasing efforts to encourage source reduction, reuse, and recycling in the business community.

The CCUC Solid Waste Division is investigating the possibility of establishing a swap shop at the Hanes Mill Road Landfill to enable users to exchange reusable goods with each other.

E. COMPOSTING AND MULCHING

Current Programs

Composting and mulching programs in Forsyth County manage yard waste composed of grass clippings, loose leaves, brush, Christmas trees and pallets. With the exception of pallets, most materials come from residential sources. See Appendix F for a summary of the characteristics of each Forsyth County jurisdiction's yard waste collection program.

The largest publicly owned and operated compost facility in Forsyth County is the Overdale Yard Waste Facility. Wrico, Inc. operates this 8-acre facility under contract with the City/County Utility Commission. It processes yard waste and pallets, which are sold for use as compost, mulch or boiler fuel. The facility is sufficiently large for the current flow of yard waste and has adjoining property that could be used for storage if needed. Additional equipment could be added on this site to expand its capacity in the future if increases in the waste flow required it. The current contract with the operator has buy out provisions that are periodically reviewed to determine if that is a better option for the CCUC to pursue at that time. The City of Winston-Salem Sanitation Division as well as private landscape contractors and other private individuals deliver yard waste to the Overdale Yard Waste Facility.

Wrico also operates a loose leaf compost site on Reynolds Park Road and a loose leaf transfer site on Shorefair Drive. The former is used exclusively for the loose leaves collected by the City of Winston-Salem. The Shorefair site is used exclusively for the temporary storage of loose leaves collected by the City of Winston-Salem Sanitation Division. Leaves are transferred from the Shorefair Drive facility to the Reynolds Park Road facility for composting.

The Towns of Kernersville and Rural Hall and the Village of Clemmons also operate smaller

scale compost facilities.

The City of Winston-Salem, the Towns of Kernersville and Rural Hall, and the Village of Clemmons offer weekly residential yard waste collection to its citizens. Winston-Salem residents may purchase a 96-gallon yard waste cart for $65 plus pay an annual $50 fee for weekly yard waste collection service. Kernersville residents may purchase yard carts from the Town for $50. Rural Hall residents pay a one-time $60 fee for a 96-gallon yard waste cart. Likewise, the Village of Clemmons charges a $50 annual fee for households wishing to receive weekly yard waste service. Approximately 220 households in Rural Hall use the yard waste carts. Approximately 17,000 households participate in the yard cart program in Winston-Salem. In addition, The Winston-Salem Sanitation Division collects brush every 2 weeks from any single-family households having it curbside. In FY 2001-02, the City of Winston-Salem collected 5,117 tons of yard waste in the carts and 9,089 tons of loose brush. All material collected from this program is taken to the Overdale Yard Waste Facility. The Town of Kernersville processed 2,500 tons of yard waste at its facility in FY 2001-02.

The City of Winston-Salem, the Towns of Kernersville and Rural Hall and the Village of Clemmons operate seasonal loose leaf collection programs. In FY 2001-02, The City of Winston-Salem collected 18,880 tons and the Village of Clemmons 5,280 yd^3 of loose leaves. Leaves from the City of Winston-Salem are taken to either the Reynolds Park Road Leaf site or the Shorefair Drive leaf transfer site. These leaves are composted and sold by the CCUC contractor, Wrico. The loose leaves in Rural Hall and Clemmons are taken to their respective compost facilities.

Clemmons, Kernersville, Lewisville, Rural Hall and Winston-Salem collect Christmas trees on a seasonal basis for inclusion in their compost programs.

Some Forsyth communities and the Cooperative Extension service have encouraged backyard composting and Grasscycling. The Town of Kernersville sells Earth Machine Home composters to Town residents at the deeply discounted price of $15 and conducts composting and naturescaping workshops to promote backyard composting. The Recycling Committee of the Town of Lewisville distributed over 300 C. H. Shepard composting bins in the past two years at a cost of $12 per bin to Lewisville residents. A total of 350 bins have been distributed thus far. Committee volunteers also conducted a series of Master Composter workshops graduating 15 Master Composters. This program was funded in part by a $5,000 grant from DPPEA.

Intended Actions

Existing yard waste management programs will be continued. The Town of Kernersville will continue to promote backyard composting through workshops and discounted pricing on the sale of compost bins.

The CCUC is having discussions with Keep Winston-Salem Beautiful and the Cooperative Extension Service to investigate the possibility of having a county-wide sale of backyard compost bins. The CCUC would most likely provide funding while KWSB and the Cooperative Extension Service would provide day-of-sale labor and then ongoing technical composting

expertise to buyers of the bins. The CCUC is considering applying for a grant through DPPEA to help defray the costs of the bins.

The CCUC is working with several schools in the Winston-Salem/Forsyth County School District to implement compost programs. If approved by school administration, these programs may be in place at the beginning of the 2003-04 school year.

F. INCINERATION WITH AND WITHOUT ENERGY RECOVERY

Current Program

Incineration is not part of Forsyth County's current program. With or without energy recovery, it has not been perceived as a viable option at this time due to the capital and operating costs, the lack of flow control, and public opposition.

Intended Actions

At this time, there are no plans to investigate incineration as an alternative waste management method in Forsyth County. Future revisions to this Plan may include further consideration of incineration with and without energy recovery.

G. TRANSFER OF SOLID WASTE OUTSIDE GEOGRAPHIC AREA

Current Program

FY 2001-02 saw a 130.4% increase in the amount of solid waste transferred out of Forsyth County for disposal. Not since FY 1996-97 has such a large amount of solid waste been transferred outside the county. This increase was due solely to the transfer of 16,911 tons by Republic Services to their Uwharrie Environmental Services Landfill in Montgomery County in FY 2001-02.

On January 6, 2003, Republic Services received a Permit to Operate (34-16-T) for its newly constructed transfer station on Overdale Road in Winston-Salem. This transfer station is designed to transfer 600-1,5000 tons of MSW per day. It is currently transferring an average of 600 tpd of MSW from Republic, Waste Management and Triad Waste haulers. It is permitted to accept waste from Forsyth County as well as 17 other counties in North Carolina and transfer it to Uwharrie Environmental Services Landfill in Montgomery County. This transfer facility is expected to transfer an even greater amount of Forsyth County generated solid waste out of the county for disposal during the five years for which the PTO is valid. Although Uwharrie Environmental Services operates a mixed waste processing facility near its landfill, Republic sources state that there is no recovery of recyclables from the waste being transferred out of Forsyth County.

Intended Actions

The Town of Kernersville is considering all transfer and disposal options in the face of losing their existing disposal site at the end of 2003 – Piedmont Sanitary Landfill. There are no other public solid waste programs actively investigating transfer options at this time.

The CCUC will encourage Republic Services to use the mixed waste processing facility at its Uwharrie Landfill to recover as much recyclable material as possible from waste transferred out of Forsyth County.

H. SOLID WASTE DISPOSAL

Current Programs

In 2003, Forsyth County is home to 2 large, active MSW landfills and one MSW transfer station. Appendix H gives a graphic overview of the flow of waste disposed from Forsyth County generators. Presently there are several contracts and agreements in place that determine the ultimate disposal facility of most waste from the county. For example, the City of Winston-Salem Sanitation Division takes all of its waste exclusively to Hanes Mill Road Landfill. The City of Kernersville takes all of its waste to Piedmont Sanitary Landfill. The CCUC requires all private, for-hire waste transporters to sign an agreement with them to take all of the waste collected inside the city limits of Winston-Salem to Hanes Mill Road Landfill. As indicated in the graphic in Appendix H and in violation of the CCUC agreement, this is not always being done. The CCUC is investigating methods of enforcing these agreements more vigorously.

Municipal solid waste

Hanes Mill Road Landfill is owned and operated by the City of Winston-Salem and operated by the Utility Commission. Hanes Mill Road Landfill accepts waste exclusively from Forsyth, Davie and Stokes County sources. It has approval to accept waste from Yadkin and Surry counties but is not receiving waste from those counties currently. In FY 2001-02, HMRLF received 260,617 tons of solid waste from Forsyth County sources and 27,336 tons from Davie and Stokes counties. The tip fee at Hanes Mill Road Landfill was $32/ton in 2002 for most loads of waste delivered by public or private waste haulers.

It is estimated that the Hanes Mill Road Landfill Facility will close its existing site in 2004. At that time, a new 347 acre expansion site adjacent to the original area will open to receive waste. About 100 acres of the expansion area are being lined for waste disposal. The expansion area is projected to reach capacity in approximately 17-20 years based on current airspace and compaction calculations, and waste receipt projections. The life of this landfill may be shortened by two to three years when the Piedmont Sanitary landfill closes at the end of 2003; and if the solid waste from Forsyth County sources now being disposed of in that facility are received at the Hanes Mill Rd Landfill (65,050 tons in FY 2001-02).

Hanes Mill Road Landfill has Division of Waste Management approval to use an alternative daily cover called Posi-Shell® that aids in reducing the amount of air space consumed by conventional daily cover material (soil). In addition, the landfill has received approval from the Division of Waste Management to use latex paint from 3RC as an ADC additive.

Piedmont Sanitary Landfill is owned and operated by Waste Management, Incorporated. In FY 2001-02 it received 65,050 tons of waste from Forsyth County sources. Since it opened in 1990, the City of Kernersville has taken all of its waste collected by municipal operations to Piedmont Landfill. Piedmont Landfill also imports a substantial amount of waste from out of the county and the state. The Piedmont Sanitary Landfill in Kernersville is scheduled to close in late 2003.

Construction and demolition debris

Old Salisbury Road C & D Landfill is owned by the City of Winston-Salem and operated by the CCUC. It opened in September 1996, replacing the previous Land Clearing & Inert Debris landfill on Overdale Road. The site consists of 140 acres, 56 acres of which are used for waste disposal. The OSR landfill has a remaining life expectancy of approximately 10 years, based on current supply projections. There are 5 DENR permitted and 30 private Land Clearing and Inert Debris (LCID) landfills performing varying amounts of wood waste recovery, however no other C&D landfills operate in Forsyth County.

Intended Actions

Municipal solid waste

The CCUC has concluded that the Hanes Mill Road Landfill will likely be the last suitable site for a municipal solid waste landfill in Forsyth County. Consequently, meeting future disposal needs will most likely require use of out-of-county disposal facilities. The Commission recommends that planning for future waste disposal capacity begin immediately, and secondly that actions be undertaken to prolong the useful lives of both the Hanes Mill Road Landfill and the OSR landfill. Two strategies, in particular, are recommended: (1) increasing the amount of waste compacted into each cubic yard of landfill space, and (2) diverting more materials from disposal through increased recycling.

There is evidence that Republic Services is disposing of waste from within the city limits of Winston-Salem at a landfill other than Hanes Mill Road, in violation of the agreement they signed with the Utility Commission. (See Section G.) Enforcement actions are pending.
The Town of Kernersville is currently investigating alternatives to disposing of waste at Piedmont Landfill when it closes at the end of 2003.

Construction and demolition debris

It is recognized that diversion of materials from the C&D waste stream should be a priority focus of Forsyth County's non-residential waste recycling efforts, given the amount of C&D debris destined for disposal. Toward this end, the Commission is considering C&D debris management alternatives, including:

- Establishment of a differential tipping fee at the C&D landfill to provide an economic incentive for source separation and recycling of selected C&D materials, such as clean wood waste;

- Establishment of a receiving and materials preparation area for source-separated and marketable C&D materials at the C&D landfill site.

I. COMMUNITY AND SCHOOL EDUCATION

Current Programs

A variety of educational pamphlets listing the locations of collection centers, materials accepted and how to prepare materials for recycling have been produced and distributed. Presentations are given to civic groups and in public schools and pre-schools by both the City of Winston-Salem and the Towns of Kernersville and Lewisville. Keep Winston-Salem Beautiful (KWSB) and Recycle Today (Winston-Salem's contracted recycling program) sponsor the following special educational events:

- America Recycles Day – Activities are conducted to promote recycling and buying recycled products including buy recycled contests and various media promotions.

- Clean and Green School Campus Contest -- A major environmental review of Forsyth County Public Schools. KWSB and the Forsyth County Garden Club Council judge schools on their beautification and environmental education programs. "Clean & Green" flags and certificates are awarded to outstanding schools and exemplary or role model schools also receive engraved plaques and trees.

- Earth Day Celebration – Each April KWSB and Recycle Today conduct presentations in Forsyth County schools and other local groups on recycling, litter prevention, composting and environmental education. The purpose being to increase awareness of environmental issues at an early age and to encourage children to appreciate our natural resources. Similar presentations are also conducted throughout the course of the year as requested. KWSB is a system-wide school partner.

City and KWSB programs are promoted at community events and fairs. Additionally, video and radio advertising are used to educate the public.

The Town of Lewisville also participates in the Earth Day celebration by conducting programs at Lewisville Elementary and Meadowlark Elementary Schools.

The level of participation in the residential recycling program may be increased by more intense public information. Targeting specific audiences, recyclable materials, and using many different forms of communication can enhance education.

In addition to purely educational activities at county schools, the CCUC is funding and administering a comprehensive recycling program for the entire Winston-Salem/Forsyth County School District. The CCUC has retained the services of Waste Management to collect cardboard, mixed office paper and beverage containers from all the public schools in the county. The CCUC is spending approximately $75,000 annually to fund this program and providing

administrative services to implement the program. It is estimated that when fully operational, the program may divert as much as 2,000 tons of waste per year from landfilling.

Intended Actions

The CCUC and the City of Winston-Salem consider educating the general public and business community on means to reduce, reuse and recycle and promoting participation in these activities to be a high priority, and intends to make recommendations along these lines for consideration by staff and the Utility Commission.

J. SPECIAL WASTE MANAGEMENT

The programs for the management of special waste cover tires, white goods, motor oil and household hazardous waste. They are operated in conjunction with the private sector and capture virtually all tires and white goods. The amounts of special wastes being recycled are provided in Table 5-3. Programs for the management of these materials are discussed in the remainder of this section.

Special Wastes Managed - FY 2001-02

Waste Material	Amount Recycled
White Goods	2,147 tons
Household Hazardous Waste	168 tons
Scrap Tires	5,534 tons
Used Motor Oil	6,831 gallons
e-wastes (Kernersville only)	6 tons

Table 5-3

1. TIRES

Current Programs

In accordance with NC law, discarded automobile and truck tires are banned from landfills in Forsyth County. Tires generated in the normal course of business are collected free of charge at the Hanes Mill Road Landfill. Tires are stored in trailers until full, then they are transported to U. S. tire in Concord, NC for processing. Forsyth County residents are allowed to bring up to five tires per household per year at not charge. Forsyth County also has a tire cleanup program that allows property owners to dispose of more than the 5 tires per year allotted to residents. Tire clean-ups must be pre-authorized by CCUC staff before property owners bring the tires to Hanes Mill Road Landfill. All commercial scrap tire generators in Forsyth County must pre-register with the Solid Waste Division before tires will be accepted at HMRLF.

Intended Actions

Tire collection and management will continue unchanged.

2. WHITE GOODS

Current Programs

White goods are accepted free of charge for recycling at Hanes Mill Road Landfill. The CCUC Solid Waste Division recently upgraded current operations by constructing a white goods storage, staging and transfer facility to keep the white goods free of dirt and facilitate vehicle unloading and loading. A contractor removes the Freon from Freon containing items. The white goods are recycled at Pugh Auto Crushing and Processing.

The Town of Kernersville collects white goods from residential sources 2 times per week. The Town of Rural Hall collects white goods from residents one time a week. White goods containing Freon from these two programs are taken to Hanes Mill Road Landfill for further processing. Others are taken directly to a local scrap processor.

Intended Actions

White goods management will remain the same for the foreseeable future.

3. USED MOTOR OIL

Current Programs

Collection of used motor oil is provided free to residents of Forsyth County at the Enviro-Station (see the following section for a full description of the services provided by the Enviro-Station). During FY 2001-02, 6,831 gallons of used motor oil were collected through this program. Additionally, some auto parts stores and oil change service centers accept used motor oil as a part of their services. It is unknown whether these businesses charge a fee for the service. The Cooperative Extension Service operates an oil recycling program called HERO for Help the Environment, Recycle Oil. This program is targeted towards the agricultural community and provides fact sheets and videos on the environmental consequences of improper disposal.

Intended Actions

There are no plans to modify used motor oil management practices at this time.

4. HOUSEHOLD HAZARDOUS WASTE

Current Program

Household hazardous waste management in Forsyth County is administered by the CCUC through an agreement with 3RC, a local waste management company specializing in HHW and CESQG waste management. 3RC provides daily HHW collection services through the EnviroStation, which is operated out of its own permanent facility located on Martin Luther King Drive. Examples of items accepted at the EnviroStation are as follows:

- Paint & related products
- Pesticides
- Fuels
- Aerosols
- Antifreeze
- Fertilizers
- Pool chemicals
- Used motor oil
- Acids
- Bases
- Batteries

In FY 2001-02 3,789 participants dropped off 366,257 pounds of HHW at the EnviroStation. Paint and paint related products continue to make up over 50% of all HHW materials delivered to the facility.

The CCUC has recently gained approval from the Division of Waste Management to use screened latex paint from the EnviroStation as an additive to its ADC, Posi-Shell. Tests showed that the inclusion of latex paint did not adversely affect the performance of the ADC and may actually help it adhere to plastics better. This arrangement will allow the CCUC to better manage and beneficially reuse the large latex paint waste stream from the HHW program.

Intended Actions

No changes in the HHW program are envisioned at this time.

5. ELECTRONIC WASTE

Current Programs

The Town of Kernersville held an e-recycling event in 2002 in which they collected and recycled 6 tons of various electronic devices including computers, monitors and printers. 3RC, the contractor that runs the Forsyth County HHW program, accepts certain e-wastes from residents and businesses for a fee.

Intended Actions

The CCUC has a staff person who is working with the Product Stewardship Institute government group to address national producer take-back of e-wastes. The CCUC and the Town of Kernersville have staff working with the State legislative '605 process' working group to investigate a statewide legislative solution to the e-waste issue. These representatives will continue to help the CCUC and Town of Kernersville address the e-waste issue.

K. ILLEGAL DISPOSAL AND LITTER MANAGEMENT

Current Programs

Illegal disposal. The Forsyth County Environmental Health program addresses illegal disposal matters especially in the form of investigating sites that have been reported by concerned citizens. Many of these sites contain scrap tires or construction and demolition debris. The City's housing department handles complaints concerning vacant property with illegal dumping that are within the City of Winston-Salem limits.

Litter management. The City of Winston-Salem has a policy for the prevention of litter in the form of the City Sanitation Code. The code incorporates language to reference litter in general. The policy also allows the police to cite people according to the state litter laws, while the City Code allows for a 30-day imprisonment. The City also has a covered loads policy for vehicles at the landfill. Winston-Salem has a Keep Winston-Salem Beautiful Executive Director whose primary focus is litter prevention and beautification. The program conducts many events held throughout the year that promote litter prevention and environmental education. Key programs are as follows:

- Clean and Green School Campus Contest -- A major environmental review of Forsyth County Public Schools. KWSB and the Forsyth County Garden Club Council judge schools on their beautification and environmental education programs. "Clean & Green" flags and certificates are awarded to outstanding schools and exemplary or role model schools also receive engraved plaques and trees.

- Adopt-A-Street – Individuals, community and civic organizations and businesses adopt a section of one or more city streets and agree to collect litter at least six times per year. Signs are erected at each location, supplies are provided and trash is collected. Currently there are over 60 adopted streets in Winston-Salem. State maintained streets are similarly treated through the NCDOT Adopt-A- Highway Program.

- Great Winston-Salem Clean Up – Annual cleanup in April is part of the national Great American Cleanup coordinated by Keep America Beautiful. Hundreds of volunteers select or are assigned to cleanup specific streets, parts or neighborhoods. In 2002 nearly 600 volunteers collected over 5 tons of trash and debris.

- Big Sweep – Held the 3rd Saturday in September, this annual event is conducted nationwide and utilizes volunteers to clean up the City's creeks, streams, and lakes. In 2002 the NC Big Sweep organization presented Forsyth County with the Outstanding Achievement Award and Outstanding Community Involvement Award for their volunteer turnout and volume. Nearly 1,100 volunteers removed 26 tons of trash and debris from local waterways.

KWSB also conducts an annual 'Litter Index' of Winston-Salem as required by the parent organization, Keep America Beautiful. The city is divided up into nearly 100 sub areas based on land usage. Teams drive through these areas and assign scores based on the presence or absence of litter along roadways. Winston-Salem received a score of 1.97 in 2002 with 1 being litter free and 4 being an illegal dump. This annual study is used to target future cleanup activities for KWSB events and ongoing programs.

The Town of Lewisville Beautification Committee coordinates an annual town-wide one-day event to pick up trash in right-of-ways and other public property. The Town of Lewisville also sponsors a "Community Service Grant" program whereby nonprofit organizations may apply for grants of up to $500 annually for performing community service work, which often entails picking up litter in public areas and parks, including Joanie Moser County Park. In addition, the Town uses court-ordered community service workers to pick up litter from rights-of-way.

Intended Actions

Illegal disposal. To address illegal disposal and other issues, the County will seek the assistance of local law enforcement and decision-makers to address remaining problems and to assist in illegal dumping abatement program development. One abatement measure under consideration is providing solid waste collection service to unincorporated residents under a mandatory pay system. This policy mechanism should reduce unauthorized disposal practices as well as improve collection efficiencies in the rural areas of the county.

Litter management. Keep Winston-Salem Beautiful continues to increase its litter prevention education programs in the schools and the community.

L. PURCHASE OF RECYCLED PRODUCTS

Current Program

No formal recycled product purchasing program is in place at this time. In 2002, the City of Winston-Salem outsourced all of its printing to Ikon Printing Services. Ikon purchases and uses 30% post-consumer content paper for most printing applications.

Intended Actions

The CCUC will encourage the City/County Purchasing Division and area businesses to establish a policy to purchase supplies with recycled content if cost effective. Commission staff will utilize the resources of the Buy Recycled Business Alliance to promote and measure the effectiveness of these initiatives.

M. DISASTER RESPONSE

Current Program

The current disaster response program provides for the efficient removal of debris from essential thoroughfares, storing collected material in designated sites located in both the County and the City, and removing these materials for ultimate disposal or reuse. During a Winter ice storm in 2003, Forsyth County and its municipalities showed great responsiveness to the need to mobilize their respective debris management forces in order to cope with a large amount of downed limbs and trees. Debris was managed through the combined efforts of government and private agencies as well as citizens at large. In many cases, private collectors/haulers were contracted through government agencies to clean up storm debris from public rights-of-way.

The City of Winston-Salem established 2 additional storm debris collection satellite sites during the 2003 winter ice storm mentioned above. Storm debris is either staged for later processing or processed on these sites. This provides Winston-Salem with a total of 4 sites to store and process storm debris: Shorefair Drive Leaf Site, Kester Mill Road, Senior Services Lot at

Shorefair and 30th streets and the Overdale Road Yardwaste Facility.

Intended Actions

There are no plans at this time to modify the existing disaster response plan to manage storm debris in Forsyth County.

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VI. PRIVATE ENTERPRISE CONSIDERATION

Forsyth County has numerous private waste companies operating within its boundaries. Referring back to Table 5-1 shows the names and waste streams managed by the various companies. The municipalities of Forsyth County use a combination of publicly and privately operated programs to provide their services. Waste collection is provided by public operations in Winston-Salem and Kernersville and is contracted to private enterprise in the remaining municipalities and for county residents. Recyclables are collected solely by private companies, as are household hazardous wastes.

The disposal facilities are both publicly and privately owned, with the Winston-Salem/Forsyth County Utility Commission operating both MSW and C & D landfill facilities, Republic Services operating the Overdale Road Transfer Station and Waste Management operating Piedmont MSW Landfill. Piedmont Landfill is scheduled to close by the end of 2003 thus creating the need for approximately 70,000 tons annually of Forsyth County waste to be diverted to another disposal destination. The yard waste facility managed by the Utility Commission is contracted to a private firm for operations, with the city operating the scales and collecting the tipping fees.

The CCUC, Forsyth County and its municipalities will continue to consider opportunities to involve the private sector in managing solid waste and recycling programs.

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VII. SOLID WASTE MANAGEMENT COSTS AND FINANCING METHODS

North Carolina's revised Solid Waste Management Act requires that local solid waste management plans contain an assessment of full costs and financing mechanisms for existing programs. This section provides a summary description and assessment of solid waste management costs as reported by the county and each municipality based upon each jurisdiction's FY 2001-02 Solid Waste Management Annual Report, and updated information provided by selected jurisdictions.

A. COSTS - DESCRIPTION AND ASSESSMENT

Table 7-1 shows total annual solid waste management budgets and per-household costs for each municipality. Annual budget figures should reflect administrative, public education, and code enforcement costs as well as (for some communities) bulk container collection services not reflected in the per-household costs for specific services provided to residents of single family and low density multi-family dwellings. Costs for collecting waste and recyclables vary with the nature of services provided, the size of the town, and other variables. Comprehensive data is not available for all communities. As each jurisdiction fine-tunes its record keeping and accounting methods, reporting of more accurate and detailed cost information will be possible in future years. The reader should exercise caution in comparing cost estimates between jurisdictions, since each program's operations and costs are unique and jurisdictions have grouped program data in different ways.

Table 7-2 provides information on the cost of City/County Utility Commission solid waste management programs. Included in this table are funds associated with the City of Winston-Salem's curbside recycling program also shown in Table 7-1.

B. FINANCING METHODS

The solid waste collection programs for the municipalities in Forsyth County are funded by property taxes that pay for both the cost of collection and tipping fees at the landfill, with one exception: The City of Winston-Salem charges user fees to cover the cost of collecting and disposing of bulk container waste. The containers are provided and paid for directly by each generator.

FY 2001-02 Solid Waste Management Costs by Program and Municipality

Municipality	Total Annual Budget	Residential SW Collection & Disposal $/hhld./mo.	Bulky Item Pick Up $/hhld./mo.	Yard Waste Collection $/hhld./mo.	Curbside Recycling $/hhld./mo.
Bethania	$17,850	$6.50 (curb) $11.50 (bkyd)	none	none	$1.30
Clemmons	$769,488	$7.92	$0.63	$4.17[1]	$1.86
Kernersville	$1,482,662	$7.38	$1.60	$2.95	$2.17
Lewisville	$410,677	$7.93	n/a	n/a	$1.94
Rural Hall	$149,000	$7.31	n/a	$0.73	$2.82
Tobaccoville	$99,911	$6.81	$0.37	none	$1.29
Walkertown	$217,226	$8.59	none	none	$2.09
Winston-Salem	$11,837,697	$6.49	$0.25	$4.17[1]	$1.98[2]

1 $50/yr fee charged only to participating households. Not a universal service in jurisdiction.
2 Does not include recycling revenue offset. (Utility Commission gets 25%)

Table 7-1

FY 2001-02 Costs for City/County Utility Commission Solid Waste Management Programs

Program	Total Operating Cost	Tons Managed	Operating Cost ($/ton)
Hanes Mill Rd LF	$3,401,841	287,953	$11.81
OSR C&D LF	$418,048	104,808	$3.99
Yard Waste Mgt.	$440,056	35,294	$12.47
HHW Mgt.	$245,471	183	$1,340.00
White Goods Recycling	$36,499	2,147	$17.00
Tires Recycling	$437,186	5,534	$79.00
Curbside Recycling	$1,588,903	9,629	$165.01
Drop-Off Recycling	$17,260	3,338	$5.17
Administration	$363,160		
Debt and Lease Expense	$722,789		
Total	$7,671,213	448,886	$17.09

Table 7-2

The recycling programs of the smaller towns are also tax supported. The City of Winston-Salem's curbside program is funded by landfill tipping fee revenues, with costs offset by revenue generated from the sale of the collected materials. Twenty-five percent of the revenues are returned to the Utility Commission, which amounted to $138,218 for the curbside recycling

program and $7,561 for the County drop-off centers in FY 2001-02.

Table 7-3 presents financing methods for City/County Utility Commission Solid Waste Management Programs. The landfills operated by the Utility Commission are entirely supported by tipping fees from public and private haulers. The fees cover daily operations, construction, and closure and post-closure care. Given that substantial tipping fee revenue received at these facilities is ultimately paid by the municipalities, the Utility Commission utilizes some of the revenue to support recycling programs and facilities benefiting all jurisdictions, namely the recycling centers at the Hanes Mill Road Landfill, Kernersville, and Pfafftown, the City of Winston-Salem's curbside recycling program, and the 3RC HHW collection program. The State's Advance Disposal Fees and Hanes Mill Road Landfill tipping fees fund the Scrap Tire Management Program. The State advanced disposal fee for white goods finances the management of these materials with some revenue in excess of costs remaining.

Sources of Financing for
City/County Utility Commission Solid Waste Programs

Source of Funds	FY 2001-02 Amount
Landfill User Fees	$11,798,690
NC Tire Tax Income	$378,811
NC White Goods Tax Income	$0
Curbside and Drop-Off Center Recycling Revenue	$159,900
Resource Recovery (sale of captured methane from the landfill, sale of white goods and chipped wood)	$98,946
Investment Income	($729,822)
Miscellaneous Revenues (rent on Ziglar house at the landfill)	$51,088

Table 7-3

The current mechanisms for financing the county's integrated waste management system are insufficient to assure the continued existence of subsidized programs. Fee-based services are working well overall, operating within tight budgets. Hanes Mill Road Landfill generates revenues that cover current operations as well as sufficient reserves for construction and maintenance of the landfills and post-closure requirements. However, all other solid waste programs in Winston-Salem and other municipalities are dependent upon general fund and landfill tip revenues. It is estimated that the programs paid for out of the tip fee at Hanes Mill Road Landfill amount to a $5/ton surcharge. With the diversion of larger amounts of waste to out-of-county and private landfills, the ability of the CCUC to fund county recycling and waste reduction programs will diminish.

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APPENDICES

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APPENDIX A

Notice of Public Meeting

PUBLIC MEETING NOTICE

The Winston-Salem/Forsyth County Utility Commission will hold a public meeting Monday, May 12 on the Forsyth County 10 Year Solid Waste Management Plan. The purpose of this meeting is to collect public comment on the three-year update to the plan. The meeting will be held at 2 p.m. in the Council Chamber, Room 530, City Hall South, 100 E. First Street, Winston-Salem, NC.

Draft copies of the 10 Year Solid Waste Management Plan are available for review at all municipal town halls in Forsyth County; the main branch of the Forsyth County Library, 660 W. Fifth St. Winston-Salem; and at the City/County Utilities Division Administrative Offices, 100 E. First Street, Suite 131, Winston-Salem, NC.

For more information, call the Utilities Division at 727-8418.

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APPENDIX B

Resolutions from Participating Municipalities Adopting the Solid Waste Management Plan

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RESOLUTION TO APPROVE THE WINSTON-SALEM/FORSYTH COUNTY SOLID WASTE MANAGEMENT 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 cost of solid waste management; and

WHEREAS, the Town of Bethania adopted a solid waste management plan on June 8, 2000; and

WHEREAS, the Town of Bethania, in cooperation with the Winston-Salem/ Forsyth County Utility Commission, realizes the need for a 3-year update to the 10 Year Solid Waste Management Plan,

NOW, THEREFORE, LET IT BE RESOLVED that the Board of Commissioners of the Town of Bethania hereby adopts the Forsyth County 10 Year Solid Waste Management Plan (SWMP) for the planning period of July 1, 2003 to June 30, 2013.

Adopted this 12th day of June 2003.

Deborah Stoltz Thompson, Mayor

ATTEST:

Karen Keller, Town Clerk

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Resolution Number 2003-R-10

RESOLUTION ACCEPTING AND ENDORSING THE SOLID WASTE MANAGEMENT PLAN OF 2003 FOR THE VILLAGE OF CLEMMONS

WHEREAS, it is a priority of this community to protect human health and the environment through safe and effective management of municipal solid waste;

WHEREAS, the reduction of the amount and toxicity of the local waste stream is a goal of this community;

WHEREAS, equitable and efficient delivery of solid waste management services is an essential characteristic of the local solid waste management system;

WHEREAS, it is a goal of the community to maintain and improve its physical appearance and to reduce the adverse effects of illegal disposal and littering;

WHEREAS, the Village of Clemmons recognizes its role in the encouragement of recycling markets by purchasing recycled products;

WHEREAS, involvement and education of the citizenry is critical to the establishment of an effective local solid waste program;

WHEREAS, the State of North Carolina has placed planning responsibility on local government for the management of solid waste;

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 update the Ten Year Comprehensive Solid Waste Management Plan at least every three years;

WHEREAS, the City-County Utilities Solid Waste Management Department and Citizens Solid Waste Advisory Council have undertaken and completed a long-range planning effort to evaluate the appropriate technologies and strategies available to manage solid waste effectively;

NOW, THEREFORE, BE IT RESOLVED BY THE VILLAGE COUNCIL that the 2003 Ten Year Comprehensive Solid Waste Management Plan is accepted and endorsed and placed on file with Clerk to the Council on this 23rd day of June, 2003.

Edward Y. Brewer
Mayor

ATTEST:

Marsha E. Sucharski, CMC
Village Clerk

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TOWN OF KERNERSVILLE

Larry R. Brown, Mayor
Randy E. McCaslin, Town Manager

P.O. Drawer 728
Kernersville, NC 27285-0728

134 East Mountain Street
Telephone (336) 996-3121
Fax (336) 996-4822

I, Dale F. Martin, Town Clerk of the Town of Kernersville, North Carolina, do hereby certify that the attached document is a true and accurate copy of the minutes of the Regular Session of the Kernersville Board of Aldermen duly held on June 3, 2003.

Witness my hand and the seal of the Town of Kernersville, this 18th day of June, 2003.

Dale F. Martin
Town Clerk

EXCERPT FROM THE MINUTES OF THE KERNERSVILLE BOARD OF ALDERMAN MEETING HELD ON TUESDAY, JUNE 3, 2003.

11. Consideration of Approval of Solid Waste Plan Update.

Mr. Tim Shields stated that every three years all the Municipalities in the County participate in the County's Solid Waste Plan as required by the State. He stated that we have more information and input into this year's plan than we've ever had before due to the increased efforts in recycling.

Alderman Irving Neal made a **Motion** for the approval of the Solid Waste Plan as recommended. Alderman Brian Green seconded the motion and the vote was all for and motion carried.

ALDERMEN
B. J. Ellender – Brian M. Green – Dawn H. Morgan – J. Irving Neal – Curtis L. Swisher

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RESOLUTION 2003026 OF THE LEWISVILLE TOWN COUNCIL
ADOPTING THE *SOLID WASTE MANAGEMENT PLAN*
OF FORSYTH COUNTY AND THE MUNICIPALITIES OF FORSYTH COUNTY

WHEREAS, it is a priority of the Town of Lewisville to protect human health and the environment through safe and effective management of municipal solid waste; and

WHEREAS, the State of North Carolina has placed planning responsibility on local government for management of solid waste; 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 update the Ten Year Comprehensive Solid Waste Management Plan at least every three years; and

WHEREAS, the Winston-Salem/Forsyth County Utility Commission has prepared a draft *10 Year Solid Waste Management Plan* for the planning period of July 1, 2003 to June 30, 2013; and

WHEREAS, the draft plan has been reviewed by the Lewisville town staff;

NOW THEREFORE BE IT RESOLVED THAT THE LEWISVILLE TOWN COUNCIL adopts the draft Solid Waste Management Plan as adopted by the Winston-Salem/Forsyth County Utility Commission for submission to the State.

Adopted this 5th day of June 2003.

ATTEST:

Joyce C. McWilliams Walker
Town Clerk

Robert G. Stebbins

I CERTIFY THIS DOCUMENT
TO BE A TRUE AND ACCURATE
COPY OF THE ORIGINAL
Joyce C. McWilliams Walker
Town Clerk

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RESOLUTION #546

RESOLUTION ACCEPTING AND ENDORSING THE SOLID WASTE MANAGEMENT PLAN OF 2003 FOR THE TOWN OF RURAL HALL

WHEREAS, it is a priority of this community to protect human health and the environment through safe and effective management of municipal solid waste;

WHEREAS, the reduction of the amount and toxicity of the local waste stream is a goal of this community;

WHEREAS, equitable and efficient delivery of solid waste management services is an essential characteristic of the local solid waste management system;

WHEREAS, it is a goal of the community to maintain and improve its physical appearance and to reduce the adverse effects of illegal disposal and littering;

WHEREAS, the Town of Rural Hall recognizes its role in the encouragement of recycling markets by purchasing recycled products;

WHEREAS, involvement and education of the citizenry is critical to the establishment of an effective local solid waste program;

WHEREAS, the State of North Carolina has placed planning responsibilities on local government for the management of solid waste;

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 update the Ten Year Comprehensive Solid Waste Management Plan at least every three years;

WHEREAS, the Forsyth County Solid Waste Management Department and Citizens Solid Waste Advisory Council have undertaken and completed a long-range planning effort to evaluate the appropriate technologies and strategies available to manage solid waste effectively;

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN OF RURAL HALL BOARD OF COUNCILMEN that the Town of Rural Hall's 2003 Ten-Year Comprehensive Solid Waste Management Plan is accepted, endorsed and placed on file with the Clerk to the Board on this 9th day of June, 2003.

TOWN OF RURAL HALL

Larry T. Williams

Larry T. Williams, Mayor

ATTEST:

Linda V. Booth

Linda V. Booth, Town Clerk

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Resolution #108

VILLAGE of TOBACCOVILLE

RESOLUTION ACCEPTING and ENDORSING THE WINSTON-SALEM/FORSYTH COUNTY SOLID WASTE MANAGEMENT PLAN of 2003

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, and 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 to perform updates to the plan every three years; and

WHEREAS, the Village of Tobaccoville requested to be represented by the Winston-Salem/Forsyth County solid waste staff;

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE VILLAGE OF TOBACCOVILLE that the Winston-Salem/Forsyth County 2003 Ten Year Comprehensive Solid Waste Management Plan is hereby adopted and placed on file with the Clerk to the Council, this the 5th day of June, 2003

Terry Shore

Terry Shore
Mayor

ATTEST:

Robin S. Key

Robin S. Key
Village Clerk

VILLAGE OF TOBACCOVILLE INCORPORATED SEAL SEAL 1991 NORTH CAROLINA

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JUN 25 2003
UTILITIES DIVISION

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TOWN OF WALKERTOWN

STATE OF NORTH CAROLINA

COUNTY OF FORSYTH

TOWN OF WALKERTOWN

RESOLUTION #03-025

JUNE 10, 2003

RESOLUTION: **TO ADOPT THE FORSYTH COUNTY TEN-YEAR SOLID WASTE MANAGEMENT PLAN 2003 UPDATE FOR PLANNING YEARS 2003 - 2013**

WHEREAS, the Solid Waste Section of the City/County Utility Commission, a joint agency of the City of Winston-Salem and Forsyth County prepared a Solid Waste Management Plan Update which is attached and made a part of this resolution; and

WHEREAS, the original Plan was developed in 1997 in accordance with N.C.G.S. 130A-309.09A(b) and revised in 2000 with the attached Plan being the second update to the original; and

WHEREAS, the 2003 Update covers the planning period of July 1, 2003 through June 30, 2013; and

WHEREAS, the purpose of the Plan is multi-faceted and is to help municipalities meet solid waste management objectives.

THEREFORE IT IS RESOLVED that the Town Council of Walkertown hereby approves and adopts the Forsyth County Ten-Year Solid Waste Management Plan 2003 Update For Planning Years 2003 – 2013.

RESOLVED AND ADOPTED this, the 10th day of June, 2003.

ATTEST BY: **TOWN OF WALKERTOWN**

By: Lynn McKinnie
Lynn McKinnie
Town Clerk

By: Tom Southern
Tom Southern
Mayor

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RESOLUTION ADOPTING THE 2003 SOLID WASTE PLAN
UPDATE FOR THE CITY OF WINSTON-SALEM AND
UNINCORPORATED FORSYTH COUNTY

WHEREAS, in August 1996, the State of North Carolina adopted a statute that required all governmental units to develop a solid waste plan that would attempt to meet the State's goal of reducing waste; and

WHEREAS, in 1997 and 2000, the Utilities Staff developed a 10 Year Solid Waste Plan for Forsyth County addressing these concerns; and

WHEREAS, the Commission approved these Plans in June 1997 and June 2000, respectively; and

WHEREAS, as required by the above referenced statute, this Plan needs to be updated and submitted to the State every three years; and

WHEREAS, Utilities Staff has collaborated and worked with all political jurisdictions within Forsyth County to update the Plan; and

WHEREAS, the staff recommends that the Commission approve this updated Plan.

NOW, THEREFORE, BE IT RESOLVED by the City/County Utility Commission, an agency of the City of Winston-Salem and Forsyth County, finds that the 2003 Solid Waste Plan update will provide appropriate guidance for the future development of solid waste needs for the City of Winston-Salem and Forsyth County, and that the Solid Waste Plan is hereby approved and adopted.

ADOPTED

JUN - 9 2003

CITY / COUNTY
UTILITY COMMISSION

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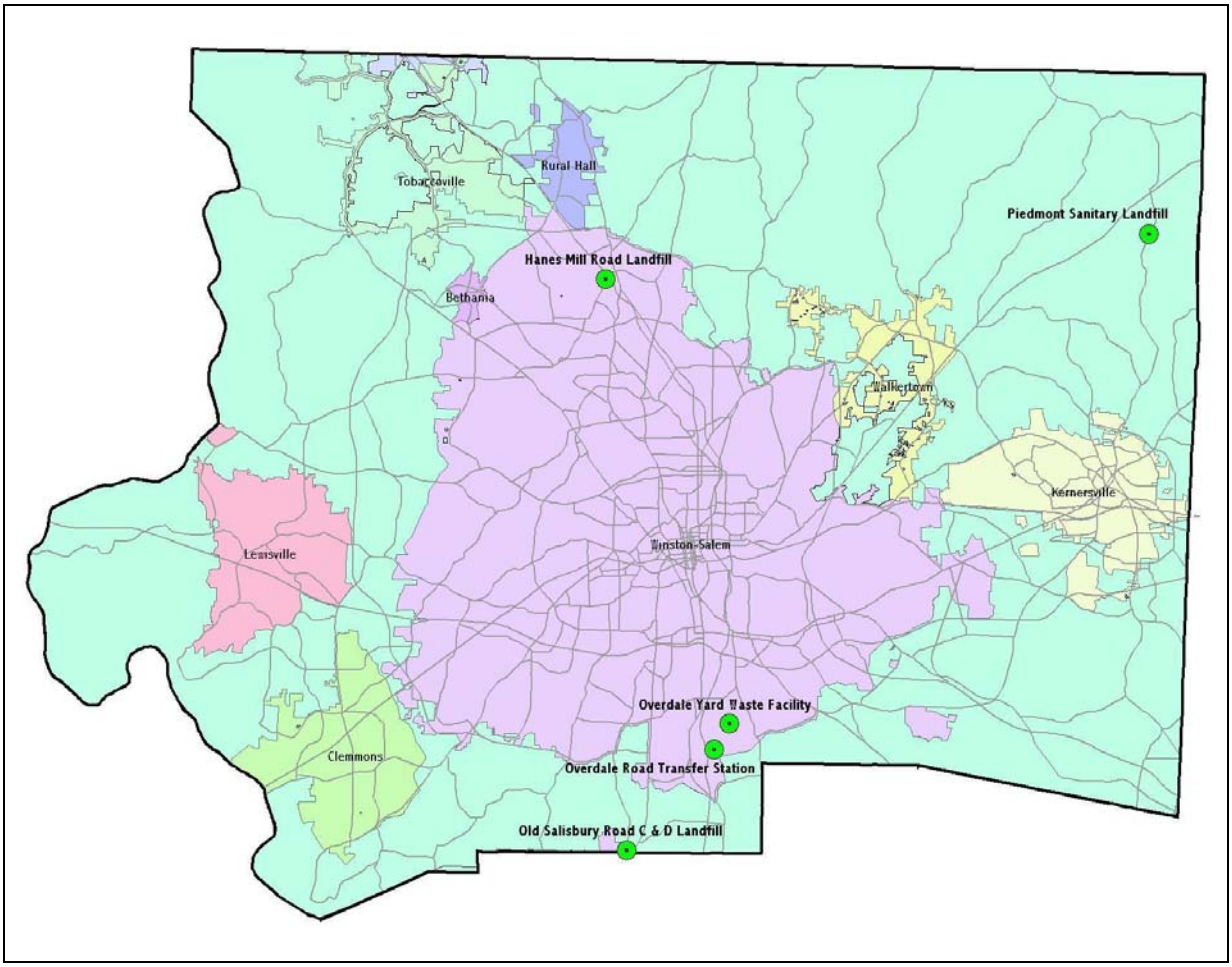
APPENDIX C-1

Map of Planning Area
Location of Municipalities Included in the Solid Waste Management Plan
Location of Primary Solid Waste Management Facilities



Forsyth County, North Carolina

APPENDIX C-2

Solid Waste Management Facilities in Forsyth County
(Excludes LCID)

Facility Name/Type	Permit #	Owner	Operator
Hanes Mill Road Landfill MSW	3402	CCUC	CCUC
Piedmont Sanitary Landfill MSW	3406	Waste Management	Waste Management
Overdale Yard Waste Facility Compost	3409	CCUC	Wrico
Overdale Road Transfer Station MSW	34-16-T	Republic Services	Republic Services
Old Salisbury Road Landfill C & D	3412	CCUC	CCUC
Enviro-Station (3RC) HHW	3415	3RC	3RC
R. J. Reynolds Landfill Industrial	3405	R. J. Reynolds	R. J. Reynolds
Atlantic Scrap & Processing Landfill MSW	3413-TE	ASAP	ASAP
Vulcan Materials Compost	3414	Vulcan Materials	Vulcan Materials
Reynolds Park Road Leaf Site Compost	3413	CCUC	CCUC

Note:
In addition to the sites listed above, the City of Winston-Salem has DENR approval to use a leaf transfer site on Shorefair Drive. All the leaves accumulated at Shorefair Drive are ultimately transferred to the Reynolds Park Road leaf site and are accounted for there.

APPENDIX D-1

Waste Composition for Winston-Salem

Material Description	Residential			Commercial	
	Single-Family	Multi-Family	Mixed	(business)	(Multi-family & business)
	Fraction	Fraction	Fraction	Fraction	Fraction
Cardboard/Paper Bags	2.05%	2.81%	6.81%	20.74%	16.14%
Newspaper	6.81%	7.30%	3.39%	3.37%	3.51%
Office Paper	0.18%	1.20%	0.48%	3.19%	1.44%
Mixed Paper	22.95%	24.43%	20.14%	22.48%	22.07%
Total Paper	**31.99%**	**35.74%**	**30.82%**	**49.78%**	**43.16%**
Clear Bottles/Containers	3.51%	3.96%	2.38%	1.47%	0.82%
Green Bottles/Containers	0.36%	0.40%	0.19%	0.30%	0.12%
Brown Bottles/Containers	3.57%	1.58%	3.12%	0.55%	0.21%
Flat Glass	0.00%	0.00%	0.03%	0.06%	0.02%
Other/Composite Glass	0.05%	0.00%	0.00%	0.16%	0.31%
Total Glass	**7.49%**	**5.94%**	**5.72%**	**2.54%**	**1.48%**
Tin/Steel Cans	2.51%	1.02%	1.89%	0.82%	0.35%
Other Ferrous	0.49%	0.37%	0.66%	0.32%	0.24%
Aluminun Cans	1.54%	0.70%	0.39%	0.38%	0.45%
Other Non-Ferrous	0.15%	0.94%	0.35%	0.06%	0.00%
White Goods	0.00%	0.00%	0.00%	0.00%	0.00%
Other/Composite Metals	1.33%	0.08%	0.00%	0.52%	0.35%
Total Metals	**6.02%**	**3.11%**	**3.29%**	**2.10%**	**1.39%**
PET	2.18%	1.34%	1.64%	1.37%	0.54%
Natural HDPE	1.23%	0.56%	0.71%	0.24%	0.35%
Colored HDPE	0.93%	0.51%	1.54%	0.77%	0.49%
Film Plastic/LDPE	4.46%	4.63%	4.55%	5.70%	3.25%
Other/Composite Plastics	3.21%	4.14%	1.72%	3.10%	3.53%
Total Plastics	**12.01%**	**11.18%**	**10.16%**	**11.18%**	**8.16%**
Food Waste	23.87%	28.55%	31.19%	22.70%	43.93%
Yard Waste	0.77%	0.00%	7.02%	0.78%	0.00%
Ag. Crop Residues	0.00%	0.00%	0.00%	0.00%	0.00%
Manures	0.00%	0.00%	0.00%	0.00%	0.00%
Wood	0.87%	1.82%	0.24%	2.07%	0.24%
Textiles	3.31%	4.17%	2.19%	1.66%	0.94%
Tires	0.00%	0.00%	0.00%	0.00%	0.00%
Other/Composte Organics	12.05%	4.60%	4.56%	4.59%	0.61%
Total Organics	**40.87%**	**39.14%**	**45.20%**	**31.80%**	**45.72%**
Rock	0.00%	0.00%	0.00%	0.00%	0.00%
Concrete	0.00%	0.00%	0.00%	0.00%	0.00%
Brick	0.00%	0.00%	0.00%	0.00%	0.00%
Soil and Fines	0.00%	0.00%	0.00%	0.00%	0.00%
Asphalt	0.00%	0.00%	0.00%	0.00%	0.00%
Gypsum Board	0.00%	0.00%	0.00%	0.00%	0.00%
Other Inorganic	1.54%	4.41%	4.18%	0.32%	0.09%
Total Inorganic	**1.54%**	**4.41%**	**4.18%**	**0.32%**	**0.09%**
Paint	0.00%	0.00%	0.00%	0.00%	0.00%
Oil/Oil Filters	0.00%	0.00%	0.00%	1.57%	0.00%
Other HHW	0.00%	0.05%	0.00%	0.49%	0.00%
Total HHW	**0.00%**	**0.05%**	**0.00%**	**2.06%**	**0.00%**
Special Waste	**0.08%**	**0.43%**	**0.63%**	**0.22%**	**0.00%**

APPENDIX D-2

Waste Composition for All Other Towns and Villages

Material Description	Residential			Commercial
	Single-Family	Multi-Family	Mixed	(Multi-family & business)
	Fraction	Fraction	Fraction	Fraction
Cardboard/Paper Bags	2.05%	12.88%	11.02%	16.58%
Newspaper	6.81%	3.45%	2.07%	4.59%
Office Paper	0.18%	2.59%	0.00%	2.16%
Mixed Paper	22.94%	21.97%	21.68%	20.60%
Total Paper	**31.98%**	**40.89%**	**34.77%**	**43.93%**
Clear Bottles/Containers	3.51%	2.14%	0.87%	1.21%
Green Bottles/Containers	0.36%	0.08%	0.00%	0.08%
Brown Bottles/Containers	3.57%	4.91%	0.46%	1.64%
Flat Glass	0.00%	0.00%	0.00%	0.00%
Other/Composite Glass	0.05%	0.12%	0.02%	0.00%
Total Glass	**7.49%**	**7.25%**	**1.35%**	**2.93%**
Tin/Steel Cans	2.51%	1.55%	2.67%	1.69%
Other Ferrous	0.49%	4.98%	1.30%	2.08%
Aluminun Cans	1.54%	0.71%	0.64%	0.52%
Other Non-Ferrous	0.15%	1.11%	0.23%	0.03%
White Goods	0.00%	0.00%	0.00%	0.00%
Other/Composite Metals	1.33%	1.33%	1.92%	0.01%
Total Metals	**6.02%**	**9.68%**	**6.76%**	**4.33%**
PET	2.18%	1.65%	1.98%	1.49%
Natural HDPE	1.23%	0.77%	0.45%	0.33%
Colored HDPE	0.93%	0.82%	1.39%	0.87%
Film Plastic/LDPE	4.46%	5.30%	5.52%	4.51%
Other/Composite Plastics	3.21%	3.28%	3.18%	4.60%
Total Plastics	**12.01%**	**11.82%**	**12.52%**	**11.80%**
Food Waste	23.86%	16.87%	15.21%	14.14%
Yard Waste	0.77%	0.20%	4.13%	3.51%
Ag. Crop Residues	0.00%	0.00%	0.19%	0.00%
Manures	0.00%	0.00%	0.00%	0.00%
Wood	0.87%	0.05%	5.62%	0.49%
Textiles	3.31%	2.32%	2.87%	7.48%
Tires	0.00%	0.00%	0.00%	0.00%
Other/Composte Organics	12.05%	9.81%	10.19%	6.59%
Total Organics	**40.86%**	**29.25%**	**38.21%**	**32.21%**
Rock	0.00%	0.00%	0.00%	0.00%
Concrete	0.00%	0.00%	0.00%	0.00%
Brick	0.00%	0.00%	0.00%	0.00%
Soil and Fines	0.00%	0.00%	0.00%	0.00%
Asphalt	0.00%	0.00%	0.00%	0.00%
Gypsum Board	0.00%	0.00%	0.00%	0.00%
Other Inorganic	1.54%	0.89%	6.24%	1.81%
Total Inorganic	**1.54%**	**0.89%**	**6.24%**	**1.81%**
Paint	0.00%	0.00%	0.00%	0.44%
Oil/Oil Filters	0.00%	0.00%	0.00%	0.86%
Other HHW	0.00%	0.22%	0.15%	0.01%
Total HHW	**0.00%**	**0.22%**	**0.15%**	**1.31%**
Special Waste	**0.08%**	**0.00%**	**0.00%**	**1.70%**

APPENDIX D-3

Waste Composition for Unincorporated Areas

Description	Residential Mixed	Commercial (Multi-family & business)
	Fraction	Fraction
Cardboard/Paper Bags	4.49%	29.51%
Newspaper	12.15%	2.43%
Office Paper	0.68%	0.41%
Mixed Paper	25.94%	17.04%
Total Paper	**43.26%**	**49.39%**
Clear Bottles/Containers	1.30%	1.09%
Green Bottles/Containers	0.58%	0.30%
Brown Bottles/Containers	2.27%	1.14%
Flat Glass	0.00%	0.11%
Other/Composite Glass	0.30%	0.18%
Total Glass	**4.45%**	**2.82%**
Tin/Steel Cans	2.29%	0.64%
Other Ferrous	0.74%	3.36%
Aluminun Cans	0.66%	0.66%
Other Non-Ferrous	0.01%	0.85%
White Goods	0.00%	0.00%
Other/Composite Metals	0.16%	0.45%
Total Metals	**3.86%**	**5.96%**
PET	2.69%	0.97%
Natural HDPE	0.72%	0.47%
Colored HDPE	1.15%	0.33%
Film Plastic/LDPE	4.49%	3.95%
Other/Composite Plastics	5.58%	4.70%
Total Plastics	**14.63%**	**10.42%**
Food Waste	20.51%	15.86%
Yard Waste	0.12%	0.79%
Ag. Crop Residues	0.00%	0.00%
Manures	0.00%	0.00%
Wood	0.01%	4.48%
Textiles	0.72%	4.80%
Tires	0.00%	0.00%
Other/Composte Organics	11.89%	2.58%
Total Organics	**33.25%**	**28.51%**
Rock	0.00%	0.08%
Concrete	0.00%	0.00%
Brick	0.00%	0.00%
Soil and Fines	0.00%	0.00%
Asphalt	0.00%	0.00%
Gypsum Board	0.00%	0.00%
Other Inorganic	0.55%	2.77%
Total Inorganic	**0.55%**	**2.85%**
Paint	0.00%	0.00%
Oil/Oil Filters	0.00%	0.00%
Other HHW	0.15%	0.01%
Total HHW	**0.15%**	**0.01%**
Special Waste	**0.00%**	**0.04%**

APPENDIX D-4

Waste Composition at Old Salisbury Road C & D Landfill

Description	Fraction
Corrugated & Kraft	**0.7%**
Newspaper	**0.0%**
Office Paper	**0.0%**
Other Mixed Paper	**0.1%**
Total Paper	**0.8%**
Clear Bottles/Containers	**0.0%**
Colored Bottles/Containers	**0.0%**
Flat Glass	**0.0%**
Other/Mixed Glass	**0.0%**
Total Glass	**0.0%**
Ferrous	**0.5%**
Non-Ferrous	**0.0%**
Other/Mixed Metals	**0.0%**
Total Metals	**0.5%**
Containers	**0.0%**
Film	**0.0%**
Other/Mixed Plastics	**0.1%**
Total Plastics	**0.1%**
Food Waste	**0.0%**
Landscape & Agricultural	**0.2%**
Wood	**24.0%**
Other/Mixed Organics	**0.1%**
Total Organics	**24.3%**
Concrete	**11.5%**
Asphalt Paving	**2.5%**
Asphalt Roofing Materials	**1.0%**
Gypsum Board	**2.1%**
Rock, Soil, Fines	**48.3%**
Other/Mixed Inorganics	**8.4%**
Total Inorganics	**73.7%**
HHW	**0.0%**
Special Waste	**0.0%**
Bagged Mixed Waste	**0.6%**
TOTAL	**100.0%**

APPENDIX E-1

Previously established FY 2005-2006 waste reduction goal **5 %**

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 **X**

If Yes, what is the revised FY 2005-06 waste reduction goal? _____ %

Establish a new FY 2012-2013 waste reduction goal **-15 %**

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 **1989-1990** (FY 1991-1992 unless alternate approved by Section)	**1.34**	**1.34**
2. Percent waste reduction goal	**+ 5 %**	**- 15 %**
2. Targeted per capita disposal rate (Subtract line 2 from 1.0 and multiply result by line 1)	**1.41**	**1.14**
4. Estimated population for July 2006 and July 2013 (available at http://www.osbm/state.nc.us/osbm/index.html)	**330,041**	**357,526**
5. Projected tonnage for disposal at baseline disposal rate (Multiply line 1 by line 4)	**442,255**	**479,085**
6. Targeted annual tonnage for disposal (Multiply line 3 by line 4)	**465,358**	**407,580**
7. Targeted annual tonnage to reduce (Subtract line 6 from line 5)	**+ 23,103**	**- 71,505**

APPENDIX E-2

Extended Solid Waste Planning Data

Fiscal Year	Projected Population[1]	Projected Waste Generation[2]	Waste Disposal Goals		Projected Waste Reduction			Waste Reduction Goals	Goal Surplus/ (Deficit)
		(Tons/Yr)	Per Capita[3]	Tons/Yr	Recycling[4]	Composting[5]	Total	Tons/Yr	Tons/Yr
2001 - 2002	310,908	526,973	1.47	456,989	22,341	47,504	69,845	69,984	(139)
2002 - 2003	314,745	533,477	1.47	462,629	22,617	48,090	70,707	70,848	(141)
2003 - 2004	318,563	539,948	1.47	468,241	22,891	48,673	71,565	71,707	(143)
2004 - 2005	322,414	546,475	1.47	473,901	23,168	49,262	72,430	72,574	(145)
2005 - 2006	326,269	553,010	1.41	460,039	23,445	49,851	73,296	92,970	(19,675)
2006 - 2007	330,041	559,403	1.41	465,358	23,716	50,427	74,143	94,045	(19,902)
2007 - 2008	333,911	565,962	1.41	470,815	23,994	51,019	75,012	95,148	(20,135)
2008 - 2009	337,896	572,717	1.41	476,433	24,280	51,627	75,908	96,283	(20,376)
2009 - 2010	342,027	579,719	1.21	413,853	24,577	52,259	76,836	165,866	(89,030)
2010 - 2011	346,160	586,724	1.21	418,854	24,874	52,890	77,764	167,870	(90,106)
2011 - 2012	349,912	593,083	1.21	423,394	25,144	53,463	78,607	169,690	(91,083)
2012 - 2013	353,691	599,488	1.14	403,208	25,415	54,041	79,456	196,281	(116,825)
2013 - 2014	357,526	605,989	1.14	407,580	25,691	54,627	80,317	198,409	(118,091)
2014 - 2015	361,462	612,660	1.14	412,067	25,974	55,228	81,202	200,593	(119,391)
2015 - 2016	365,435	619,394	1.14	416,596	26,259	55,835	82,094	202,798	(120,704)
2016 - 2017	369,321	625,980	1.14	421,026	26,538	56,429	82,967	204,955	(121,987)
2017 - 2018	373,321	632,760	1.14	425,586	26,826	57,040	83,866	207,174	(123,309)
2018 - 2019	377,472	639,796	1.14	430,318	27,124	57,674	84,798	209,478	(124,680)
2019 - 2020	381,751	647,049	1.14	435,196	27,432	58,328	85,760	211,853	(126,093)

Notes:

1 Population projection data obtained from North Carolina Office of State Planning website.

2 Projected waste generation is estimated by multiplying the projected population by the average per capita generation rate.
Current average per capita generation rate is 1.69

3 Current average per capita disposal rates are used for years 2001-2004.
Current average per capita disposal rate is 1.47

Forsyth County has adopted the following waste reduction goals:

Year	Per Cap Gen. Rate	Per Cap Disp. Rate Goal	Diversion Goal % Base Year Disposal Rate
1988/89 (base yr.	?	1.34	0.0%
2005/6	1.69	**1.41**	-5.0%
2009/10	1.69	**1.21**	10.0%
2012/13	1.69	**1.14**	15.0%

4 Projected recycling amounts are estimated by multiplying the projected population by the average per capita recycling rate.
Current average per capita recycling rate is 0.07

5 Projected composting amounts are estimated by multiplying the projected population by the average per capita composting rate.
Current average per capita composting rate is 0.15

APPENDIX F

Characteristics of Waste Collection and Recycling Programs by Jurisdiction

	Bethania	Clemmons	Kernersville	Lewisville	Rural Hall	Tobaccoville	Walkertown	Winston-Salem	Forsyth Co.
Residential Curbside Recycling	Contract w/Kiser, weekly	Contract w/WM, weekly	Contract w/WM, weekly	Contract w/WM, weekly	Contract w/WM, weekly	Contract w/Kiser, weekly	Discontinued 7/2002	Contract w/WM, weekly	none
Drop-Off Recycling	none	none	none	none	none	none	none	9 OCC sites	HMRLF & 2 centers
Special Waste Programs	none	none	e-recycling 1x annually	3 R-day collection days/ year	none	none	none	used oil, permanent HHW site	used oil
Commercial Waste Recycling	private	private	private	private	private	private	private	Contract w/Wm, private	private
Bulky Item Collection	none	1X/yr.; munic. staff	none	@ R-day events, 3X/year	1X/week	1X/yr. assist. from Clemmons	none	1X/yr.; munic. staff	none
Leaf and Limb Collection	none	yes	yes, Xmas trees	none, Xmas trees	yes, Xmas trees, pallets	none	none	yes, Xmas trees	yes, Xmas trees, pallets
Resid. Waste Collection (1x Week)	Kiser	Contract w/WM	munic. staff	Contract w/WM	Contract w/WM	Contract w/Kiser	private contractor	munic. staff	private
Commercial Waste Collection	private	private	munic. Staff, private	private	private	private, 90 gal/wk paid for by Village	private	munic. Staff, private	private
Industrial Waste Collection	private	private	private	private	private	private	private	private	private

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APPENDIX G

Recycling Tonnages by Material Type by Forsyth County Jurisdiction – FY 2001-02

	Bethania	Clemmons	Kernersville	Lewisville CS/R-Day	Rural Hall	Tobaccoville[1]	Walkertown	Winston-Salem CS/DO	ForsythCo. DO Only
Glass Containers	2.88	163.04	113.14	119.19/0.90	18.78	23.28	24.43	730.13	169.67
PETE Bottles	0.62	50.90	18.19	18.22/0.21	2.85	4.07	3.34	327.28	
HDPE Bottles	0.87	23.02	30.82	23.85/0.28	4.75	6.40	9.84	199.66	
Mixed Plastic									49.34
Al Cans	0.48	31.04	11.98	12.01/0.18	1.91	2.91	2.50	141.92	9.89
Steel Cans	0.89	32.66	19.31	23.60/0.27	3.81	5.23	7.55	269.75	22.45
White Goods									2,146.53
Other Metal									
ONP	15.69	314.67	423.82	352.49/6.21	56.23		91.36	6,004.85	485.77
OCC		31.30		5.70/8.15				53.85/233.68	156.41
OMG		59.84	27.01	22.12/7.23	4.69			303.42	
Office Paper								51.08	
Mixed Paper		32.80	19.45			74.52		555.95	348.38
Other Paper									
Commingled Items				0.0/0.99					
Total Recycled	**21.43**	**739.27**	**663.72**	**577.18/24.42**	**93.02**	**116.41**	**139.02**	**8,637.89/233.68**	**3,388.74**

NOTES:
CS = Curbside Program.
DO = Drop-Off Program.
R-DAY = Lewisville exclusive one-day recycling event, 3X annually.
1. FY 2000-01 data; new service provider developing record keeping to report data next year.

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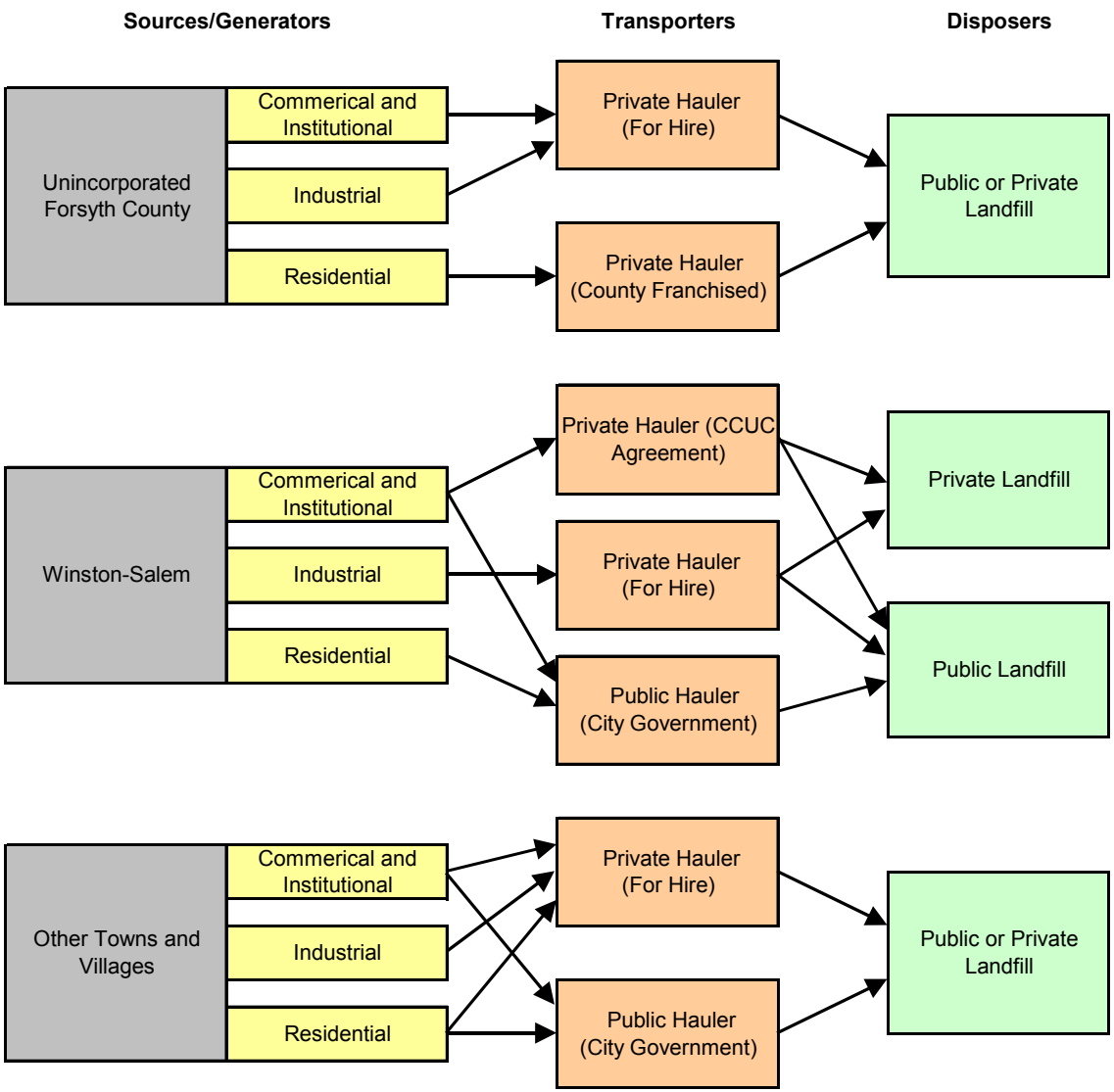
APPENDIX H

Flow of Disposed Waste from Forsyth County Generators