

**SULLIVAN COUNTY REGIONAL SOLID WASTE MANAGEMENT PLAN**

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# **EXECUTIVE SUMMARY**

## **Sullivan County Regional Solid Waste Plan**

### **DESCRIPTION AND REGIONAL FORMATION**

Sullivan County is located within the First Tennessee Development District and consists of three incorporated municipalities. These are Kingsport, Bristol, and Bluff City. The County seat is located in Blountville. The County has 413 square miles of land and an estimated 1993 population of 143,596.

Sullivan County elected to form a single county region because of its commitment to permitting and operating a Class I landfill in a manner which is consistent with state and federal regulations. The County produces approximately 400 tons/day of municipal solid waste, and county officials feel that this amount of solid waste will allow the County to economically operate the landfill.

### **CURRENT SOLID WASTE MANAGEMENT CONDITIONS**

In 1993 Sullivan County will dispose of nearly 97,000 tons of solid waste at the Sullivan County Landfill, Inc., a privately owned facility. This represents a 15% reduction from the 1989 base year volume determined by the University of Tennessee.

Several strategies are being utilized to reduce the amount of solid waste going to the Class I facility. These strategies include composting, recycling, and diversion. Sullivan County operates 10 permanent drop-off recycling locations throughout the County. This county-wide recycling program began in 1991 and currently is being supervised by a full-time Recycling Coordinator. The City of Bristol is involved in co-composting of brush, and incineration of leaves collected through its yard waste collection program. Kingsport is operating a brush composting facility and is currently landfilling leaves in a landscape debris landfill. Table ES-1 shows the amount of solid waste being managed by each strategy in 1993.

**Table ES-1**

**Tons**

	<b>Recycling</b>	<b>Composting</b>	<b>Diversion</b>
<b>Bristol</b>	300	7,150	1,770
<b>Kingsport</b>	1,571		
<b>Sullivan County</b>	1,434		

Planning Board members have estimated that approximately 10% of the materials currently being disposed on in the Class I facility can be diverted to a Class IV landfill.

Sullivan County and its municipalities initiated waste reduction strategies several years ago. As a result of this foresight approximately 23,000 tons of materials has been diverted since 1989. The County is in the final stages of permitting a county owned and operated Class I landfill which will allow the county to initiate further waste reduction strategies such as diversion and regulatory bans if necessary.

There are two construction/demolition landfills located in Bristol and Kingsport. The County does not have any municipal solid waste incinerators or municipal solid waste composting facilities. However there is one waste processing facility operated by Waste Management, Inc. Recyclables are collected, sorted, stored , and marketed at this facility.

## **REGIONAL NEEDS**

### *Recycling*

The Sullivan County Solid Waste Planning Board has identified two regional needs in the area of recycling. The first of these is to place drop-off collection boxes at each of the county school cafeterias. Although these are drop-off locations and may be used by the public, the County is mainly concerned that each cafeteria have a drop-off box for cardboard and tin cans. These are two of the most recyclable products at school cafeterias.

The second need addressed by the Planning Board is to continue to broaden the scope of recycling services offered to the people of Sullivan County. Continually searching for permanent drop-off locations throughout the County and increased recycling efforts within the cities of Bristol and Kingsport are two ways in which the Planning Board feels the County can broaden recycling services.

## *Composting*

Sullivan County currently has two organized composting operations. These are operated by Bristol and Kingsport. Through the efforts of these cities and their composting facilities, the County is operating at the 7% composting waste reduction goal established by the Planning Board.

Composting is the only "natural" waste reduction process in use. This strategy of waste reduction can be utilized by every resident and has several environmental benefits to the people of Sullivan County. Although there are no regional composting needs identified by the Planning Board, expansion of current operations or increased household composting should always be given consideration.

## *Disposal Capacity*

Current landfill capacity at the Sullivan County Landfill, Inc. is expected to be reached in March of 1994 and the landfill is set for closure on March 18, 1994. This date is still pending due to ongoing negotiations between the owner and the State of Tennessee. The landfill is called the Sullivan County Landfill, Inc. but is operated by a private company. Sullivan County is not involved in any of the day to day operations. The County is merely a customer in the landfill.

10 year disposal capacity is an important regional need addressed by the Solid Waste Management Plan. The County is pursuing two options with regard to 10 year disposal capacity. First the County is seeking to permit a Class I landfill which will be owned and operated by the County. As of March 1, 1994 the County is in the final stages of responding to the State's requests to perfect the landfill design and develop computer models addressing "worst case scenarios". If permitted, the new Sullivan County Landfill will have a Class IV site for construction/demolition wastes, a storage area for waste tires, waste oil, and lead batteries, a 20-40-year life span, and approximately 3,000,000 tons of capacity.

The second option available to the County is two transport waste to another landfill outside the County. Transporting waste outside the County will be necessary for a short period of time regardless of whether the County is allowed to construct a new facility. However Sullivan County is fortunate to have several Class I landfills within reasonable distance from the transfer stations (Table ES-2).

County officials are dedicated to transporting solid waste to another landfill at the lowest possible cost to the County. Tipping fees stated in Table ES-2 are subject to change based on contract negotiations between the County and landfill owners.

Sullivan County will have assurance of 10 year disposal capacity before the approval of the solid waste plan. Planning Board members have obtained information from these landfill owners stating that they have disposal capacity and are willing to enter into negotiations with Sullivan County.

**Table ES-2**

<b>Facility</b>	<b>Distance From Bristol Kingspt (miles)</b>		<b>Tipping Fee</b>	<b>Projected Lifespan</b>
<b>Hawkins County Landfill</b>	45	20	N/A	16 million air space yards in 1993.
<b>Bristol, VA</b>	5	23	\$25.50 as of 1/1/94	Existing landfill is open. New landfill is slated for opening in July 1996.
<b>Iris Glen Environmental Center Johnson City, TN</b>	26	35	N/A	Slated to open in Oct. 1994 with a 20 year lifespan.

*Public Education*

Sullivan County is fortunate to have several non-profit environmental organizations operating locally. The County also has a full-time Litter/Recycling Coordinator whose main responsibility is public education. Public schools, civic organizations, businesses and industries are the main targets for the Coordinator to present solid waste education.

The Solid Waste Planning Board has identified four areas in which the County will increase the efforts of public education. These areas are:

## **Increase Industrial Waste Reduction Education**

This is a regional need in Sullivan County that will be addressed for the next ten years. Sullivan County has several large industries that are responsible for a considerable amount of waste being disposed of in the Class I landfill. Approximately 30% of the waste generated in Sullivan County is from industrial sources. Demonstrating to industry representatives, through industrial waste reduction seminars, the environmental and economic benefits of waste reduction, the County can reduce the amount of waste going to the Class I landfill by 2%.

## **Implementing Solid Waste Management as School Curriculum**

Any significant waste reduction to take place in Tennessee in the next ten years will be the result of educating today's students. A standardized curriculum package to be used in all Sullivan County public schools is necessary to ensure that each student is receiving a proper education about solid waste issues.

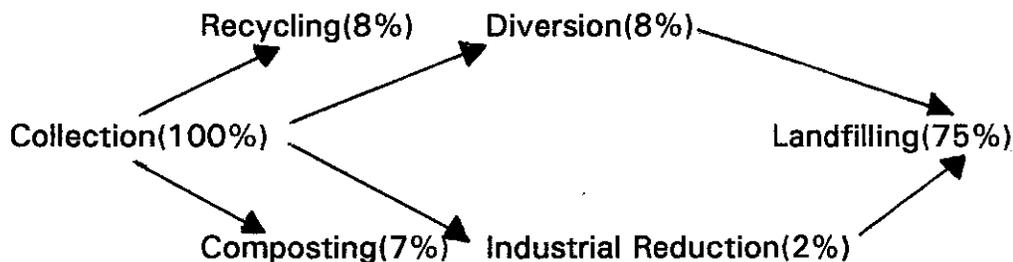
A curriculum package addressing recycling, solid waste reduction, proper management of household hazardous wastes, and management of special wastes would be necessary in all public schools.

## **Increased Media Coverage of Recycling Initiatives and Educational Programs**

Sullivan County Planning Board members have identified greater media coverage as one of the most important issues concerning public education. This need is a difficult one to meet as part of the solid waste plan, however County officials are continuously pursuing ideas that would generate more involvement from the press.

All of the new programs being implemented as part of the solid waste plan are being integrated with existing programs. Aside from permitting a new Class I landfill, Sullivan County is not proposing any new facilities to meet the Solid Waste Management Act of 1991. Regional needs addressed by the Planning Board mainly involve increasing the efforts of already existing programs.

### **SYSTEM ELEMENTS**



Implementation Schedule

Table ES-3

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
<b>Begin Educational Programs</b>										
<b>Consider Door-to-Door Recycling Collection in Bristol</b>										
<b>Regional Maintenance of Recycling Programs</b>										
<b>Continue Class 1 Landfill Development</b>										
<b>Initial Industrial Reduction Seminar</b>										
<b>Place Collection Boxes at School Cafeterias</b>										
<b>Consider Standardized Curriculum Package</b>										
<b>Begin Storing Batteries, waste Oil, and Whole Tires at Approved Storage Sites</b>										
<b>Household Hazardous Waste Collection</b>										

## **ALLOCATION OF RESPONSIBILITIES**

The Sullivan County Commission will serve as the "authority" in implementation, budgeting, staffing, etc. for programs initiated within the County. City Commissions of Bristol, Kingsport, and Bluff City will have "authority" in implementation, budgeting, staffing, etc. for program initiated within these cities.

Responsibilities of operating the proposed programs are with the respective entities currently operating the programs. However, As required by the Solid Waste Management Act of 1991 the Region will act as one entity in the implementation of proposed programs for Sullivan County.

The Regional Solid Waste Planning Board will review all permit applications for solid waste disposal facilities, incinerators, etc. After reviewing each permit application the Board will provide the County Commission with a recommendation on the permit application. After public hearings are held on the permit application, the Department of Environment and Conservation will give final approval or disapproval of the permit application.

If Sullivan County receives a permit to construct a Class I landfill, the County will not control waste flow originating within the county boundaries. However the County will initiate flow control from waste originating outside of the County.

Table ES-4

Expenditures	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Waste Collection	\$3,167,376	\$3,325,744	\$3,492,031	\$3,666,632	\$3,849,963	\$4,042,461	\$4,244,584	\$4,456,813	\$4,679,653	\$4,913,635
Transfer Stations and Transport	\$1,438,696	\$1,510,630	\$1,586,161	\$1,665,469	\$1,748,742	\$1,836,179	\$1,927,987	\$2,024,386	\$2,125,605	\$2,231,885
Cost of Disposal	\$1,600,000	\$1,788,742	\$1,787,631	\$1,786,665	\$1,785,651	\$1,784,685	\$1,783,815	\$1,778,357	\$1,773,406	\$1,768,069
Recycling	\$563,343	\$591,510	\$621,085	\$652,139	\$684,745	\$718,980	\$754,927	\$792,672	\$832,306	\$873,921
Composting	\$194,890	\$204,634	\$214,865	\$225,108	\$236,358	\$248,170	\$255,578	\$268,356	\$281,773	\$295,861

A Consumer Price Index/Inflation rate of 5% was used.

Table ES-5

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Revenue										
Recycling Rebate	\$20,382	\$20,382	\$20,382	\$20,382	\$20,382	\$20,382	\$20,382	\$20,382	\$20,382	\$20,382
Tipping Fees	\$1,740,192	\$1,629,496	\$1,480,440	\$1,479,640	\$1,478,800	\$1,478,000	\$1,472,280	\$1,472,760	\$1,468,660	\$1,464,240
Sale of Recyclables	\$102,827	\$102,827	\$102,827	\$102,827	\$102,827	\$102,827	\$102,827	\$102,827	\$102,827	\$102,827
Commercial Garbage Pick-up	\$612,104	\$642,709	\$674,844	\$708,586	\$744,015	\$781,253	\$820,315	\$861,330	\$904,396	\$949,615
Residential Garbage Pick-up	\$517,996	\$543,895	\$571,089	\$599,643	\$629,625	\$543,895	\$571,089	\$599,643	\$629,625	\$661,106
Transfer from General Funds	\$1,666,190	\$1,666,910	\$1,666,190	\$1,666,910	\$1,666,190	\$1,666,190	\$1,666,190	\$1,666,190	\$1,666,190	\$1,666,190

# **CHAPTER 1**

## **Description of the Municipal Solid Waste Region**

### **GENERAL DESCRIPTION**

Sullivan County has elected to form a single county planning region. The County consists of three incorporated municipalities.

Kingsport (pop. 36,365)

Bristol (pop. 23,421)

Bluff City (pop. 1,390)

Blountville - county seat (pop. 2,613)

The Region encompasses an area of 413 square miles and has a total population of 143,596. The Region is located within the First Tennessee Development District, and has utilized the Development District in regional organization and planning efforts.

### **RATIONALE FOR REGIONAL FORMATION**

Sullivan County and the municipalities within its boundary produce approximately 400 tons of municipal solid waste per day. The County is in the process of permitting a Class I landfill. If the landfill permit is approved, county administrators feel that the County has the personnel, tonnage, and ability to economically operate the landfill.

Sullivan County is dedicated to operating the proposed landfill in a manner which is consistent with state and federal regulations.

## **INSTITUTIONAL STRUCTURE**

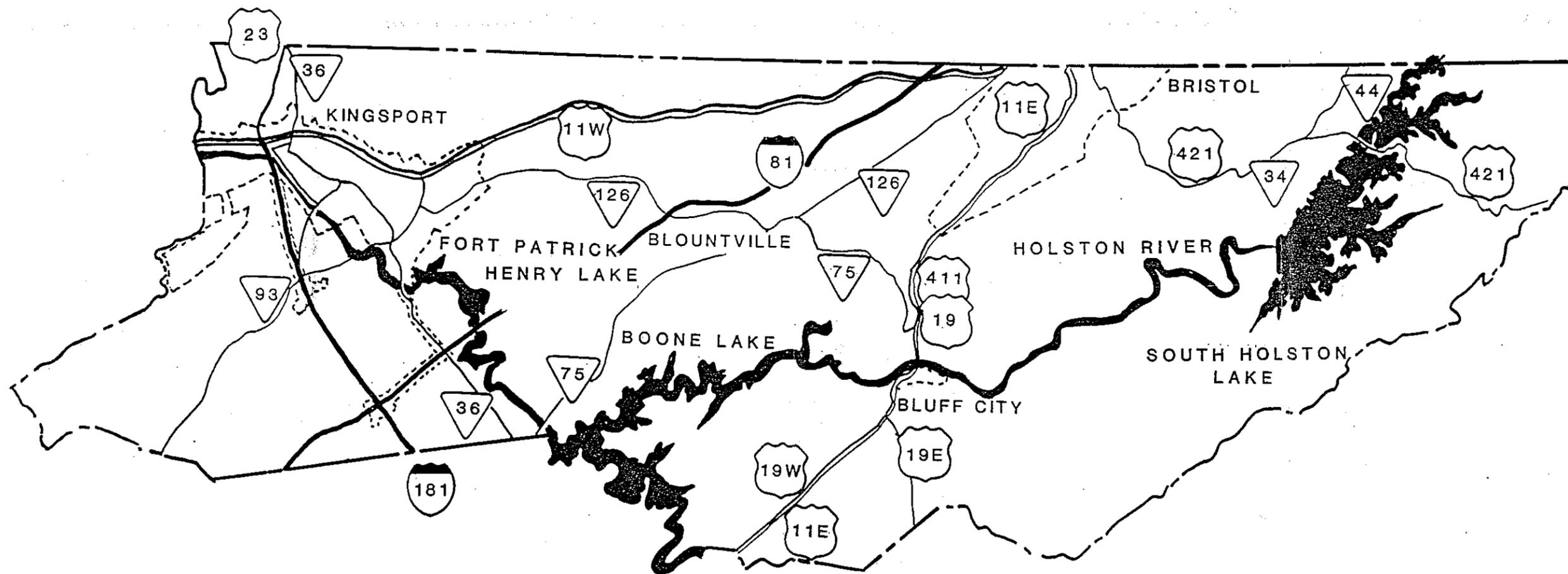
Members of the Sullivan County Regional Solid Waste Planning Board include:

	<b>Representing</b>	<b>Term</b>
1. Frank Clifton Bristol City Manager	Bristol	4 years
2. B.R. Wilkerson Director of Public Works City of Kingsport	Kingsport	4 years
3. Charles Cowan Mayor	Bluff City	4 years
4. Roy Settle Soil Conservation Service District Conservationist	Sullivan County	6 years
5. Leah Ross - Chair Waste Resource Manager Bristol Regional Medical Center	Sullivan County	2 years
6. Jack Hurlbert - Vice-Chair Consulting Engineer	Sullivan County	6 years
7. Joe Yarbrough - Secretary County Engineer	Sullivan County	2 years

The Board held its first organizational meeting on January 25, 1993 and elected to meet the fourth Monday of each month at the Sullivan County Courthouse in Blountville, Tennessee.

The matrix of the Board was chosen to expound on the knowledge of several different entities within the County. Industry, county and city governments, and small businesses are all represented on the Board. The Board welcomes and appreciates public involvement in all open meetings. The regional advisory board consists of eight members of the Sullivan County community. These members include engineers, environmental professionals, and government officials. The public is invited to all meetings of the Planning Board. The meetings are publicized in the newspaper and are always adequately represented by the media.

# Regional Base Map SULLIVAN COUNTY



## DEMOGRAPHICS

According to the Department of Sociology at the University of Tennessee<sup>1</sup>, the projected population for the Region in 1993 is 142,849. The average population density is projected to be 346/sq. mile.

This same source projects the population of Sullivan County to decrease over the next 10 years. The projected decline in population of the Region is not expected to have a significant effect on the overall waste generation of the Region.

Future demographic trends also do not appear to have a significant effect on waste generation rates.

<sup>1</sup>The Department of Sociology, University of Tennessee. Provided and adjusted by The Division of Information Resources, TDH.

### CHAPTER I: FORMS

#### A. REGIONAL SUMMARY: DEMOGRAPHICS

1. Name of Region: Sullivan County Solid Waste Region
2. Regional Population: 143,596
3. Regional Area 413 square miles
4. Population and Population Density

Table I-1

County	Area(Sq.Miles)	Population	Avg. Density Pop./Sq.Miles
Sullivan	413	143,596	348
<b>Regional Total</b>	413	143,596	348

Source: 1990 US Census

**7. Distribution of Regional Population by Education (Age  $\geq$  25)**

**\*Table I-4**

	<b>Number</b>	
<b>Less than 9<sup>th</sup> Grade</b>	16,688	17.1
<b>Grades 9<sup>th</sup> - 12<sup>th</sup> (No Diploma)</b>	15,673	16.1
<b>High School Graduates</b>	30,267	31.0
<b>College (1-4) and Graduates</b>	30,260	31.0
<b>Post Graduate/Professional (&gt; 4)</b>	4,629	4.7
<b>Regional Total</b>	<b>97,517</b>	<b>99.9</b>

Source: 1990 US Census

**8. Total Number of Households in Region 56,729**

Source: 1990 US Census

## 9. Distribution by Type of Housing and Occupancy

Table I-5

	Total Units	Occupied	Owner	Rented
<b>Single Family 1, Detached</b>	43,247	41,093	35,791	5,302
1, Attached	1,071	977	642	335
<b>Multi-Family 2</b>	1,291	1,143	202	941
3-4	1,753	1,527	120	1,407
5-9	2,209	2,206	165	1,861
10-19	1,934	1,750	40	1,710
20-49	390	356	33	323
50 or More	533	503	0	503
Institutional				
Mobile Home/Trailer	7,669	6,911	5,268	1,643
Other	526	443	269	174
<b>Regional Total</b>	<b>60,623</b>	<b>56,729</b>	<b>42,530</b>	<b>14,199</b>

Source: 1990 US Census CH 1-44

## 10. Regional Population Projections 1994-2003

Table I-6

Regional Population 1990 143,596

County	1994	1995	1996	1997	1998
Sullivan	142,594	142,367	142,106	141,857	141,604
<b>Regional Total</b>	142,594	142,367	142,106	141,857	141,604

County	1999	2000	2001	2002	2003
Sullivan	141,353	141,104	140,461	139,810	139,166
<b>Regional Total</b>	141,353	141,104	140,461	139,810	139,166

Source: UT Department of Sociology

## ECONOMIC ACTIVITY

There are two major proposed construction activities that could increase the amount of waste generated in the Region. These are a 250 room hotel and adjoining regional convention center. The convention center is proposed to be a regional center to be used for trade shows, concerts, conventions, etc. This type of complex in the Region could significantly increase tourism thus increasing the amount of waste generated.

Another economic activity indicator addressed was the issuance of building permits in Sullivan County. The number of building permits issued in the County through September 1993 was nearly double the number issued in all of 1992. The increase in building permits between 1992 and September 1993 indicates an increase in economic activity which also indicates an increase in construction/demolition waste to be landfilled.

The completion of I-26 in East Tennessee could increase the flow of traffic in the Region subsequently increasing economic development. An increase in economic development is most certain to increase waste generated.

### 1. Basic Economic Information, for each County, and the Region in 1991.

Table I-7

County	Pop.	MSA County yes/no	Total Employed	Total Earnings	Per Capita Income	% Pop. Below Poverty Line
Sullivan	143,596	yes	65,494	833 million	12,725	13.6
<b>Regional Total</b>	143,596	yes	65,494	833 million	12,725	13.6

**2. Non-Agricultural Employment, by Sector, in 1993 64,767**

Source: 1990 US Census

**Table I-8**

**% of Total Employment**

<b>County</b>	<b>Manufac- turing</b>	<b>Const.</b>	<b>Trade</b>	<b>Finance</b>	<b>Service</b>	<b>Gov't</b>	<b>Transport. Public Utilities</b>
Sullivan	18,749	4,417	15,586	2,667	17,488	1,797	3,732
<b>Regional Total</b>	18,749	4,417	15,586	2,667	17,488	1,797	3,732
<b>%</b>	28.6	6.7	23.8	4.1	26.7	2.7	5.7

Source: 1990 US Census

**3. Total Agricultural Employment in 1990 727**

**Table I-9**

**Agricultural Employees**

<b>County</b>	<b>Employment</b>
Sullivan	727
<b>Regional Total</b>	727

Source: 1990 US Census

4. Prepare a regional summary of major generators of commercial and non-hazardous industrial waste in 1991. Use data from Table II-2 in County Economic Activity Profiles in District Needs Assessment, or data collected subsequently for the regional plan. State size criteria applied in each county (i.e., all generators > 100 employees, all generators > 50 employees, etc.)

Table I-10

County	Screening Criteria Applied	Number of Generators	Estimated Total Quantity of Waste
Sullivan	≥ 100 employees	29	4925 tons/yr 14587 yd <sup>3</sup> /yr
<b>Regional Total</b>		29	4925 tons/yr 14587 yd <sup>3</sup> /yr

Source: Survey response of industries in the region.

5. Prepare a Regional summary of institutions housing more than 100 persons.

Table I-11

County	Total Number of Institutions	Total Number of Students, Prisoners, or Residents	Estimated Quantity of Waste Generated
Sullivan	7	2,147	1,438 tons/yr
<b>Regional Total</b>	7	2,147	1,438 tons/yr

Source: 1990 US Census CP-144

6. Provide summary data on major health care facilities (larger than 50 beds), (hospitals, nursing homes) in the region.

Table I-12

Infectious Waste Mngt.

County	No. of Facilities	No. of Beds	OnSite/ OffSite	Type Treatment	Est. Quantity of Solid Waste Generated
Sullivan	7	1740	2 OnSite	Microwave/ Incineration	1,500 tons per year
<b>Regional Total</b>	7	1740	2 OnSite		1,500 tons per year

7. Sources of local revenue utilized in the region. Check all relevant boxes.

Table I-13

County	Property Tax	Local Sales Tax	Wheel Tax	Local Waste Collection Fee	User Fee/ Tipping Fee	Other*
Sullivan	X	X		X	X	
<b>Regional Total</b>						

8. Provide the following data for fiscal 1990.

Table I-14

County	Total Assessed Prop. Value	Total Prop. Tax Reven.	<sup>1</sup> Total Sales Subject to Sales Tax	Total Local Sales Tax Revenue	<sup>2</sup> Number Registered Vehicles	Total Wheel Tax Revenue
Sullivan	1.33 bil	44.7 mil	1.2 bil	10.5 mil	130,442	

Sources: 1991 State and Local Government Survey, Tennessee Association of Business.

<sup>1</sup>Bureau of Business and Economic Research, East Tennessee State University.

<sup>2</sup>Tennessee Department of Registration and Titles

## CHAPTER II

### Analysis of the Current Solid Waste Management System for the Region.

#### WASTE STREAM CHARACTERIZATION

The information collected for this chapter is found in the District Needs Assessment. Tables II-1 thru II-9 are a reaggregation of the data in the needs assessment.

#### 1. Quantity of Solid Waste Received for Disposal/Incineration in Calendar 1991

Table II-1

County	Tons Disposed	Population (1991)	Waste Disposed Per Capita
Sullivan	96,684	*143,353	0.67 tons
<b>Regional Total</b>	<b>96,684</b>	<b>*143,353</b>	<b>0.67 tons</b>

Source: UT Department of Sociology

#### 2. Origin of Regional Solid Waste in 1991

Table II-2

County	Residential	Institutional/Commercial	Non-Hazardous Industrial	Special	Other
Sullivan	35,773 T	31,906 T	29,005 T	-	-
<b>Regional Total</b>	<b>35,773 T</b>	<b>31,906 T</b>	<b>29,005 T</b>	<b>-</b>	<b>-</b>

### 3. Acceptance of Certain Categories of Solid Waste for Disposal or Incineration

Table II-3

County/ Facility	Yard Waste Clippings- Leaves-Grass		Sewage Sludge		Construction/De- molition		Tires		White Goods	
	Y/N	Qty	Y/N	Qty	Y/N	Qty	Y/N	Qty	Y/N	Qty
Sullivan	Y	500 T	N		Y	500 T	N		Y	Recyc.
<b>Regional Total</b>		500 T		--		500 T		--		--

\* White Goods - discarded major appliances, such as refrigerators, ranges, etc.

### 4. Description of the Waste Stream by Materials

Table II-4

<u>Waste Category</u>	<u>National %</u>	<u>Calculated Regional Tons</u>
Paper & Cardboard	40.0	38,674
Glass	7.0	6,768
Ferrous Metals	6.5	6,284
Aluminum	1.4	1,354
Other Non-Ferrous Metals	0.6	580
Plastics	8.0	7,735
Rubber & Leather	2.5	2,417
Textiles	2.1	2,030
Wood	3.6	3,481
Food Waste	7.4	7,155
Yard Waste	17.6	17,016
Misc. Inorganic Waste	1.5	1,450
Other	1.7	1,644
<b>TOTAL MUNICIPAL SOLID WASTE</b>	<b>100.0</b>	

## 5. Unmanaged Waste\*

Table II-5

<b>County</b>	<b>Potential Waste Generation 1991 tpy</b>	<b>Actual Waste Disposed 1991 tpy</b>	<b>Unmanaged Waste 1991 (potential-actual) tpy</b>	<b>Percent of Potential Total</b>
Sullivan	157,238	96,684	60,554	39%
<b>Regional Total</b>	157,238	96,684	60,554	39%

\* Wastes that are "outside" the collection system such as materials in roadside dumps, litter, etc.

## WASTE COLLECTION AND TRANSPORTATION SYSTEMS

The location of all facilities and service areas in the Region are indicated on the regional system map found later in this chapter.

1. The following table contains the number of households served by various means of collection. This table also indicates the number of unserved households within the region.

	<u>Number of Households</u>
Convenience Centers	0
House-to-House	22,975
Green Boxes	0
Direct Commercial/ Contracted Service	33,359
No Service	395

2. List of public house-to-house collectors in the region.

	<u>Number of Households Served</u>
City of Bristol	10,300
City of Bluff City	675
City of Kingsport	12,000

**SOURCE REDUCTION AND RECYCLING SYSTEMS**

The following table contains the location, service area, and type of recycling of each public recycling facility in Sullivan county.

<u>Location</u>	<u>Service Area</u>	<u>Type</u>
City of Kingsport (Kingsport Recycle)	city limits	curbside, commingled
Sullivan County	all county Colonial Heights	drop-off curbside, commingled
	Bluff City	drop-off

The following table contains the location, service area, and type of recycling of each private for-profit recycling facility in Sullivan county.

<u>Location</u>	<u>Service Area</u>	<u>Type</u>
Walmart Stores Inc. (2)*	Kingsport Colonial Heights	drop-off

*\* Walmart stopped collecting recyclables in 1992.*

There is one planned private for-profit recycling facility in the Region.

<u>Company</u>	<u>Service Area</u>	<u>Type</u>
Waste Management	Bristol Parts of Sullivan County	curbside commingled

## 2. Composting

The Bristol Wastewater Treatment Facility and the City of Kingsport are the only composting facilities located in Sullivan county. The Bristol Wastewater Treatment Facility utilizes composting of yard waste and sewage sludge. The Kingsport composting facility composts yard waste.

Operating capacity of the Bristol facility is 14 tons/day and the operating capacity of the Kingsport facility is 15 tons/day.

## 6. Operating and Planned Composting Facilities in the Region

Table II-6

Existing Facilities			Composted Materials		
County	Facility Location	Tons of Waste Processed/Yr	Yard Waste	Sewage Sludge	Solid Waste
Sullivan	Kingsport	3,655 yd <sup>3</sup> /yr	X		
	Bristol	5,110 tons/yr	X	X	

### Planned Facilities

County	Facility Location	Tons of Waste Processed/Yr	Yard Waste	Sewage Sludge	Solid Waste

*There are no planned facilities in the region.*

### 3. Waste-to-Energy/Incineration

### 7. Municipal Solid Waste Incinerators or Waste-to-Energy Facilities in the Region

Table II-7

#### Operating Facilities

County	Facility Location	Design Capacity tons/yr	Current Use tons/yr	Anticipated Operating life of Facility

*There are no Facilities in the Region.*

#### Planned Facilities

County	Facility Location	Design Capacity tons/yr	Current Use tons/yr	Anticipated Operating Life of Facility
			NA	
			NA	

*There are no Planned Facilities in the Region.*

**10. Planned Expansions and Planned New Facilities Which Will Operate for Ten Years or More**

**Table II-10**

<b>County</b>	<b>Expan.</b>	<b>New</b>	<b>Location</b>	<b>When will Cap. be Avail.</b>	<b>Permitted Capacity Sought (acre)</b>	<b>Design Rate Waste Disposed (tpd)</b>	<b>Potent. Expan. yes/no</b>
Sullivan		X	Barger Hollow	20-40 years	320	400	yes
<b>Planned New Reg. Capacity</b>				20-40 years	320	400	

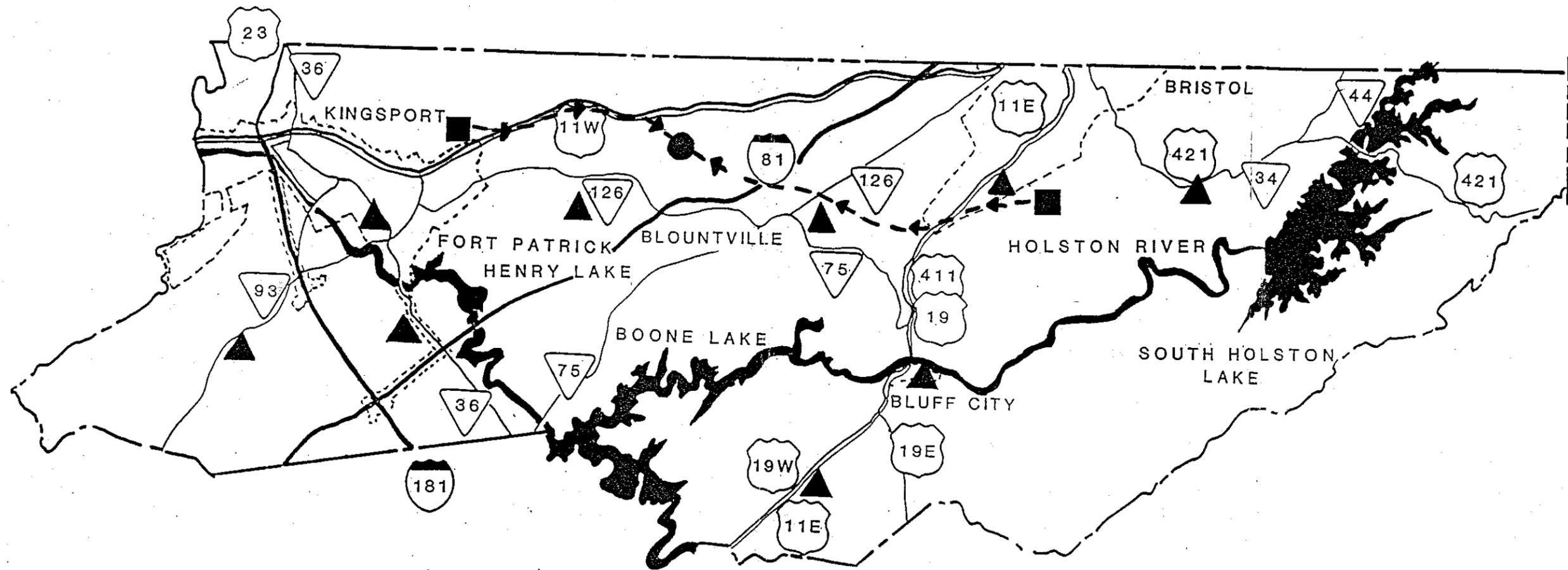
**11. Total Existing and Planned Capacity in the Region at the Close of the Next Ten Years.**

**Table II-11**

**TONS**

<b>Year</b>	<b>Existing</b>	<b>Planned</b>	<b>Total</b>
<b>FY 1993</b>	<b>48,750</b>	<b>3,000,000</b>	<b>3,048,750</b>
<b>FY 1994</b>		<b>2,900,000</b>	<b>2,900,000</b>
<b>FY 1995</b>		<b>2,800,000</b>	<b>2,800,000</b>
<b>FY 1996</b>		<b>2,700,000</b>	<b>2,700,000</b>
<b>FY 1997</b>		<b>2,600,000</b>	<b>2,600,000</b>
<b>FY 1998</b>		<b>2,500,000</b>	<b>2,500,000</b>
<b>FY 1999</b>		<b>2,400,000</b>	<b>2,400,000</b>
<b>FY 2000</b>		<b>2,300,000</b>	<b>2,300,000</b>
<b>FY 2001</b>		<b>2,200,000</b>	<b>2,200,000</b>
<b>FY 2002</b>		<b>2,100,000</b>	<b>2,100,000</b>
<b>FY 2003</b>		<b>2,000,000</b>	<b>2,000,000</b>

# Current Solid Waste Disposal System SULLIVAN COUNTY



- ▲ Recycling Facilities
- Convenience Centers/Transfer Stations
- Sullivan County Landfill
- + Transportation Routes

The Region Has 42 Public Schools

## **DISPOSAL FACILITIES - LANDFILLS AND BALEFILLS**

### **SULLIVAN COUNTY LANDFILL SNL-82-104-0158**

#### **Background**

The Sullivan County Landfill is located on Hunter's Trail off State Road 37, outside of Blountville. The landfill is operated by Sullivan County Inc. It is a Class I facility which accepts waste from Sullivan County, Kingsport, Bristol, Bluff City and all Sullivan County businesses except Tennessee Eastman Company.

The landfill which was permitted in 1979 receives approximately 375 tons of solid waste per day. The landfill began receiving out of state waste on October 1, 1993. It is located 1 mile off of highway 37. The entrance road from highway 37 is made of asphalt and the landfill is surrounded by large growth trees and rolling hills. The landfill is in a secluded area which is not visible from the main highway. Cover material for the landfill is located on-site.

#### **Waste Description**

The landfill receives approximately 37% of its waste from residential sources, 33% from commercial sources, 5% comes from institutions such as schools, hospitals, jails, etc. and 25% of the waste is from industrial non-hazardous sources.

The facility accepts an estimated 500 tons per year of land clearing wastes, brush, leaves or grass clippings. 500 tons per year of demolition wastes are received at the landfill, while 100 tons per year of "special wastes" are disposed of. This facility does not accept waste tires for disposal.

#### **Current Conditions**

The landfill is managed by Eugene Monroe Cross Jr. an employee of Sullivan County Inc. The operating hours are from 6:00 a.m. to 6:00 p.m. Monday thru Friday.

The tipping fee imposed at the facility is \$6.00 per cubic yard or \$22.25 per ton. These rates are charged for all types of waste. County and city trucks, private haulers, and private citizens are all permitted to haul to the facility.

**Future Plans**

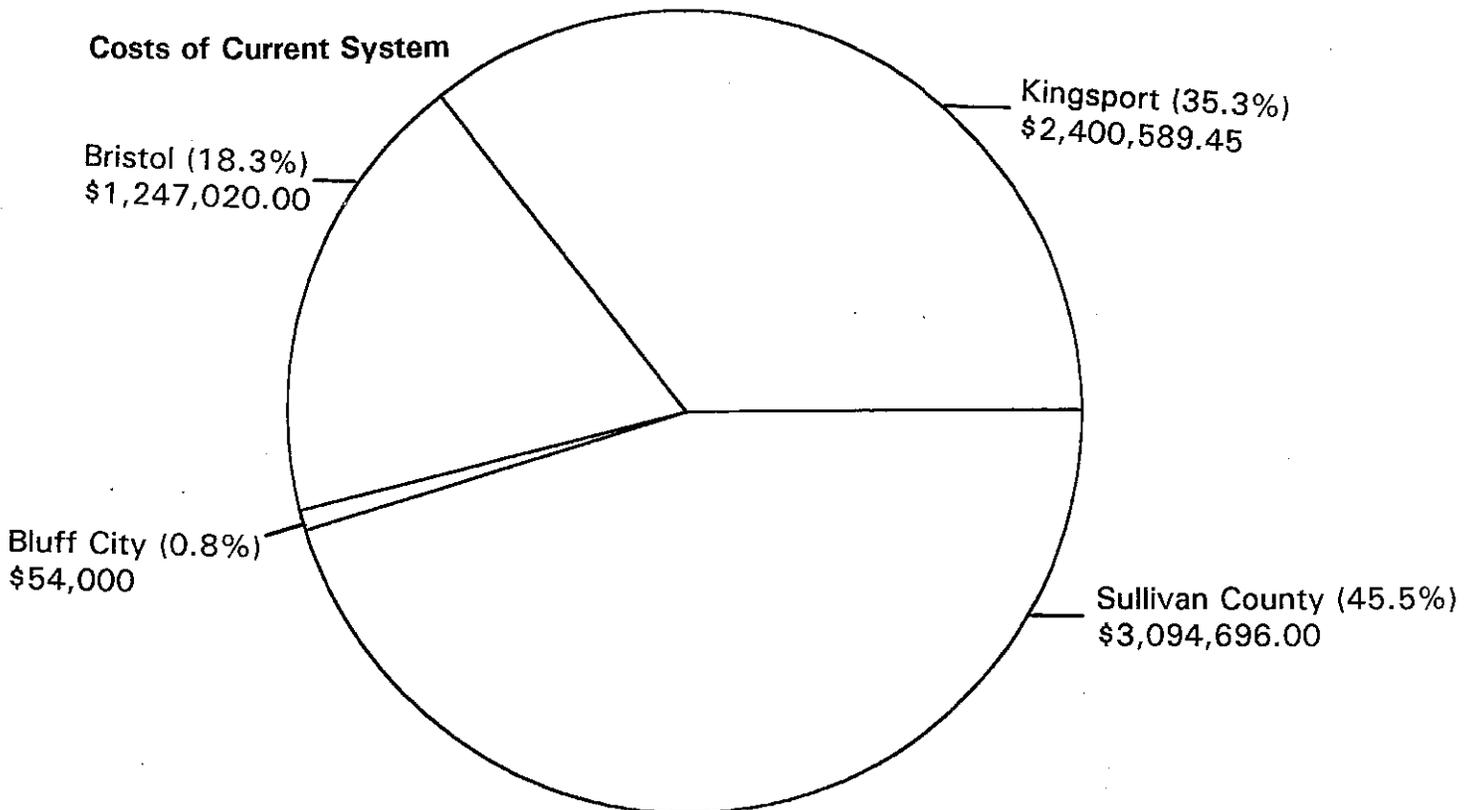
The Sullivan County Landfill is slated for closure in March of 1994 thus leaving a life remaining of 1/2 years. This closure date may be subject to extension.

**Other Disposal Facilities**

Sullivan County contains two Class IV landfills. One is located in Kingsport and the other is in Bristol. Both of these landfills accept demolition materials from Sullivan County.

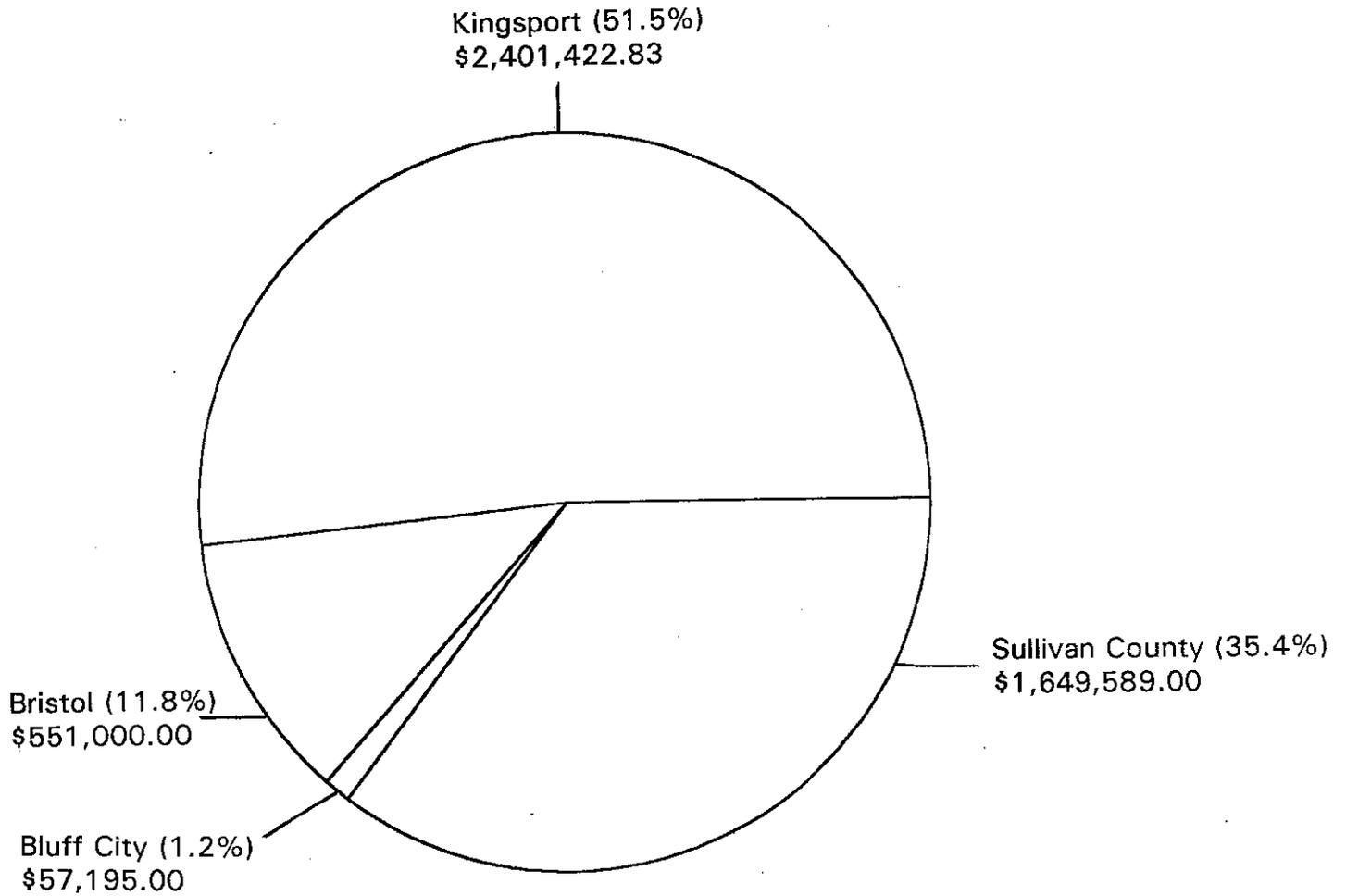
Mead Paper Company operates a landfill in Sullivan County for the disposal of dewatered paper mulch. Mead paper is the only user of this landfill. Eastman Chemical Company also operates a private landfill for the purpose of disposing of ash from an on-site incinerator.

All existing and planned disposal facilities are indicated on the regional system map as required by this chapter.



Costs of the current system include transportation, disposal, collection, processing, and recycling in Kingsport, transportation, disposal, collection, processing, recycling, and composting in Bristol, transportation, disposal, collection, and processing in Bluff City, and transportation, disposal, collection, processing and recycling in Sullivan County.

**Revenues**



Revenues from the current system include recycling rebates, tipping fees, and garbage collection in Bristol, recycling rebates, tipping fees, sale of recyclables, garbage collection, and transfer from general fund in Kingsport, recycling rebate and garbage collection in Bluff City, and recycling rebate, tipping fees, and sale of recyclables in Sullivan County

## **Public Information and Education Programs**

Sullivan County employs a Recycling/Litter Coordinator whose responsibility is concerning public education on the handling, collection, disposal, and marketing of specified materials from the solid waste stream, and reducing litter deposits on roads and streets. The Coordinator regularly meets with school groups, school officials, civic groups, and county officials to discuss improvements in the County's recycling initiatives.

The City of Kingsport has a recycling education program in place entitled Kingsport Recycles. A recycling coalition that exists in the county is Northeast Tennessee Recycling Organization (NETRO). The goal of NETRO is to minimize the volume of waste going to landfills. The group is available to meet with school and civic groups to discuss ways to reduce waste. NETRO also sets up information booths at community gatherings such as Earth Day. The Sullivan County Recycling Commission is established to provide public education on recycling to county residents. Many of the goals and missions of the recycling commission coincide with those of NETRO.

Tennessee Eastman Company is actively involved with public education and initiated the program Kingsport Eastman and You (K.E.Y.). In this program Eastman distributes recycling/solid waste posters to each classroom in Kingsport.

Each city and county school in the Region participates in the Litter curriculum. In this program videos, books, and educational materials are made available to classrooms for check-out. Kingsport city schools participate in programs such as Clean Kingsport and the EPA Reduce, Reuse, Recycle program.

Other public information/education programs which are ongoing in the County are Keep Bristol Beautiful, Clean Tennessee, Keep America Beautiful, and Clean Kingsport.

## **Problem Wastes**

The Sullivan County Landfill has stopped accepting most all special wastes. The landfill currently does not accept any waste tires or acid batteries for disposal.

The law states that every county must have at least one collection site for waste tires by January 1, 1995. The new landfill site will have an area designated for waste tire storage and household hazardous waste storage. Waste oil is collected at all recycling facilities where it is transported for treatment by a private company.

## **Strengths and Weaknesses of the Existing System**

### Weaknesses

- Sullivan County currently has no mandate requiring solid waste collection within the County.
- Specific types of disposal systems are not suited for this Region due to population density and geographic terrain.
- Providing central locations of disposal facilities is difficult due to the large size of the single county region.
- Through permitting procedures, engineering studies, etc., Sullivan County is committed to operating a site specific Class I landfill.
- The Region currently does not having flow control mechanisms in place.
- Pick-up routes of haulers overlap, thus making the system inefficient.
- If the Region is forced to haul solid waste to a landfill outside of the Region, then a successfull recycling program will be hard to keep going.

## Strengths

- The Region already has in place an excellent recycling program throughout the Region. Markets for nearly all recyclables collected are located within the First Tennessee Development District.
- Sullivan County residents currently generate enough waste to efficiently operate their own landfill. This eliminates the need to contract with a private company.
- The existing landfill is equal distance from the two largest cities within the region. It is also approximately 13 miles from both transfer stations.
- A single county operated landfill is attractive to industries considering locating in the county. This ensures that the landfill is close and will eliminate expensive hauling costs.
- The Region has 30 private haulers operating within its boundaries which keeps pick-up rates competitive.
- Three other landfills are in close proximity to the Region which keeps tipping fees reasonable.
- Two private industries operate their own special waste landfills. This provides the county landfill with more space to be used in other ways.

## **CHAPTER III**

### **Growth Trends, Waste Projections and Preliminary System Design**

**A.** Projections of the Solid Waste Stream Quantity Through 2003 are found in tables III-1 thru III-8

#### **PRELIMINARY SYSTEM DESIGN**

There will be five major components in the integrated solid waste management plan established by the region. These five components are consistent with those outlined in the Solid Waste Management Plan Guidelines distributed by the State of Tennessee. The five components of the plan will be:

1. Collection
2. Special Wastes
3. Waste Minimization/Recycling/Composting
4. Disposal
5. Public Education

The preliminary system design is based on achieving the goal of 25% waste reduction by 1995. The following diagram illustrates how each component will be used to handle respective quantities of waste disposed of in the Region.

Percentages given for special wastes and waste minimization/recycling/composting are the targeted reduction percentages from the initial waste stream. Thus 75% of the initial 100% of solid waste collected, will be landfilled.

## COLLECTION(100%)

### EDUCATION

SPECIAL WASTE  
REDUCTION(5%)

WASTE MINIMIZATION,  
RECYCLING,  
COMPOSTING REDUCTION(20%)

## DISPOSAL(75%)

The special waste component contains several different categories of waste. Among these categories are tires, waste oil, household hazardous waste, wet cell batteries, and certain industrial wastes. Of the special wastes mentioned, waste tires will be stored at an approved facility for shredding and landfilled, however many of the other wastes can be recycled or reused providing for the 5% reduction. Storage sites for wet cell batteries and waste oil will be described in detail in Chapter X.

In order to reach the 25% reduction goal the region has identified five major methods to reach the goal.

1. Diversion
2. Recycling
3. Composting
4. Waste Minimization
5. Segregation of Household Hazardous Waste

The Sullivan County Region is fortunate to already have in place an excellent county-wide recycling program. The County has markets available for every component of the recycling stream. Many of the markets are located within the First Tennessee Development District which makes transportation costs to the County very minimal.

Given the ability of the County to successfully operate a recycling program, and the probability of expanding the remaining four components, this system should fit well with existing collection and reduction efforts in the Region.

## EVALUATION CRITERIA

Specific options of the solid waste management plan will be evaluated in the upcoming chapters with an emphasis on integration with the current system. Evaluation criteria for the plan will include:

1. Capital and Operating Costs of New Facilities and Programs
2. Success or Failure of Proposed State Programs
3. Implementation of the Proposed Plan
4. Environmental Impacts
5. Public Acceptance of the Plan
6. Compliance with current or proposed state regulations
7. Periodic calculations of unmanaged waste

## CHAPTER III: FORMS

1. Complete the following Table, summarizing calculations of annual per capita solid waste generation rates, for each county in the region.

Table III-1

County	Total Waste Disposed in FY 1993	Projected Population 1993	Annual Per Capita Generation Tons/Person/Yr
Sullivan	96,684 Tons	142,849	0.67
Total	96,684 Tons	142,849	0.67

2. Summarize the projected quantity of solid waste requiring disposal(generation)in the region in each projected year, adjusted for population changes.

Table III-2

Quantity of Solid Waste Requiring Disposal(tons)

County	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Sullivan	95,538	95,386	95,211	95,044	94,875	94,707	94,540	94,109	93,673	93,241
<b>Total</b>	95,538	95,386	95,211	95,044	94,875	94,707	94,540	94,109	93,673	93,241

3. Summarize the projected quantity of solid waste requiring disposal in the region for each projection year, adjusted for population growth and economic growth.

Table III-3

Quantity of Solid Waste Requiring Disposal(in tons) Adjusted for Population and Economic Growth

County	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Sullivan	98,969	98,902	98,833	98,787	98,720	98,665	98,613	98,564	98,521	98,217
<b>Total</b>	98,969	98,902	98,833	98,787	98,720	98,665	98,613	98,564	98,521	98,217

4. Summarize the projected quantities of solid waste requiring disposal(= generation)for each projection year, adjusted for population growth, economic growth, and source reduction, recycling, and industrial process change.

**Table III-4**

**Quantity of Waste Requiring Disposal(in tons)Adjusted for Population Changes, Economic Growth, and Waste Reduction and Recycling**

<b>County</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
Sullivan	79,058	74,068	74,022	73,982	73,940	73,900	73,864	73,638	73,433	73,212
<b>Total</b>	79,058	74,068	74,022	73,982	73,940	73,900	73,864	73,638	73,433	73,212

8. Prepare a Summary Table indicating projected quantities of solid waste which will require collection and disposal in each projection year, after adjustment for all applicable factors.

**Table III-8**

**Annual Projections of Solid Waste Requiring Disposal Adjusted for All Applicable Factors(in tons/year)**

<b>County</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
Sullivan	79,058	74,068	74,022	73,982	73,940	73,900	73,864	73,638	73,433	73,212
<b>Total</b>	79,058	74,068	74,022	73,982	73,940	73,900	73,864	73,638	73,433	73,212

# CHAPTER IV

## Waste Reduction

The Sullivan County Regional Solid Waste Planning Board recognizes the need to set both short and long term waste reduction goals. The goals set will provide an opportunity to evaluate our progress toward reducing the waste stream in Sullivan County.

A study conducted by the University of Tennessee Waste Management Research and Education Institute in 1989, revealed a per capita waste generation rate of .78 tons annually. The Planning Board has established a waste reduction goal of 25% by December 31, 1995 which meets the state law. To meet this goal Sullivan County must reduce the 1989 volume by 32,087 tons by 1995.

The waste reduction goal will be achieved by a variety of ways including: recycling, composting, diversion to a Class IV facility, and source reduction. These various strategies are detailed in the following paragraphs.

**Table IV-1**

**Population and Quantities Waste Disposed of at Municipal Solid Waste Disposal Facilities and Incineration, in 1989.**

<b>County</b>	<b>1989 Population</b>	<b>1989 Total Waste Disposed (tons)</b>
Sullivan	148,000	114,660
<b>Regional Total</b>	<b>148,000</b>	<b>114,660</b>

## STRATEGIES FOR MEETING THE WASTE REDUCTION GOAL

**Recycling** - Recycling is an integral part of the waste reduction strategy. Currently the County owns and operates 11 permanent recycling stations. None of the stations are manned by the County but there is minimal contamination at the stations. The permanent recycling stations are accessible for residents at all times. Used oil, batteries, and appliances are accepted at the Kingsport and Bristol locations. The recycling program employs three (3) full time and two (2) part time employees.

The City of Kingsport sponsors curbside collection for all city residents. The City of Bristol offers a subscription service for curbside collection through Waste Management Inc.

The Region is fortunate to have convenient markets for all of its recyclables. Paper is sold to Tennessee Cellulose in Limestone, TN., Asheville Waste Paper in Asheville, NC. , and Tri-City Waste Paper in Kingsport, TN. Aluminum products are sold to Reynolds Aluminum. All other recyclables are marketed through Recycle America, a Waste Management Company in Kingsport, TN.

A breakdown of current recycling amounts and the 1995 goals is as follows:

**Table IV-2**

Material	Current		1995	
	Tons	%	Tons	%
Paper	2037	1.8	4527	5.0
Plastic	926	0.8	1720	1.5
Glass	445	0.4	1146	1.0
Aluminum, Metals	296	0.3	573	0.5
<b>Total</b>	<b>3704</b>	<b>3.2</b>	<b>7,966</b>	<b>8.0</b>

Paper represents a large portion of the waste stream and corrugated cardboard will be a primary target for future recycling programs. While progress is constantly being made in recycling plastic resins, the low percentage of plastics in the waste stream, reduces the percentage of plastics being recycled. Increasing markets for glass, especially mixed cullet, will increase the recoverable percentage of glass to 1.0%. Metals and aluminum are economically advantageous to recycle and have already been effectively reduced from the waste stream.

Some businesses have already begun recycling programs particularly with corrugated cardboard. Some industries such as Mead Paper Co., Arcata Graphics, and the Kingsport Times-News do have extensive paper and cardboard recycling programs. An industrial waste survey was prepared and mailed to each business in the county that employs more than 100 people. Responses showed several businesses were participating or planned to participate in recycling programs. These responses, along with information from Waste Management, show constantly increasing industrial recycling efforts.

Composting - Composting is the most basic form of recycling. Currently there are two composting programs operating within the Region. These are a yard waste facility in Bristol that mainly composts brush and a leaf composting facility in Kingsport. The current efforts in composting have resulted in successfully eliminating 7.1% of the 1989 waste stream.

Diversion - There are currently two Class IV facilities located in the cities of Bristol and Kingsport. These facilities have been in operation since the early 1970's, and diversion has been realized since this time. The tipping fees at these sites are comparable to the current class I facility. Officials at the current Class I facility estimate that 10% of the materials going to the Class I landfill can be diverted to a Class IV landfill on the site. As part of a new landfill proposal, Sullivan County plans to open a new Class IV facility. The targeted decrease of the waste stream through diversion is 8%, however this percentage has potential to increase if all 10% of the estimated volume is diverted.

Source Reduction - Businesses and industries in Sullivan County are dedicated to reducing waste and subsequently reducing disposal costs. Process improvements in existing industries should account for a significant reduction in the coming years. There is no concrete data to determine industrial waste reduction but process changes could account for significant reductions in the long term.

The following table illustrates the quantities of waste reduction targeted by the various strategies:

	<u>1995 Goal</u>
Residential Recycling	4%
Business and Industrial Recycling	4%
Composting	7%
Diversion	6%
Industrial Reduction	4%
Total	<u>25%</u>

The greatest inroads expected in reduction techniques will probably be felt in the recycling and waste reduction sectors. More specifically business and industrial recycling should increase greatly with the advent of convenient cardboard and office paper recycling.

Waste stream diversion should remain constant after 1995 as will composting. There are already two Class IV facilities in the Region and with the addition of a third Class IV landfill, the maximum diversion will be reached quickly. There is little yard waste disposed of in the Class I facility because it is currently diverted to a Class IV facility or composted.

#### **Economic Incentives or Disincentives and Regulatory Bans**

The Region currently does not have any economic incentives or disincentives to encourage proper disposal of solid waste. However the Planning Board will consider the initiation of any such measures if current disposal procedures do not allow the Region to meet the 25% reduction goal.

Regulatory bans aside from litter fines or imprisonment as a result of illegal dumping, do not exist in the Region. Again, the Planning Board will adopt such procedures as stricter bans, tougher penalties, etc. if the current system does not allow the County to reach the 25% reduction goal.

**Table IV-3**

**Projected Waste Reduction by Materials**

<b>Material</b>	<b>Regional Tons</b>	<b>Tons Reduced</b>
Paper	38,674	10,227
Glass	6,768	1,690
Ferrous Metals	6,284	1,569
Aluminum	1,354	907
Non-Ferrous Metals	580	144
Plastics	7,735	1,931
Rubber & Leather	2,417	0
Textiles	2,030	0
Wood	3,481	869
Food Wastes	7,155	1,786
Yard Wastes	17,016	4,249
Misc. Inorganic Wastes	1,450	362
Other	1,644	410
<b>Total</b>	<b>96,588</b>	<b>24,147</b>

**Table IV-4**

**Projected Waste Reduction by Economic Sector (tons)**

<b>County</b>	<b>Residential</b>	<b>Commercial</b>	<b>Institutional</b>	<b>Industrial</b>	<b>Total</b>
Sullivan	6,037	3,018	3,018	12,074	24,147
<b>Total</b>	<b>6,037</b>	<b>3,018</b>	<b>3,018</b>	<b>12,074</b>	<b>24,147</b>

**Table IV-5**

**Projected Waste Reduction by Year (tons)**

<b>County</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>
Sullivan	23,885	23,847	23,803	23,761	23,719
<b>Total</b>	<b>23,885</b>	<b>23,847</b>	<b>23,803</b>	<b>23,761</b>	<b>23,719</b>

<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
23,676	23,635	23,527	23,418	23,310
<b>23,676</b>	<b>23,635</b>	<b>23,527</b>	<b>23,418</b>	<b>23,310</b>

Projected waste reduction volumes by year are based on the quantity of waste requiring disposal after adjustment for population growth.

**Implementation, Data Collection, Progress Reports**

An implementation schedule for waste reduction strategies such as recycling, composting, and diversion will be specified in Chapters 6 and 7.

Each city within the County will maintain recycling records pertaining to their respective recycling programs. The County Recycling Coordinator will maintain monthly and yearly totals for recycled materials deposited at drop-off locations. The County will also have access to recycling volumes from Recycle America. Landfill operators will maintain records of wastes being disposed of in the Class I facility.

The cities of Bristol and Kingsport operate Class IV facilities and will be responsible for their record keeping.

Information needed for annual progress reports will be compiled by the Solid Waste Board with the assistance of the First Tennessee Development District. The Development District will assist the County in submitting the annual reports.

Table IV-6

Estimated Quantities of Waste Removed or Diverted From the Waste Stream (tons)

Year	Previous Reductions	Recovered and Recycled	Diverted to Alternative Disposal	Economic Incintives	Other	Total
1985 to 1989						
1990			3,685			3,685
1991		1,222	3,862			5,084
1992		2,417	4,089			6506
1993		2,407	1,769		8,919	13,095
1994		9,554	7,643		6,688	23,885
1995		9,533	7,631		6,677	23,841
<b>Subtotal</b>		<b>25,133</b>	<b>28,679</b>		<b>22,284</b>	<b>76,096</b>
1996		9,521	7,616		6,664	23,801
1997		9,504	7,603		6,653	23,760
1998		9,487	7,590		6,641	23,718
1999		9,470	7,576		6,629	23,675
2000		9,454	7,563		6,617	23,634
2001		9,411	7,528		6,587	23,526
2002		9,367	7,494		6,557	23,418
2003		9,324	7,459		6,527	23,310
<b>Total</b>		<b>100,671</b>	<b>89,108</b>		<b>68,506</b>	<b>241,178</b>

# CHAPTER V

## Waste Collection and Transportation

### Existing Conditions

The Solid Waste Management Act of 1991 requires that each region shall provide collection service to each household in the Region. Convenience centers are the minimum type of collection service to be provided. The Sullivan County Solid Waste Region has an area of 413 square miles. Using one of the methods provided by the State of Tennessee for calculating the number of convenience centers needed, the Region is required to have two centers within its boundaries. This method is stated as:

$$\frac{413 \text{ square miles (area of the County)}}{180 \text{ square miles (constant)}} = 2.28 = 2.00$$

Currently the Region has two convenience centers/transfer stations located equidistant from the Sullivan County Landfill. Given the efficiency with which the two centers provide adequate solid waste collection to the County, there are no immediate plans to establish any new convenience centers.

The cities of Bristol, Kingsport, and Bluff City provide house-to-house collection for all of their residents.

Bristol	10,300 households
Kingsport	12,000 households
Bluff City	675 households

Results of a waste hauler survey showed that 98% of the remaining households in the Region were contracted with a private hauler. Given this high percentage of households with collection service, there is no immediate need to upgrade the amount of service provided to County residents.

## Meeting Collection and Transportation Needs

Currently the Region exceeds the minimum level of service as required by the Solid Waste Management Act of 1991. Collection services offered to county residents by private haulers complements the services offered by the municipalities. These collection services which are available are above and beyond the required number of two convenience centers.

Sullivan County does not intend to increase the current level of service offered to residents, unless it is determined in the future that the services do not adequately meet the collection needs of the County.

Sullivan County Landfill, Inc. is set for closure in March of 1994, however this date is subject to change if the State of Tennessee determines that the landfill meets criteria for issuance of an extension period. The County is in the final stages of permitting a Class I landfill located adjacent to the existing one. Solid waste will continue to be transported to the current landfill until the final closure date or until the new landfill is in operation. If neither option is available the County has addressed transporting the waste to any of three neighboring landfills. Waste would be transported from the transfer stations to either the Hawkins County Landfill which was recently granted a 16 million air space yard extension, the Iris Glen Environmental Center in Washington County which is set to open in October 1994, the Bristol, Virginia Landfill. As of January 1994, County officials were unable to negotiate tipping fees with any of the landfill owners.

	<u>From Bristol</u>	<u>From Kingsport</u>
Hawkins County Landfill	55 miles	35 miles
Iris Glen Environmental Center	25 miles	23 miles
Bristol, Virginia Landfill	5 miles	23 miles

County officials are confident that a new landfill will be sited in Sullivan County and until that time the solid waste collected will be properly disposed of at the least cost to the County.

## Staffing and Training

Sullivan County and the municipalities therein will be able to meet the goals of the 10 year plan using existing staff. Employee training is a continual process to ensure that each employee involved in waste collection and transportation is adequately educated to perform his/her duties.

## 10 year Budget

10 year budget includes the cities of Bluff City, Kingsport, and Bristol.

**Table V-1**

	1994	1995	1996	1997	1998
<b>Transfer Stations</b>	\$2,858,200	\$3,001,110	\$3,151,165	\$3,308,723	\$3,474,159
<b>Collection and Transportation to Landfill</b>	\$4,438,072	\$4,659,975	\$4,892,974	\$5,137,622	\$5,394,503

	1999	2000	2001	2002	2003
<b>Transfer Stations</b>	\$3,647,866	\$3,830,259	\$4,021,771	\$4,222,859	\$4,434,002
<b>Collection and Transportation to Landfill</b>	\$5,664,228	\$5,947,439	\$6,244,811	\$6,557,051	\$6,884,903

Sullivan County and the cities of Kingsport, Bristol, and Bluff City, finance solid waste collection and transportation through commercial and residential garbage pick-up and from general tax funds. The County is pursuing convenience center grants to upgrade existing convenience centers.

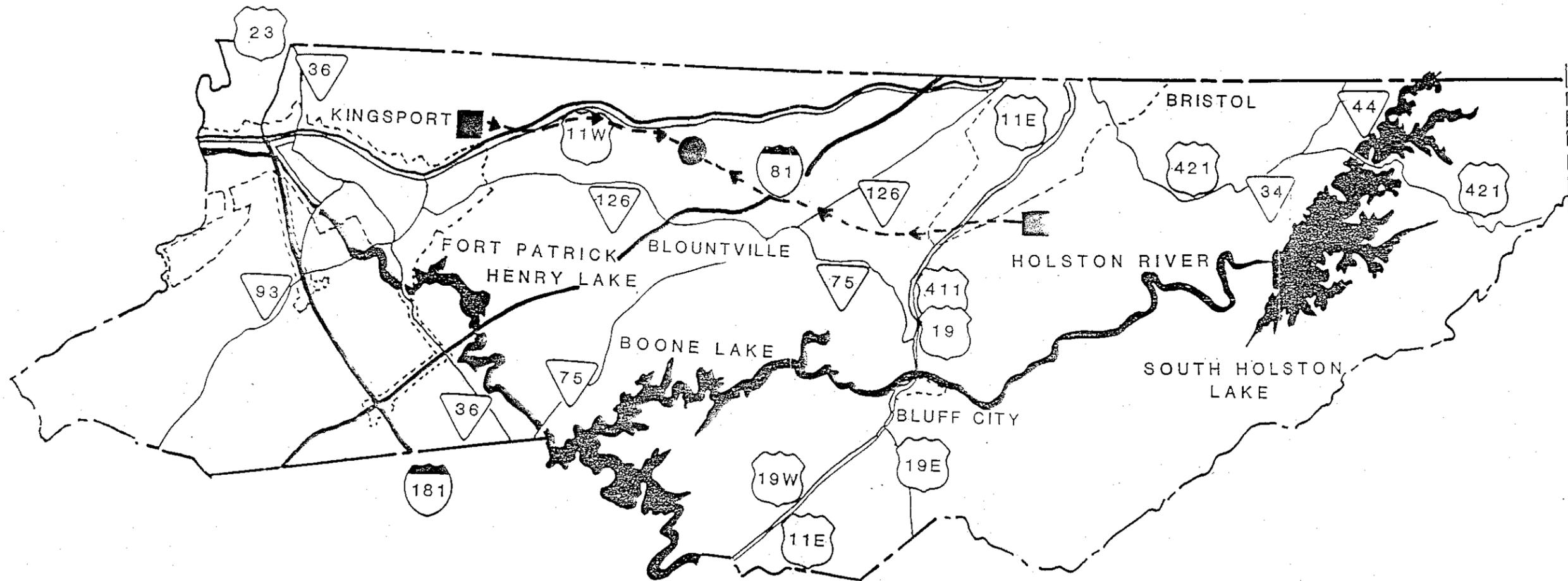
## Collection of Data and Plan Updates

Data collection concerning solid waste transportation and collection will be the responsibility of county and municipality personnel and will begin immediately following approval of the plan. This data is currently collected at the Sullivan County Landfill by landfill employees and compiled by county officials. Data analysis will be the responsibility of county personnel with the assistance of Development District Staff. Development District staff will assist the County in submitting annual updates on the plan to the State.

## **Collection and Transportation Locations**

The location of collection facilities and transportation routes to the landfill are indicated on the system map to be prepared in Chapter XI. Collection service areas in the County are determined by private haulers and may overlap one another. County residents have the opportunity to chose one of several haulers. Mapping the collection routes and service areas is difficult due to the overlapping.

# Collection Facilities & Transportation Routes SULLIVAN COUNTY



- Transportation Routes
- Transfer Stations
- Sullivan County Landfill

# CHAPTER VI

## Recycling

Recycling is a very important strategy in the Sullivan County solid waste management and waste reduction plan. In Sullivan County the recycling process involves collection, preparation of materials to meet buyer's specifications, and selling the materials to available markets.

Sullivan County officials, as well as the Solid Waste Planning Board, supports the purchase of products made with recycled materials when economically feasible. Recycling is successful only when the loop is closed and the recycled materials are put back into the marketplace. The goal of the recycling program during the 10 year planning period is to increase residential, business, and industrial recycling to 8%.

### Existing Conditions

Recycling is one of the cornerstones of waste management in Sullivan County. The County and its municipalities strive to provide quality collection, transportation, and financial management of the recyclable products collected from businesses and residences. There are currently three independent collection efforts in the County. These are independently operated and maintained by the City of Kingsport, the City of Bristol, and the County. These efforts provide complete coverage of the County with recycling facilities.

### Sullivan County

The County currently operates and maintains nine recycling stations. All of these are permanent locations. Each site has three 40 yd<sup>3</sup> covered roll-off containers and four 8 yd<sup>3</sup> containers. County officials had some of the containers specially constructed to maximize the volume of the containers. The sites are open to the public at all times. Most of the sites are unmanned, however the containers are located at highly visible places ( i.e. schools, government offices, and fire stations) which minimizes the amount of vandalism or littering.

Collection trucks routinely transport recyclables from these locations to the Waste Management recycling center and other local markets. The County also operates a compactor truck which collects paper from schools, county office buildings, and selected city buildings on a weekly basis.

Items currently collected at the drop-off facilities are glass, plastic, cardboard, magazines, newspapers, aluminum, and tin cans. Aside from the nine drop-off locations, two recycling facilities are located at convenience centers/transfer stations. These are manned sites that accept newspapers, magazines, cardboard, plastic, glass, aluminum, tin cans, used oil, batteries, and appliances. Used oil is recycled by a private company while batteries and appliances are sold to the public. An average of 500 tons per week is collected at the Sullivan County recycling centers.

As part of a continuing effort to educate the residences of Sullivan County, the county has employed a full-time Litter/Recycling Coordinator. The duties of the Recycling Coordinator are to monitor all of the recycling collection sites, compile the data from the sale of recyclable materials, talk with each business owner in the county on a yearly basis about recycling, and provide seminars and educational programs to the citizens and school age children of the County. The Coordinator speaks and provides educational materials to 42 public schools in the County.

#### City of Bristol

The City of Bristol offers curbside collection of co-mingled recyclables to residences on a contract basis. The service is available through Waste Management Inc. Each household is able to subscribe to the service at a cost of \$2.50 per month.

In addition to the curbside collection, residences also have the opportunity to take the recyclables to three drop-off locations at Bristol city schools. Recovery at these three locations is averaging less than 4 tons per week.

#### City of Kingsport

The City of Kingsport provides curbside collection of recyclables within the city limits to all single family households who wish to participate. The city operates four compartmentized recycling trucks and collects recyclables on a weekly basis. The weekly participation rate is approximately 35% which generates about 30 tons of recyclable per week. The process requires only one employee for each collection route which consists of 250-450 bins.

Kingsport also provides weekly collection of corrugated cardboard from commercial establishments that wish to participate.

#### **Regional Needs**

The Sullivan County Region is adequately serviced by drop-off recycling centers. The use of these centers is available to all county residences, however residents living in Bristol and Kingsport have the opportunity to participate in door-to-door collection.

Currently Kingsport has mandatory door-to-door pickup of recyclables while Bristol has a subscription service for pickup of recyclables. A comparison of the two types of systems obviously showed that mandatory collection had a higher participation rate. To increase the amount of recyclable materials collected within the region, the City of Bristol may wish to employ mandatory collection of recyclables.

The County has nine recycling centers located throughout the County. This number exceeds the required number according to the size or population of the Region. Establishing any new recycling centers in the County is not a significant need at this time. However the Region will continue to expand the availability of drop-off collection sites if there is a need.

### **Goals and Objectives**

The Region has established a recycling goal of 8% of the total waste stream by 1995. This recycling goal includes residential, business, and industrial recycling.

With the exception of increasing collection efforts in the City of Bristol, the County will mainly reach the recycling goal through increased public education. The Litter/Recycling Coordinator will be responsible for public education in schools, businesses and civic organizations. The Coordinator will also be responsible for updating and maintaining the recycling centers as well as collecting and preparing reports to the State.

Regional recycling leaders will continue to search for the best available markets for the sale of recyclables collected. This may involve membership in the Recycling Market Cooperative for East Tennessee or utilization of the Office of Cooperative Marketing.

### **Recycling Facilities**

Blountville Fire Station  
Piney Flats Fire Station  
Warrior Path Fire Station (Across Road)  
Bristol National Guard Armory  
Holston Valley Middle School  
Sullivan Garden Middle School (Football Field)  
Kingsport Civic Center  
Bluff City Park  
Indian Springs Elementary School

Recycled materials are also collected at these convenience centers:

1921 Brookside Lane, Kingsport  
 804 Raytheon Road, Bristol

The Region has one recycling center which is operated by Waste Management, Inc. and located in Kingsport. The Region sells much of the collected recyclables to Recycle America, however other local businesses are used by the Region to market recyclables.

**Budget**

**Table VI-1  
 10-Year Recycling Budget**

	1994	1995	1996	1997	1998
<b>Salaries for Full-Time Employees</b>	\$100,000	\$105,000	\$110,250	\$115,762	\$121,550
<b>Salaries for Part-Time Employees</b>	\$16,000	\$16,800	\$17,640	\$18,522	\$19,448
<b>Trans.</b>	\$78,000	\$81,900	\$85,995	\$90,295	\$94,810
<b>Misc. Supplies</b>	\$30,000	\$31,500	\$33,075	\$34,729	\$36,465

	1999	2000	2001	2002	2003
<b>Salaries for Full-Time Employees</b>	\$127,627	\$134,008	\$140,708	\$147,743	\$155,130
<b>Salaries for Part-Time Employees</b>	\$20,420	\$21,441	\$22,513	\$23,639	\$24,821
<b>Trans.</b>	\$99,550	\$104,527	\$109,753	\$115,241	\$121,003
<b>Misc. Supplies</b>	\$38,288	\$40,202	\$42,212	\$44,323	\$46,539

The following table is the combined recycling budget of the cities of Bristol, Kingsport, and Bluff City.

**Table VI-2**

	1994	1995	1996	1997	1998
Collection, Processing, and Transporting	\$339,343	\$356,310	\$374,125	\$392,831	\$412,472

	1999	2000	2001	2002	2003
Collection, Processing, and Transporting	\$433,095	\$454,749	\$477,486	\$501,360	\$526,428

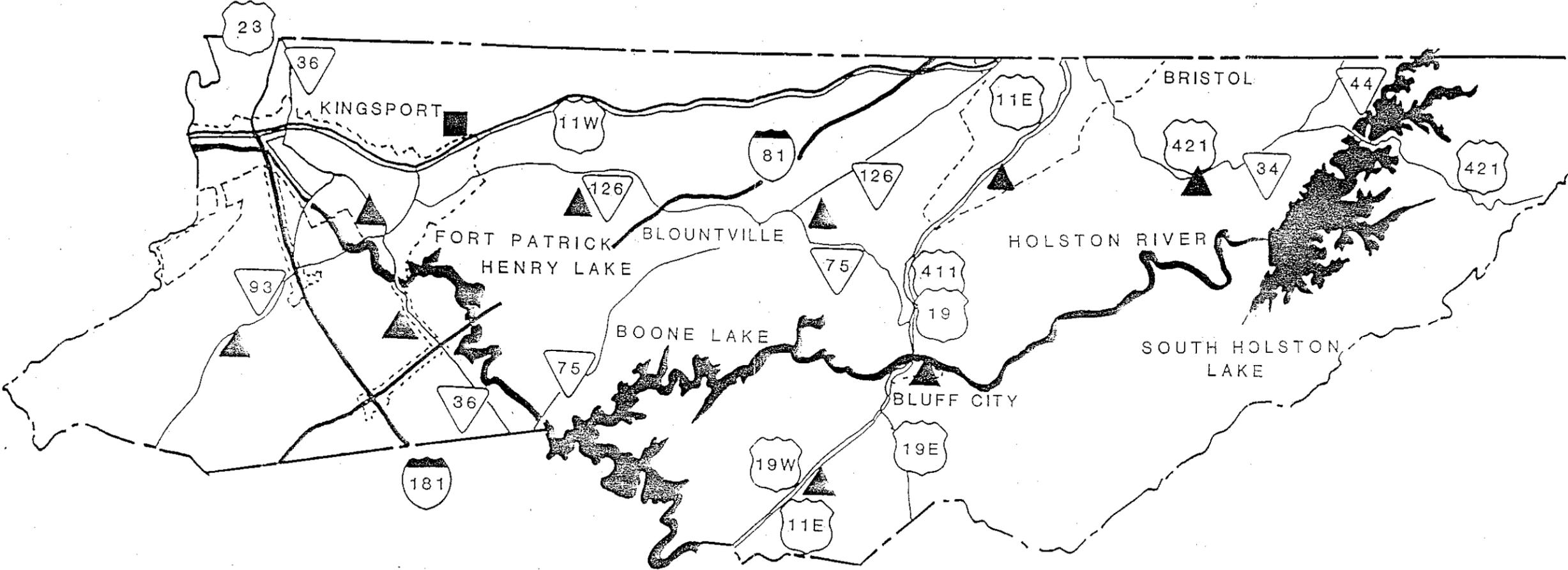
**Implementation**

**Table VI-3**

**10-year Implementation Schedule**

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
<b>Educational Programs</b>											
<b>Consider Door-to-Door Collection in Bristol</b>											
<b>Regional Maintenance</b>											

# Regional Recycling Facilities SULLIVAN COUNTY



- ▲ RECYCLING FACILITIES
- CONVENIENCE CENTERS/TRANSFER STATIONS

## **CHAPTER VII**

# **Composting, Solid Waste Processing, Waste-to-Energy, and Incineration Capacity.**

### **Existing Conditions**

Within the Sullivan County Solid Waste Planning Region are two yard waste composting facilities. These facilities are operated by the cities of Bristol and Kingsport. Materials composted at the facilities include, sewage sludge and brush at the Bristol Wastewater Treatment Plant, and brush at the Kingsport facility. Operating capacity at the Bristol facility is 14 tons/day and 58.48 yd<sup>3</sup>/day (15 tons/day) at the Kingsport location. There are no municipal solid waste composting facilities in the Region and none are planned as part of the solid waste management plan.

Besides the Sullivan County Landfill and two demolition landfills, there is currently one waste processing facility in the Region. It is Recycle America, owned and operated by Waste Management Inc. Co-mingled recyclables are sorted by five manual pickers and processed for resale by Waste Management Inc.

There are no solid waste-to-energy or solid waste incineration facilities located in the Region.

### **Regional Needs**

Currently the Board hasn't identified any needs related to composting, waste processing, waste-to-energy, or incineration. All processing facilities are sufficiently meeting the needs of the residents of Sullivan County. Operating costs are addressed by the cities in which the facilities are located. This is part of the annual operating budget of the cities and it is not felt by the Planning Board that a significant increase in operating costs will be seen in the next ten years.

## Goals and Strategies

The goals of the Region primarily deal with the composting capacity at each facility. The City of Bristol incinerates leaves at the Bristol, Va burner and co-composts brush at the waste water treatment plants in Bristol, Va and Bristol, TN. The Planning Board has established a waste reduction goal, related to the composting strategy, of 7.0%. As of February 1994 the composting facilities are processing 7.1% of yard waste formerly being landfilled, thus meeting the goal for composting. 7.1% is full capacity for the County's composting program.

Due to the anticipated success of other waste reduction strategies i.e. recycling, diversion, industrial reduction, the Planning Board does not plan to increase the size of the composing operations or facilities.

The operating capacity of Recycle America is 100 tons/day. Currently it is estimated that 50% of the design capacity is in use. Since this is a private facility, it is not known if Waste Management is planning to expand the operating capacity. However it is unlikely until full design capacity is being reached.

## Budget

Table VII-1

	1994	1995	1996	1997	1998
<b>Bristol</b>	\$194,890	\$204,634	\$214,865	\$225,108	\$236,358

<b>Bristol</b>	1999	2000	2001	2002	2003
	\$248,170	\$255,578	\$268,356	\$281,773	\$295,861

Kingsport has the only other composting program within the Region. The budget for Kingsport's program is included in the waste collection and transportation costs.

## Implementation Schedule

Composting programs have been implemented in Kingsport and Bristol for several years. Periodic evaluations and calculations will be made to determine the percentage of solid waste being composted. This data will be evaluated by county personnel and any upgrading needed to maintain the goal set by the Planning Board will be addressed in annual reports to the State.

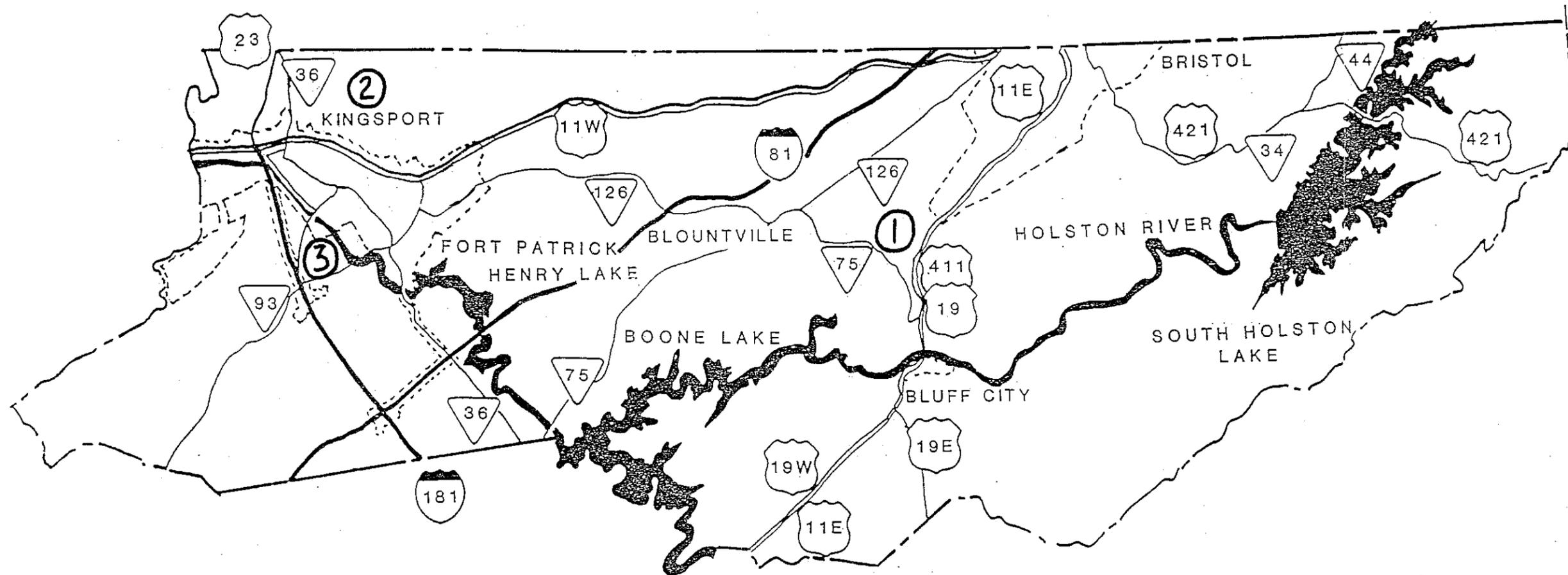
Data related to the success of Recycle America will be studied in relation to the success of the County recycling program. Recycle America will remain successful if the County recycling program remains successful. The success of the recycling program will be determined through periodic evaluations of county and city recycling volumes. Any upgrading needed will be addressed in the annual reports to the State.

#### **Location of Composting and Waste Processing Facilities**

The location of all composting facilities and waste processing facilities are found on the system map in Chapter XI. For immediate access to the location of these facilities a map is also located in this chapter.

# Composting and Waste Processing Facilities

## SULLIVAN COUNTY



- ① Bristol Composting Facility
- ② Kingsport Composting Facility
- ③ Recycle America

## **CHAPTER VIII**

### **Disposal Capacity**

#### **Existing Conditions**

Sullivan County is currently disposing of all waste collected at the two transfer stations in the Sullivan County Landfill, Inc. This landfill is owned and operated by Baker Engineering. The landfill is slated for closure in March of 1994. The landfill has 48,750 tons of remaining capacity. County officials feel that an extension will be granted for approximately 6 months which would allow landfill operators who are applying for an extension to adequately develop a post-closure financial assurance bond and post-closure plans.

Sullivan County is also actively pursuing development of another Class I landfill adjacent to the existing one. The new landfill will have 3,000,000 tons of capacity and has a 20-40 year life span. The Class I landfill will be 70 acres in size with a total of 320 acres being used for buffer zones, tire storage area, and a Class IV area. The landfill will have a design capacity of 400 tons/day. This landfill would be owned and operated by the County. Currently the County is addressing required corrections issued by the State of Tennessee, that need to be made to the engineering plans. County officials remain confident that this new landfill will receive approval and the County will get permission to begin construction.

**1. Projected Capacity and Supply, and Identification of Potential Shortfalls or Surplus in Disposal Capacity.**

**Table VIII-1**

**Tons Per Year**

<b>Year</b>	<b>Demand: Tons Requiring Disposal</b>	<b>Supply: Existing and Planned Supply</b>	<b>Surplus (+)</b>	<b>Shortfall (-)</b>
<b>1993</b>				
<b>1994</b>	95,538	3,000,000	2,904,462	
<b>1995</b>	95,386	2,904,462	2,809,076	
<b>1996</b>	95,211	2,809,076	2,713,865	
<b>1997</b>	95,044	2,713,865	2,618,821	
<b>1998</b>	94,875	2,618,821	5,523,946	
<b>1999</b>	94,707	2,523,946	2,429,239	
<b>2000</b>	94,540	2,429,239	2,334,699	
<b>2001</b>	94,109	2,334,699	2,240,590	
<b>2002</b>	93,673	2,240,590	2,146,917	
<b>2003</b>	93,241	2,146,917	2,053,676	

**Regional Needs**

Sullivan County is only guaranteed disposal in the existing Sullivan County Landfill until March 1994. If the proposed new landfill in Sullivan County is permitted and construction is begun soon, the County will have approximately 2,000,000 surplus tons of capacity at the end of the 10 year period. Since the landfill will be owned and operated by the County, flow control will probably be the method used by the County to ensure that disposal is guaranteed at the landfill for the entire 20-40 year life span of the landfill.

A plan for disposal of solid waste until a new landfill is permitted or if one is not permitted has already been addressed by the Solid Waste Planning Board. In the event the County is in a situation concerning waste disposal capacity when existing capacity expires before a new landfill is in operation,

Sullivan County will transport waste to either the Bristol, Va Landfill, Iris Glen Environmental Center, or Hawkins County Landfill.

These options are listed in table VIII-1. If the County is not issued a permit to construct a new landfill, Sullivan County will likely transport its solid waste to either Iris Glen Environmental Center in Johnson City, Hawkins County Landfill or the Bristol, Va Landfill. Disposal costs would be negotiated with either of these landfills if the need arises.

Table VIII-2

Facility	Distance From Bristol Kingspt (miles)		Tipping Fee	Lifespan
<b>Hawkins County Landfill</b>	45	20	N/A	16 million air space yd extension in 1993.
<b>Bristol, VA</b>	5	23	\$25.50 as of Jan. 1, 1994	Existing landfill is open. New landfill is slated for opening in July 1996.
<b>Iris Glen Environmental Center</b>	26	35	N/A	Slated to Open in Oct. 1994 with a 20 year life span.

## **Budget for Proposed Landfill**

The new Sullivan County Landfill will be developed in 9-acre increments about every 3-5 years. The following budget is for the first 10 acres of development.

Construction - First Phase 10 acres @ \$300,000/acre = \$3,000,000

Operating Costs - (Labor, Environmental testing, Offices, etc.) = \$1,000,000/yr

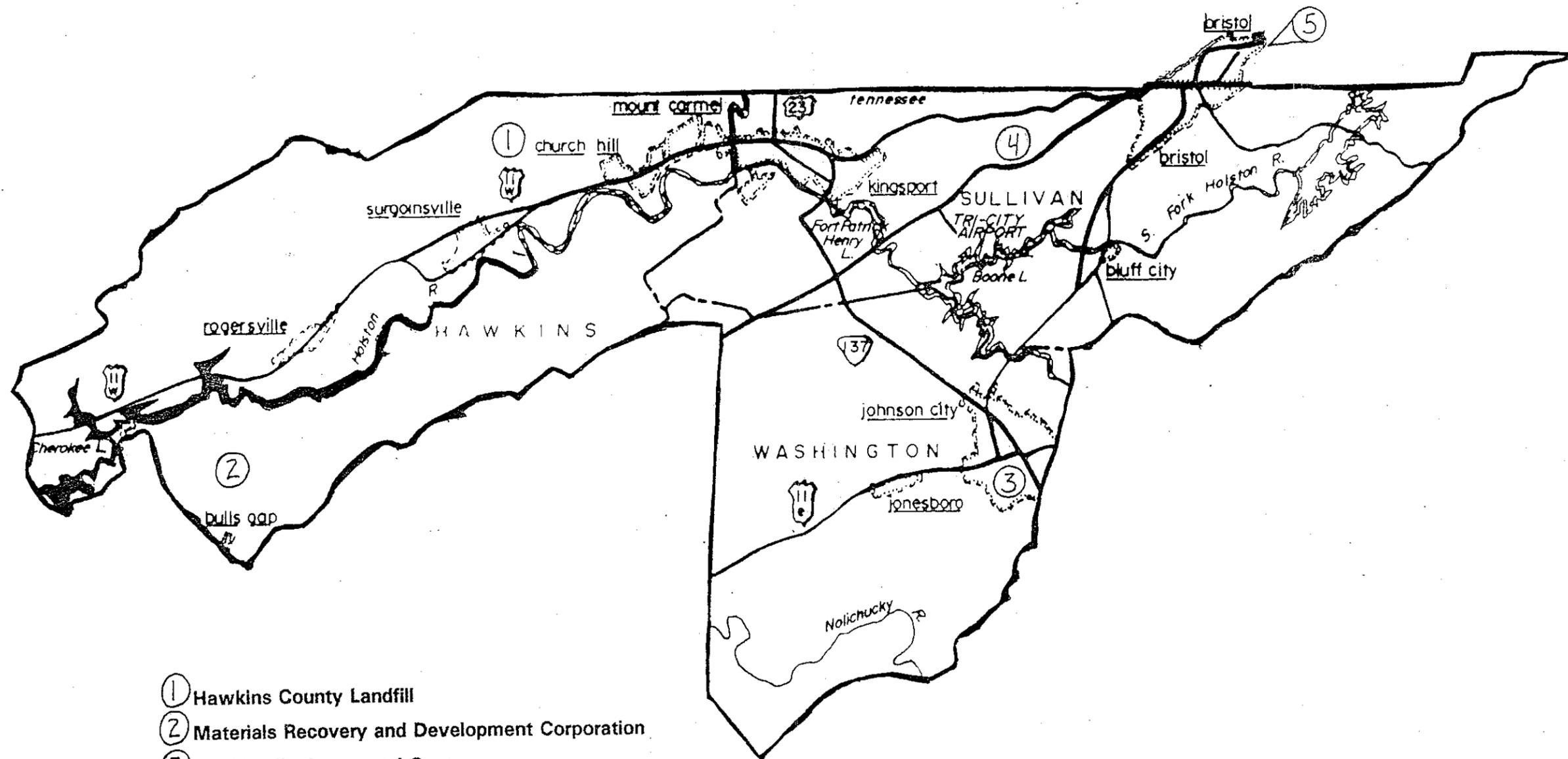
Equipment Costs -(Land and Engineering, Trucks, Dozers, etc.) = \$2,000,000

Tipping Fee = \$23.00

The total cost of the project is estimated to be approximately \$20,000,000. Future increments of development will be financed from \$9.00/ ton, from the tipping fee, being placed in escrow.



# Disposal Capacity SULLIVAN COUNTY



- ① Hawkins County Landfill
- ② Materials Recovery and Development Corporation
- ③ Iris Glen Environmental Center
- ④ Sullivan County Landfill
- ⑤ Bristol, VA Landfill

# **CHAPTER IX**

## **Public Information and Education**

### **Existing Conditions**

The force behind public information and education in Sullivan County is the Litter/Recycling Coordinator. The main focus of the Coordinator is public education. It is the goal of the Coordinator to visit each county and city school within the region to provide information on recycling and solid waste management. The Litter/Recycling Coordinator is also actively involved in pursuing markets for recyclables collected at the County drop-off locations. Four of the County's drop-off locations are near County schools.

The coordinator presents an average of two seminars a week to elementary and secondary school groups, civic organizations, businesses, school administration officials, and county officials to discuss the County's recycling initiatives and solid waste management. The Recycling Coordinator is responsible for writing and distributing a free quarterly newsletter on Sullivan County recycling. A copy of the Newsletter is located at the end of this chapter.

Kingsport Recycles is a public education program operated within the City of Kingsport. This is an educational program operated by Kingsport. Eastman Chemical Company located in Kingsport is also involved in public education through a program known as Kingsport Eastman and You (K.E.Y.). In this program Eastman distributes visual aides to each classroom in the Kingsport City Schools.

Sullivan County is fortunate to have several non-profit environmental education organizations. Among these is the Northeast Tennessee Recycling Organization (NETRO) whose goal is to minimize the amount of waste going to Class I landfills. This is a regional organization that meets regularly in Kingsport. Another organization is the Sullivan County Recycling Commission which provides recycling information to county residents. And finally, such groups as Keep America Beautiful, Keep Bristol Beautiful, Clean Tennessee, and Clean Kingsport are continuously providing public education and information to the citizens of Sullivan County.

## **Regional Needs**

Public education is perhaps the most important aspect of managing solid waste in Tennessee for the next ten years. Increasing public awareness for recycling, and waste reduction is the key to reducing the amount of solid waste going to landfills. The Planning Board has identified several needs in the County Public Education Program.

### **A.**

Increased industrial reduction and education is an area that has been identified by the Planning Board as being a regional need for the next ten years. Sullivan County is fortunate to have several industries within its boundaries, however some of these industries are large waste generators and contribute significantly to the amount of waste going to the Sullivan County Landfill. Demonstrating to these industries the economic and environmental benefits of reducing waste can result in a 2% decrease in the volume of waste received at the Class I landfill.

### **B.**

Implementing Solid Waste Management as required curriculum in all city and county schools is another regional need for Sullivan County. Solid waste is an important issue facing our school-age children in Tennessee. Any waste reduction taking place in the next ten years and beyond will be the result of educating today's students on the importance and the procedures for achieving solid waste reduction. A standardized solid waste/recycling curriculum package discussing all recycling products is necessary in all schools to ensure that each student is receiving the same information about the issues.

### **C.**

Increased media coverage of recycling initiatives and educational programs has also been identified as a regional need. This need is difficult to provide as part of the solid waste plan. However it is probably the most important ingredient needed in a successful public education program. County officials are constantly pursuing ideas that would create more involvement from the press.

### **D.**

Long-range plans for the County recycling program are to place 1 collection box each for cardboard and tin cans at each of the County schools with a cafeteria. Institutions such as schools have been identified by the Planning Board as key locations to provide recyclable collection boxes.

## **Meeting Regional Needs**

**A.**

The Sullivan County Solid Waste Planning Board will utilize the services of the University of Tennessee Center for Industrial Services (UTCIS) to conduct waste reduction training seminars for area industries at least once per year. UTCIS engineers have indicated to the Planning Board that they will conduct half-day or full-day training seminars for all industries within the County that are willing to participate. The training sessions will be geared toward industrial reduction methods available to industries and/or the economic benefits to industries that initiate waste reduction.

Also available from the UTCIS that will be utilized by the Sullivan County Solid Waste Planning Board are on-site evaluations of industries. Engineers will tour some of the largest waste generators or largest employers and demonstrate how each industry can benefit from reducing the amount of waste generated.

**B.**

Currently ten of the County's thirty-two schools have voluntary solid waste/recycling educational programs. These programs are conducted by interested faculty members and are not required courses. School administrators, not yet providing any educational programs, have been encouraged by the Recycling Coordinator to provide curriculum to interested students. The County is anxious to review the State's educational materials and programs provided for by T.C.A. 68-211-844. The Recycling Coordinator is currently using information provided by Waste Management in the public education presentations. Success of the public education program will be evaluated based on the number of schools participating in solid waste/recycling education.

**C.**

Increasing media coverage will be a difficult goal for the Planning Board to achieve. However approximately 11 newspapers, television stations, and radio stations are contacted as each new recycling initiative is implemented.

**D.**

The County has provided a separate line item in the annual budget for financing the recycling program. Plans have been made in advance for the purchase of recycling equipment such as collection boxes. The County has received permission from the County School Superintendent to place collection boxes at each of the County school cafeterias.

The success of this program will be gauged by the number of cafeterias with collection boxes added each year.

# Implementation Schedule

Table IX-1

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
<b>Initial Industrial Reduction Seminar</b>										
<b>Collection Boxes at Cafeterias</b>										
<b>Consider standardized curriculum package</b>										



"Give your waste a second chance"

# Sullivan County Recycle Newsletter

Winter 1994

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## Scrap Tires Solid Waste Facts

**Weight in MSW:** In 1990, according to EPA, 242 million scrap tires were generated in the U.S. This is approximately 1.0% of municipal solid waste (MSW) by weight.

In 1990, 188 million scrap tires (77.6% of discards) were landfilled, stockpiled, or illegally dumped. According to EPA, scrap tires are 1.0% of landfilled MSW by weight.

**Volume in MSW:** EPA landfill volume data does not include tires.

**Recycling Rate:** In 1990, 26 million scrap tires (10.7%) were burned for their energy value, 16 million (6.7%) were recycled, and 12 million (5%) were exported. An additional 33.5 million scrap tires were retreaded in 1990 and 10 million were reused.

**Value:** Negative. In most cases, generators pay a tip fee to scrap tire markets. The tip fee varies regionally and by tire size.

**Recycled Content:** New tires contain no more than 2% recycled rubber. Retreads contain 75% recycled content.

---

## Scrap Tires and Integrated Waste Management

**Source Reduction:** Designing tires for longer life, reuse of used (but still usable) tires, and retreading are the primary source reduction options for scrap tires. Over the past 40 years, improved manufacturing techniques have doubled the useful life of tires. Forty-thousand-mile tires are now commonplace.

Retreading is applying a new tread to a worn tire with a good casing. Retreading is on the decline because of the low price of new passenger car tires and misconceptions about the quality of retreads. However, the number of truck tire retreads is increasing due to the high cost of truck tires. Over 1,700 retreaders operated in the U.S. and Canada in 1991.

**Recycling:** Scrap tires can be recycled as whole or split tires or as crumb (ground) rubber. Whole tire uses include artificial reefs and playground equipment. Split tire uses include floor mats, belts, and dock bumpers. Crumb rubber uses include rubber and plastic products such as mud guards, carpet padding, tracks and athletic surfaces, and rubberized asphalt. Crumb rubber is by far the biggest recycling market for scrap tires.

**Composting:** Scrap tires do not compost. However, 2-inch square shredded tire chips can be used as a bulking agent in composting wastewater treatment sludge. The tire chips must be removed from the compost before it is sold, but they can be reused in the composting process.

**Incineration:** Scrap tires are highly combustible with a 12,000 to 16,000 British thermal unit (BTU) fuel value per pound, which is slightly higher than coal. Whole tires can be burned or the tires can be shredded into tire-derived fuel (TDF). Hog fuel boilers for pulp and paper mills are the biggest users of scrap tires, followed by cement kilns and combustion facilities designed to burn TDF.

**Landfilling:** Unlandfilled scrap tires can create a public health problem as a mosquito breeding area. Landfilling single tires can pose problems if the tires fail to compress within the landfill and resurface. As a result, six states ban the disposal of tires, while another 21 ban the disposal of whole tires. Disposal bans passed without recycling or incineration options can lead to stockpiled whole tires and tire-pile fires.

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## Yard Waste Solid Waste Facts

**Weight in MSW:** According to the U.S. EPA, in 1990, 35 million tons of yard waste were generated in the U.S. This is 17.9% of municipal solid waste (MSW) by weight. The average American "generates" 280 pounds of yard waste per year.

**Composting Rate:** EPA estimated that in 1990, 4.2 million tons, or 12% of yard waste, was composted. 1990 was the first year in which EPA estimated a composting rate.

**Amount Not Composted:** In 1990, 30.8 million tons of yard waste were disposed of in landfills or waste-to-energy facilities. This is 19% of discarded (non-recycled) MSW.

**Volume in MSW:** In 1990, EPA estimated that yard waste occupied 41.3 million cubic yards of landfill space, or 10% of landfilled MSW by volume. Uncompacted yard waste has a density of 250-500 pounds per cubic yard; landfilled yard waste has a density of 1,500 pounds per cubic yard.

**Value:** Compost value is not tracked by national publications because of the seasonal nature of its production and differences in what is being sold, end markets, and how the compost is sold.

**Markets:** High-quality compost can find a market as a soil amendment and as mulch for landscapers, farmers, nursery owners, and the general public. Local and state governments can use compost for highway verges, parks, and school grounds in place of top soil and mulches. Farm soil restoration is a potential high-growth market. In some cases, compost is used as a daily cover for landfills.

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## Yard Waste and Integrated Waste Management

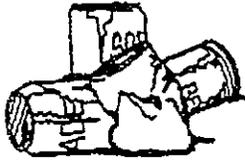
**Source Reduction:** Source reduction for yard waste is generally considered to be backyard composting and "leave-it-on-the-lawn" (grasscycling) programs for grass clippings. Brush trimmings are most effectively shredded and used as mulch. Large scale composting of leaf waste is a form of volume reduction resulting in loss of 40-75% of the original volume. In addition, approximately 50% of the weight is lost.

**Composting (Recycling):** Composting is generally defined as the controlled decomposition of organic matter by microorganisms into a humus-like product. Yard waste is organic and highly compostable. Non-meat and non-dairy food wastes can enhance the yard waste composting process. Composting is recycling for yard waste.

**Incineration:** Yard waste is combustible. It has a low BTU value (2,876 BTU per pound as compared to 4,500-5,000 BTUs for a pound of MSW). BTU values for yard waste are heavily affected by the wetness of yard waste. Burning piles of yard waste is banned in a number of states due to potential air pollution and health problems.

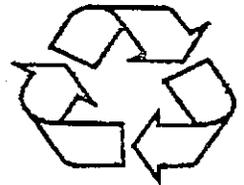
**Landfilling:** Yard wastes can decompose into methane. However, new EPA landfill regulations are designed to limit environmental degradation from methane production.

# Greater Bristol Area Recycling Options



**Curbside Recycling:** The Twin Cities provide a special recycling bin to citizens willing to pay a \$2.50 additional fee on their utility bills. Aluminum, clear, green and brown glass, plastic soft drink and milk containers and water bottles, steel and tin cans as well as newspapers are picked up on the regular trash collection day.

**Cardboard:** A special cardboard only recycling bin is located at the Bristol Area Chamber of Commerce, 20 Volunteer Parkway. Cardboard to be placed in the bin must be broken down before deposit.



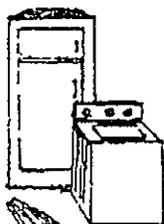
**Convenience Center:** The City of Bristol, Virginia locates a bin on Division Street the 2nd. Saturday of the month from 9am to 3pm for newspaper, plastic PETE 1 & HDPE 2, aluminum and glass. Volunteer staff always needed. Contact Rob Simis at (703) 466-5224 for info.

**More Convenience Centers:** The City of Bristol, Tennessee and the Bristol, Tennessee School System and Sullivan county provide recycling bins at Holston View Elementary School, Fairmount Elementary School and Avoca Elementary during school hours. Materials accepted are cardboard, newspapers, plastics (PETE 1 & HDPE 2) and aluminum. Money raised goes to the schools.



**Petroleum Products:** Necessary Oil Company recycles used oil, diesel fuel, transmission fluid, transmission grease and hydraulic oil only. Two locations accept recyclable materials, 5430 Oakwood St. in Bristol or 2680 Highway 11W. A mobile tank is available the fourth Saturday of the month at Dominion Auto Auction on Route 11.

**Other locations:** The Sullivan County recycling program has bins available at the Bristol Convenience Station on Raytheon Road, Kingsport Convenience Station on Brookside Lane Monday through Saturday and daily at the Tennessee National Guard Armory 611 Bluff City Highway, Bristol; Piney Flats Fire Hall, Blountville Fire Hall, Holston Valley Middle School Sullivan Middle School, Warriors Path Fire Hall, Bluff City Park and Kingsport Civic Center. Bins accept plastics (PETE 1 & HDPE 2), glass, newspapers, aluminum, cans, cardboard, paper bags, magazines, catalogs and telephone books. Used motor oil, appliance and water heaters can be taken to the Bristol and Kingsport convenience Stations.



## What to do with those Old Appliances and Water Heaters?

In Bristol, Virginia, just put them out by 7:30 am on your normal trash pickup day.

Bristol, Tennessee residents can do the same, but appliances must be put on the street rather than in the alley, if that is the normal trash pickup point.

.....  
**Garden "waste" and recycling:** Both Bristols will pick up vegetative matter and compost it at City owned sites, but a compost pile in your own yard can be beneficial to your garden. Check with your Extension Agent or the Public Library for information on home composting. Compost is a cheap and ecologically sound source of fertilizer and mulch.



.....  
**What else can I do to help reduce volume in the landfill?** Be a selective shopper: buy things in large or economy size packages, buy produce "loose" rather than in a package, select products in recycled or recyclable packages (Look for the ♻️ symbol on the package), bring your own tote bag for carry out purchases, avoid packaging made of more than one material, shop for reusable products rather than disposable, stop junk mail.

### Other Sources of Information:

Office of Solid Waste  
U.S. EPA  
401 M St. SW  
Washington, DC 20460  
(800) 424-9346

Bristol Recycling Center, Inc.  
764-5411

Reynolds Aluminum Recycling  
669-5109 (Bristol,VA)

Twin City Iron & Metal Co.  
466-2022 (Bristol,VA)

Necessary Oil Co.  
669-2971 (Bristol,VA)

Keep Bristol Beautiful  
615 968-4399



# *Wellman's Recycled Fleece Fabric To Be Used in Patagonia Jackets*

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**By Christina Thoresen**

---

Wellman, Inc. (Shrewsbury, N.J.), recently received the United Nations Environment Programme's (UNEP) Fashion Industry Award for Environmental Excellence for the development of a recycled polyester fiber. A double-sided velour fleece, Fortrel® Eco-Spun™ is made from post-consumer polyethylene terephthalate (PET), including 2-liter soda bottles.

Through a research and development partnership with Dyersburg Fabrics (Dyersburg, Tenn.) and Patagonia, the outdoor clothing company based in Ventura, Calif., the fleece fiber is now being knitted into DyerSport E.C.O., a fleece fabric used in Patagonia's line of rugged outerwear garments.

The partnership was initiated by Wellman when the company approached Patagonia and showed them its developmental fiber, according to Judith Langan, Wellman's director of marketing/communications. "Patagonia then challenged Wellman to develop a fleece fabric that could compete with Patagonia's predominant fabric, Synchronia®," said Langan. This led to Wellman's partnership with Dyersburg, a company that has been manufacturing knitted fabric for the

apparel industry for more than 60 years. The end result is DyerSport E.C.O.

According to Langan, the process for manufacturing the environmentally-responsible fleece begins with curbside collection of the post-consumer bottles, which are then sent to Wellman's recycling facility in South Carolina.

At the facility, the bottles are put through a manual and an automatic sort to remove contaminants, leaving the bottles, which Langan said, are made of the same raw materials as polyester. The contaminant-free plastic is chipped, melted, and put through an extrusion process. The resulting polyester fiber is then ready for conversion into the fabric.

Patagonia uses the fleece in its clothing under its trademark PCR (post-consumer recycled) Synchronia®. According to Megan Montgomery, Patagonia's director of corporate affairs, the company has an ongoing commitment to reduce the environmental burden of clothing.

"Cotton, wool, and synthetics are all equally harmful to the environment," Montgomery said. "And Patagonia looks on the new fabric as a way to lessen the impact of a synthetic product on the environment."

# CHAPTER X

## Special Wastes

### Household Hazardous Wastes (HHW)

Household Hazardous Waste is defined as any toxic or poisonous substance found in the home, which is used for general home, car, or yard maintenance.

Sullivan County is concerned with the amount of hazardous wastes generated within each household. In order to properly manage these household hazardous wastes, the County is actively involved in a county-wide household hazardous waste management program.

Sullivan County is not eligible to receive a grant to construct a permanent household hazardous waste drop-off treatment facility. The County has, however applied for and received approval for collection of household hazardous wastes using the State's mobile collection unit. Sullivan County has set April 16, 1994 for the collection day. The approved site for the collection event will be the Sullivan Central High School parking lot.

Items which are acceptable at the collection event include:

**From the Home:** cleaning solutions, polishes, photo chemicals, batteries, etc.

**From the Garage:** waste oil, antifreeze, degreasers, kerosene, etc.

**From the Yard:** pesticides, herbicides, insect sprays, pool chemicals.

**From the Workbench:** Rust preventives, paint, paint thinners, solvents, etc.

The County is a member of the Appalachian-Northeast Tennessee Resource Conservation and Development Council. Through the efforts of the RC&D Council the household hazardous waste collection event was planned. The RC&D Council was instrumental in scheduling collection events for the other five counties within the Council. The events are scheduled for three consecutive weeks beginning on April 9, 1994 which will allow residents several opportunities to dispose of the waste. This also allows for a thorough media campaign throughout the region to ensure that every resident is aware of the event. Radio, television, and newspapers will be providing Public Service Announcements about the event. Sprint Telephone, local telephone company, has also agreed to establish a toll free hotline for any resident to call for information concerning the event such as time, date, items to be collected, location, etc. Sullivan County will also rely on its excellent solid waste public education program to distribute information about the collection event including time and date of collection day, materials that will be collected, procedures for safe handling, etc.

The County will provide all necessary fire and police protection, traffic control devices, emergency medical response teams, and any extra personnel needed to ensure that the event is operated as efficiently as possible. Most all people assisting with the event are doing so on a voluntary basis thus minimizing the costs to the County. Professional personnel provided by the County are compensated by the County as part of their regular duties.

A member of the Sullivan County Solid Waste Planning Board will be present at the collection event to assist with the dissemination of information to county residents. Sullivan County is scheduling a collection event every year or more often if the needs are present and the mobile collection unit is available.

### **Implementation Schedule**

1993 -	Apply for Household Hazardous Waste Collection Event
March 1994 -	Begin media campaign about collection event.
April 1994 -	1 <sup>st</sup> HHW collection event at Sullivan Central High School
1995 -	Collection event
1996 -	Collection event
1997 -	Collection event
1998 -	Collection event
1999 -	Collection event
2000 -	Collection event
2001 -	Collection event
2002 -	Collection event
2003 -	Collection event

The dates and times of each event after 1994 are subject to application approval and availability of the mobile collection unit. The location of each event after 1994 will likely move to other locations within the County.

## **Waste Tires**

As stated in the Solid Waste Management Act of 1991, no whole tires can be accepted at Class I landfills after January 1, 1995. Every county shall provide a temporary storage site for whole waste tires. The Sullivan County Landfill, Inc. no longer accepts whole waste tires for disposal. Demolition landfills in Bristol and Kingsport accept whole waste tires for shredding and disposal. 163,716 tires were sold in Sullivan County in fiscal year 1993.

The City of Kingsport has purchased a tire shredding unit and shreds every whole tire prior to disposal. The City of Bristol temporarily stores tires until the mobile tire shredding unit is available from the State of Tennessee. All tires accepted at the demolition landfills are shredded and then disposed of in the Class IV facility.

The proposed new Sullivan County Landfill will have a temporary storage area for whole waste tires. As part of the new landfill proposal and budget, the County will purchase a tire shredding unit to shred tires before disposal. Shredded tires will be placed in Class IV landfills and counted toward the 25% waste reduction goal.

County and city environmental personnel are responsible for monitoring any illegal activity concerning solid waste. This monitoring includes locating, inventorying, and estimating quantities of illegal tire dumps.

## **Waste Oil**

Sullivan County has been collecting waste oil at each of two convenience centers/transfer stations since August 1991. The waste oil is collected and transported for recycling by a private company. In 1993 approximately 2,275 gallons of waste oil was collected.

As part of the new Sullivan County Landfill proposal, an approved site for waste oil collection is being planned. When the oil is collected it will also be transported by a private company for recycling.

## **Lead Acid Batteries**

Lead acid batteries are collected at each of two convenience centers/transfer stations. Batteries are removed from the site by private citizens who sell the batteries to a buy-back recycler. The proposed new Sullivan County Landfill will have a storage site for lead acid batteries that will also allow citizens to remove the batteries at no charge and sell them to a buy back recycler.

## **Litter**

Sullivan County has employed a Litter/Recycling Coordinator through a grant from the State Litter Grant Fund. The main duties of this individual as have been previously mentioned, are to provide public education presentations and materials on the proper handling of solid waste.

As an evaluation of the success of the solid waste management plan, periodic calculations of unmanaged waste will serve as one evaluation criterium. The Litter/Recycling Coordinator is responsible for all litter control activities in the County.

# CHAPTER XI

## Implementation: Schedule, Staffing, and Funding

### System Definition

Sullivan County will utilize a truly integrated solid waste management system. The County will employ four waste management strategies to meet the 25% waste reduction goal. These strategies include recycling, composting, diversion, and industrial reduction. It is estimated that Sullivan County will generate 98,787 tons of solid waste requiring disposal in 1995 (Table III-3).

The planning board has identified several regional goals in meeting the waste reduction goal. The County is currently recycling approximately 6% of the total waste stream. One of these goals is to increase the amount of waste being recycled to 8%. To meet this goal the County will continue to implement drop-off recycling facilities throughout the County. It is also the goal of the County to have cardboard, tin can, and aluminum can recycling boxes at each of the school cafeterias in the County. The County has two composting programs operating in the Cities of Bristol and Kingsport. The Planning Board estimates that 7% of the total waste stream can be diverted from the Class I facility through composting. These facilities are currently operating at full capacity and account for 7.1% reduction of the waste stream.

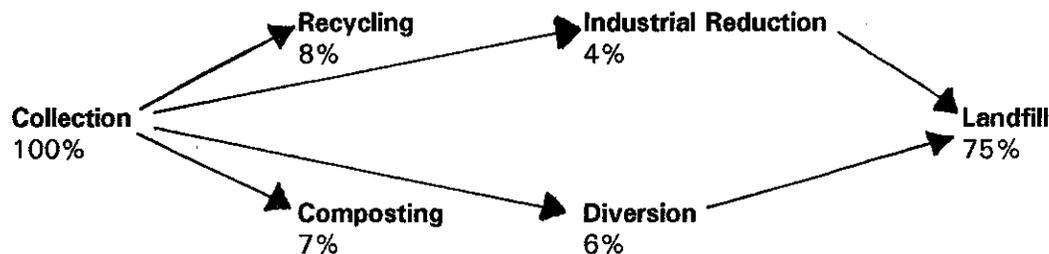
Diversion and industrial reduction will account for the remaining 10% of the waste reduction. Approximately 6% of the waste stream going to the Class I landfill will be diverted to a pit burner or Class IV facility. County officials estimate that approximately 10% of the waste currently going to the landfill can be diverted to a Class IV location within the new Class I landfill. To maximize the use of the Class IV facilities in Sullivan County, the Planning Board has addressed the need of the County to initiate restrictions on Class IV waste. The County will begin not accepting or transporting construction/demolition waste to the proposed Class I landfill owned by the County.

Strategy	% Reduction
Recycling	8%
Composting	7%
Diversion	6%
Industrial Reduction	4%
	11-1

The Planning Board is interested in scheduling Industrial Waste Seminars each year in order to demonstrate the need of industries to participate in recycling and waste reduction. The University of Tennessee Center for Industrial Services will conduct the half-day seminars.

The County will continue to provide an extensive public education program to assist the citizens of Sullivan County in understanding the needs to reduce waste.

The following is a flow diagram of the proposed integrated waste management system.



Sullivan County will implement the proposed solid waste plan through existing county and city personnel and the Regional Solid Waste Planning Board. Any components of the Plan that are implemented by the Cities of Bristol, Bluff City, and Kingsport will be the responsibilities of the respective cities.

The County Engineer and Recycling Coordinator will be responsible for the day to day monitoring and record keeping of county-wide recycling programs and landfill diversion.

Implementation Schedule

Table XI-1

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
<b>Begin Educational Programs</b>										
<b>Consider Door-to-Door Recycling Collection in Bristol</b>										
<b>Regional Maintenance of Recycling Programs</b>										
<b>Continue Class I Landfill Development</b>										
<b>Initial Industrial Reduction Seminar</b>										
<b>Place Collection Boxes at School Cafeterias</b>										
<b>Consider Standardized Curriculum Package</b>										
<b>Begin Storing Batteries, waste Oil, and Whole Tires at Approved Storage Sites</b>										
<b>Household Hazardous Waste Collection</b>										

## Staffing and Training Requirements

Table XI-2

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
<b>Collection</b>										
Drivers	41	41	41	41	41	41	41	41	41	41
Laborers	43*	40*	42*	39*	39*	39*	39*	39*	39*	39*
<b>Transfer Station</b>										
Operators	2	2	2	2	2	2	2	2	2	2
Mechanics	3	3	6	6	6	7	7	7	7	7
Laborers	5	5	5	5	5	5	5	5	5	5
<b>Class IV Landfills</b>										
Clerks	1	1	1	1	1	1	1	1	1	1
Operators	4	4	4	4	4	4	4	4	4	4
Attendant	1	1	1	1	1	1	1	1	1	1
Laborers	1	1	1	1	1	1	1	1	1	1
<b>Recycling</b>										
Coordinator	1	1	1	1	1	1	1	1	1	1
Drivers	5	5	5	5	5	5	5	5	5	5
Laborers	2	2	2	2	2	2	2	2	2	2
<b>Composting</b>										
Operators	6	6	6	6	6	6	6	6	6	6
Laborers	1**	1**	1**	1**	1**	1**	1**	1**	1**	1**

\* 15 employees are part-time

\*\* 1 part-time employee

**Table XI-3**

Expenditures	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Waste Collection	\$3,167,376	\$3,325,744	\$3,492,031	\$3,666,632	\$3,849,963	\$4,042,461	\$4,244,584	\$4,456,813	\$4,679,653	\$4,913,635
Transfer Stations and Transport.	\$1,438,696	\$1,510,630	\$1,586,161	\$1,665,469	\$1,748,742	\$1,836,179	\$1,927,987	\$2,024,386	\$2,125,605	\$2,231,885
Cost of Disposal	\$1,600,000	\$1,788,742	\$1,787,631	\$1,786,665	\$1,785,651	\$1,784,685	\$1,783,815	\$1,778,357	\$1,773,406	\$1,768,069
Recycling	\$563,343	\$591,510	\$621,085	\$652,139	\$684,745	\$718,980	\$754,927	\$792,672	\$832,306	\$873,921
Composting	\$194,890	\$204,634	\$214,865	\$225,108	\$236,358	\$248,170	\$255,578	\$268,356	\$281,773	\$295,861

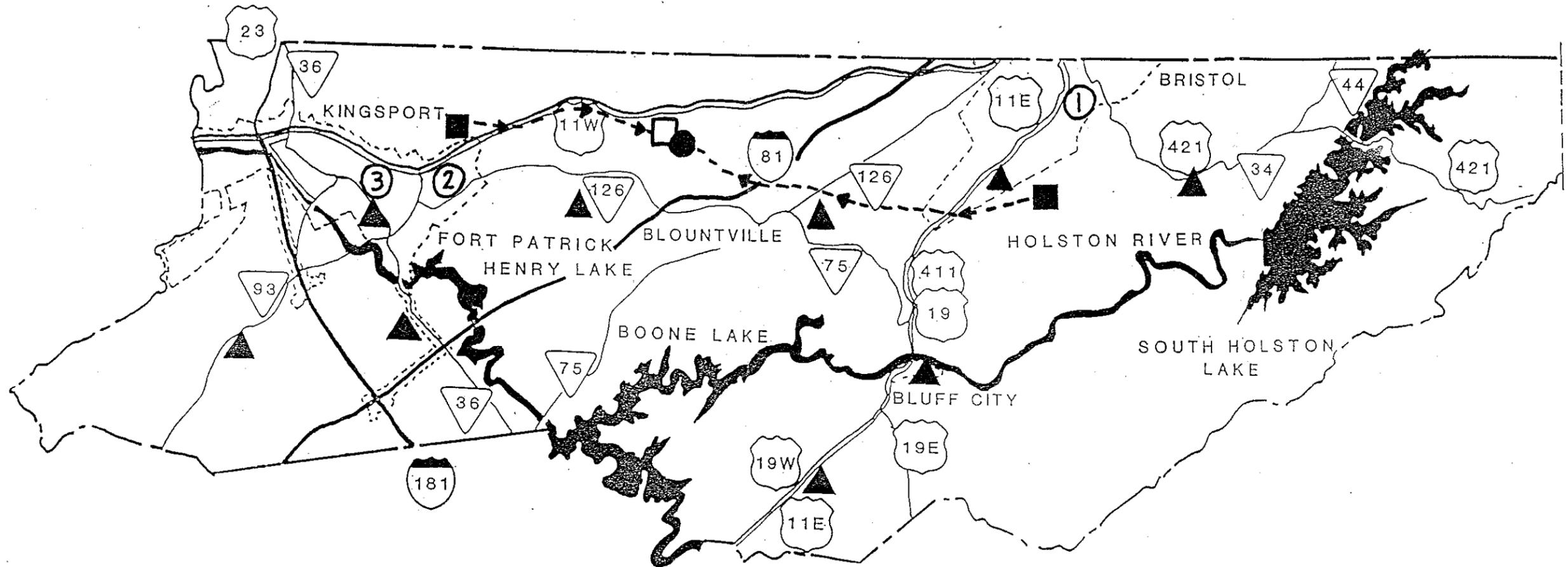
A Consumer Price Index/inflation rate of 5% was used.

**Table XI-4**

Revenue

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Recycling Rebate	\$20,382	\$20,382	\$20,382	\$20,382	\$20,382	\$20,382	\$20,382	\$20,382	\$20,382	\$20,382
Tipping Fees	\$1,740,192	\$1,629,496	\$1,480,440	\$1,479,640	\$1,478,800	\$1,478,000	\$1,472,280	\$1,472,760	\$1,468,660	\$1,464,240
Sale of Recyclables	\$102,827	\$102,827	\$102,827	\$102,827	\$102,827	\$102,827	\$102,827	\$102,827	\$102,827	\$102,827
Commercial Garbage Pick-up	\$612,104	\$642,709	\$674,844	\$708,586	\$744,015	\$781,253	\$820,315	\$861,330	\$904,396	\$949,615
Residential Garbage Pick-up	\$517,996	\$543,895	\$571,089	\$599,643	\$629,625	\$543,895	\$571,089	\$599,643	\$629,625	\$661,106
Transfer from General Funds	\$1,666,190	\$1,666,910	\$1,666,190	\$1,666,910	\$1,666,190	\$1,666,190	\$1,666,190	\$1,666,190	\$1,666,190	\$1,666,190

# Current Solid Waste Disposal System SULLIVAN COUNTY



- Transfer Stations/Convenience Centers
- ② Kingsport Composting Facility
- ① Bristol Composting Facility
- ④ Kingsport Demolition Landfill
- ⑤ Bristol Demolition Landfill
- Transportation Routes
- ▲ Recycling Drop-Off Locations
- Sullivan County Landfill, Inc.
- Proposed site of new Sullivan County Landfill
- ③ Recycling America - materials recovery facility

## **CHAPTER XII**

### **Allocation of Implementation Responsibilities: Plan Adoption and Submission**

#### **Plan Adoption**

The plan will be submitted to the Sullivan County Commission for approval prior to being submitted to the Division of Solid Waste Assistance. County Commission approval is not required by the Solid Waste Management Act of 1991 or by resolution establishing the Planning Board, however the Planning Board feels that County Commission involvement and subsequent approval of the Plan is necessary to facilitate its success.

#### **Plan Submission**

Ten copies of the Plan will be submitted to the Tennessee Department of Conservation, Division of Solid Waste Assistance before the July 1, 1994 deadline.

## **CHAPTER XIII**

### **Flow Control and Permit Application Review**

#### **Flow Control**

The Sullivan County Solid Waste Planning Region will initiate out-of-region waste flow control. The County does not wish to accept out-of-region waste due to possible liabilities and community concern. County officials feel obligated to the citizens of Sullivan County to provide an environmentally safe landfill and ensure needed capacity for the people of the County.

The County Commission, however, will reserve the right to allow some out-of-region waste if approved by the County Commission.

#### **Permit Application**

The Solid Waste Planning Board, in cooperation with the County Commission, will review all permit applications for landfills, incinerators , etc. Approval of such permits will be based on the consistency of the permit with the solid waste management plan.

All permit applications will be addressed to the Solid Waste Planning Board and will be reviewed within ninety days. Public Information hearings will be conducted in accordance with the Tennessee Code Annotated. The Solid Waste Planning Board will review all permit applications and provide the County Commission with a recommendation. The Planning Board will rely on the Tennessee Department of Environment and Conservation for technical review of permits and final approval or disapproval of the permit application.

## **APPENDIX A**

# Sullivan County

Wm. H. "John" McKamey

County Executive



P.O. BOX 509  
BLOUNTVILLE, TENNESSEE  
37617  
PHONE  
615 / 323-6417

October 12, 1992

The Tennessee State Planning Office  
308 John Sevier State Office Building  
500 Charlotte Avenue  
Nashville, TN 37243-0001

Gentlemen:

Please find enclosed a certified copy of Resolution No. 11, approved by the Sullivan County Board of Commissioners on September 21, 1992, establishing Sullivan County as a Solid Waste Region.

If additional information is required, please let me know.

Sincerely,

A handwritten signature in cursive script that reads "Wm. H. 'John' McKamey".

Wm. H. "John" McKamey  
County Executive

WHM:sg

Enclosure

cc: Mr. John Webb  
First Tennessee Development District

RESOLUTION NO. 11

TO THE HONORABLE Wm. H. MCKAMEY, COUNTY EXECUTIVE, AND THE MEMBERS OF THE SULLIVAN COUNTY BOARD OF COMMISSIONERS IN REGULAR SESSION THIS THE 21st DAY OF September, 1992.

RESOLUTION AUTHORIZING the establishment of a "Solid Waste Region" and creation of a Solid Waste Board pursuant to the "Solid Waste Management Act of 1991"

WHEREAS, TENNESSEE CODE ANNOTATED; SECTION \_\_\_\_\_ AUTHORIZES COUNTIES TO \_\_\_\_\_

NOW, THEREFORE BE IT RESOLVED by the Board of County Commissioners of Sullivan County, Tennessee assembled in Regular Session on the 21st day of September, 1992,

THAT WHEREAS, the "Solid Waste Management Act of 1991" requires the establishment of "Solid Waste Regions" consisting of one or more counties; and

WHEREAS, Sullivan County produces over 400 tons of solid waste per day and has instituted proceedings and taken certain actions to permit a centrally located landfill to handle the expected volume for twenty years without outside contributions; and

WHEREAS, the hauling distance makes it more cost-efficient to have the landfill located within the County; and

WHEREAS, each Solid Waste Region is required to appoint a Board to administer the activities of the region;

NOW, THEREFORE, BE IT RESOLVED that Sullivan County be designated as a Municipal Solid Waste Region.

BE IT FURTHER RESOLVED that a <sup>seven</sup> ~~five~~ member Solid Waste Board be created in accordance with the provisions of Tennessee Code Annotated ~~§69-31-913~~. (WAIVER OF RULES REQUESTED)

#68-211-813

All resolutions in conflict herewith be and the same are rescinded insofar as such conflict exists.

This resolution shall become effective on \_\_\_\_\_, 19\_\_\_\_, the public welfare requiring it.

Duly passed and approved this 21st day of September, 1992.

ATTESTED: \_\_\_\_\_ DATE: 9-21-92 Wm. H. McKamey APPROVED: \_\_\_\_\_ DATE: 9-21-92  
County Clerk County Executive

INTRODUCED BY COMMISSIONER Ammons ESTIMATED COSTS: \_\_\_\_\_  
SECONDED BY COMMISSIONER Rockett FUND: \_\_\_\_\_

COMMISSION ACTION: (Aye) (Nay) (absent)  
ROLL CALL 21            3  
VOICE VOTE                                 

COMMITTEE ACTION: APPROVED DISAPPROVED DATE  
Administrative X            9/16/92  
Budget                                   
Executive X            9/2/92

COMMENTS: WAIVER OF RULES PASSED 9/21/92 ROLL CALL

ATTEST: TRUE AND EXACT COPY  
Gay B. Feathers  
GAY B. FEATHERS, COUNTY CLERK OF SULLIVAN COUNTY

# Sullivan County

Wm. H. "John" McKamey  
County Executive



P.O. BOX 509  
BLOUNTVILLE, TENNESSEE  
37617  
PHONE  
615 / 323-6417

December 4, 1992

The Tennessee State Planning Office  
308 John Sevier State Office Building  
500 Charlotte Avenue  
Nashville, TN 37243-0001

Gentlemen:

Please find enclosed a certified copy of Resolution No. 30, approved by the Sullivan County Board of Commissioners on November 16, 1992, establishing a Solid Waste Region Planning Board for Sullivan County.

If additional information is required, please let me know.

Sincerely,

A handwritten signature in cursive script that reads "Wm. H. 'John' McKamey".

Wm. H. "John" McKamey  
County Executive

WHM:sg

Enclosure

cc: Mr. John Webb  
First Tennessee Development District

**State of Tennessee,** Sullivan **County**

I, Gay B. Feathers, of said Sullivan County, do hereby certify that the foregoing Resolution #30 - Sullivan County Solid Waste Region planning board is a full, true and perfect copy of.

as appears of record now on file in my office, In Minute Record Book 17 Page R

Witness my hand & seal at office in Blountville this the 2nd day of December, 1992

*Gay B. Feathers*

RESOLUTION NUMBER 30

TO THE HONORABLE Wm. H. "JOHN" MCKAMEY, COUNTY EXECUTIVE, AND THE MEMBERS OF THE SULLIVAN COUNTY BOARD OF COMMISSIONERS IN Regular SESSION THIS THE 16th DAY OF November 19 92.

RESOLUTION AUTHORIZING Sullivan County Solid Waste Region Planning Board

WHEREAS, TENNESSEE CODE ANNOTATED; SECTION \_\_\_\_\_, AUTHORIZES COUNTIES TO \_\_\_\_\_

NOW, THEREFORE BE IT RESOLVED by the Board of County Commissioners of Sullivan County, Tennessee, assembled in Regular Session on the 16th day of November 19 92.

THAT WHEREAS, In accordance with the "Solid Waste Management Act of 1991", the Sullivan County Board of Commissioners has designated Sullivan County as a Municipal Solid Waste Region; and

WHEREAS, Pursuant to T.C.A. 68-211-813, a Solid Waste Region Board must be created to administer activities of the Region;

NOW THEREFORE, BE IT RESOLVED, That the following members appointed by the Mayors of Bluff City, Bristol and Kingsport, and the Sullivan County Executive, be approved for the initial terms indicated:

MEMBER:	APPOINTED BY:	TERM:
Frank Clifton - City Manager	BRISTOL	4 Yrs.
B. R. "Rusty" Wilkerson - Director of Public Works	KINGSPORT	4 Yrs.
Paul Taylor - Mayor, Bluff City	BLUFF CITY	4 Yrs.
Jack Hurlbert - Consulting Engineer	SULLIVAN COUNTY	6 Yrs.
Roy Settle - District Conservationist USDA Soil Conservation Service	SULLIVAN COUNTY	6 Yrs.
Leah Ross - Waste Resource Manager Bristol Regional Medical Center	SULLIVAN COUNTY	2 Yrs.
Joe Yarbrough - Sullivan County Engineer	SULLIVAN COUNTY	2 Yrs.

BE IT FURTHER RESOLVED, That this Municipal Solid Waste Region Board shall have all powers and duties as granted it by T.C.A. 68-211-813 et seq. and in addition, in the performance of its duty to produce a municipal solid waste region plan, it shall be empowered to utilize existing Sullivan County governmental personnel, to employ or contract with persons, private consulting firms, and/or governmental, quasi-governmental and public entities and agencies and to utilize Sullivan county's services, facilities and records in completing this task; and

BE IT FURTHER RESOLVED, That at the Municipal solid Waste Region Board's initial organization meeting it shall select from its members a chair, vice-chair, and secretary and shall cause the establishment of a municipal solid waste advisory committee whose membership shall be chosen by the Board and whose duties are to assist and advise the

Board; and \_\_\_\_\_

BE IT FURTHER RESOLVED, That the Municipal Solid Waste Region Board, in furtherance of its duty to produce a municipal solid waste region plan, is authorized to apply for and receive funds from the State of Tennessee, the federal government, Sullivan County, and donations and grants from private corporations and foundations; and

BE IT FURTHER RESOLVED, That Sullivan County shall receive, disburse and act as the fiscal agent for the administration of the funds of the Municipal Solid Waste Region and the Region's Board, and

BE IT FURTHER RESOLVED, That upon passage of this Resolution and at no later date than December 31, 1992, the County Clerk of Sullivan County shall transmit a copy of this Resolution to the Tennessee State Planning Office.

All resolutions in conflict herewith be and the same rescinded insofar as such conflict exist.

This resolution shall become effective on \_\_\_\_\_, 19\_\_, the public welfare requiring it.

Duly passed and approved this 16th day of November, 1992

*Gay B. Feathers*  
Attested: \_\_\_\_\_  
County Clerk

Date: 11/16/92 *Wm. H. "John" McKernan*  
County Executive

INTRODUCED BY COMMISSIONER BLALOCK ESTIMATED COST: \_\_\_\_\_  
SECONDED BY COMMISSIONER FERGUSON FUND: \_\_\_\_\_

Committee Action	Approved	Disapproved	Deferred	Date
Administrative				
Budget				
Executive				

Commission Action	Aye	Nay	Pass	Absent	Total
Roll Call	22			2	
Voice Vote					

COMMENTS: WAIVER OF RULES PASSED 11/16/92 ROLL CALL

\_\_\_\_\_

\_\_\_\_\_

## **INSTITUTIONAL STRUCTURE**

Members of the Sullivan County Regional Solid Waste Planning Board include:

	<b>Representing</b>	<b>Term</b>
1. Frank Clifton Bristol City Manager	Bristol	4 years
2. B.R. Wilkerson Director of Public Works City of Kingsport	Kingsport	4 years
3. Charles Cowan Mayor	Bluff City	4 years
4. Roy Settle Soil Conservation Service District Conservationist	Sullivan County	6 years
5. Leah Ross - Chair Waste Resource Manager Bristol Regional Medical Center	Sullivan County	2 years
6. Jack Hurlbert - Vice-Chair Consulting Engineer	Sullivan County	6 years
7. Joe Yarbrough - Secretary County Engineer	Sullivan County	2 years

## **ADVISORY BOARD STRUCTURE**

<b>Members</b>	<b>Representing</b>
Mayor Hunter Wright	City of Kingsport
Vice-Mayor Richard Watterson	City of Kingsport
Charles Overstreet - Engineer	City of Bristol
Robert L. Henry - Engineer	City of Bristol
Mayor Charles Cowan	City of Bluff City
Barb Paul - Environmental Engineer	City of Bluff City
Edley Hicks	Sullivan County Commission
Fred Childress	Sullivan County Commission

## **MISSION STATEMENT**

The mission of this board is to "Using the individual expertise of its members, the Advisory Board will assist the Regional Solid Waste Planning Board in the development of the 10 year Solid Waste Plan."

## **SUMMARY OF ACTIVITIES**

The Advisory Board is invited to attend and participate a joint meeting of the Advisory Board and Solid Waste Planning Board. Each Advisory Board member was given a draft copy of the regional plan and was asked to provide comments or corrections to the plan.

## **PROBABLE ROLE IN IMPLEMENTATION**

The Advisory Board will be given notice of future meetings of the Solid Waste Planning Board. When updates to the Plan are necessary, the Advisory Board will be utilized in the same manner as previously stated.

# Sullivan County

Wm. H. "John" McKamey  
County Executive



P.O. BOX 509  
BLOUNTVILLE, TENNESSEE  
37617  
PHONE  
615 / 323-6417

May 25, 1994

Mr. Chris Craig  
First Tennessee Development District  
207 North Boone Street, Suite 800  
Johnson City, TN 37604

Dear Mr. Craig:

This is to certify that Sullivan County has met the financial accounting requirements of TCA 68-211-874 in the Solid Waste Management Act of 1991. Those funds are as follows:

55710	Solid Waste/Sanitation
55720	Solid Waste - Education
55733	Transfer Stations
58600	Employee Benefits
59100	Operating Transfers

If I can be of further assistance, please let me know.

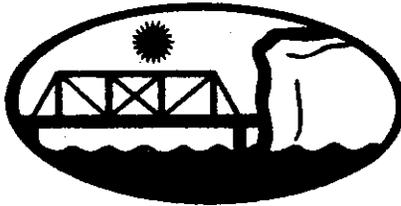
Sincerely,

A handwritten signature in black ink that reads "Wm. H. 'John' McKamey".

Wm. H. "John" McKamey  
County Executive

WHMcK:sg

## City of Bluff City



P.O. BOX 70 - 226 MAIN ST. - BLUFF CITY, TN 37618  
TELEPHONE: (615) 538-7144  
FAX NO. (615) 538-7138

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June 1, 1994

Mr. Chris Craig  
First Tennessee Development district  
207 North Boone St.  
Suite 800  
Johnson City, TN. 37604

Dear Mr. Craig,

The City of Bluff City is in compliance with the Solid Waste Management Act of 1991. We have established a Solid Waste Fund/Sanitation Fund which provides funding for landfill services.

Should additional information be necessary, please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Charles B. Cowan". The signature is written in black ink and is positioned above the printed name and title.

Charles B. Cowan  
Mayor

# CITY OF BRISTOL TENNESSEE

801 Broad Street  
Bristol, Tennessee 37620

Patrick W. Hickie - Mayor  
John S. Gaines - Vice-Mayor  
R. Elmer Doak - Councilman  
Fred R. Esser - Councilman  
Mitch Walters - Councilman

Mailing Address:  
P.O. Box 1189  
Bristol, TN 37621-1189  
Telephone 615/989-5500  
Fax 615/989-5506

May 20, 1994

Mr. Christopher L. Craig  
Environmental Specialist  
First Tennessee Development District  
207 Boone Street, Suite 800  
Johnson City, Tennessee 37604

Dear Mr. Craig:

The city of Bristol has complied with the solid waste financial accounting system requirements of T.C.A. 68-31-874 by establishing a special revenue fund for solid waste related activities. The fund name is Solid Waste Disposal.

If you have any questions regarding this correspondence, please contact Mr. Bill Sorah at 989-5565.

Sincerely,



Patrick W. Hickie  
Mayor

PWH/pdp



CITY OF KINGSPORT, TENNESSEE

---

May 27, 1994

Mr. Christopher L. Craig  
Environmental Specialist  
First Tennessee Development District  
207 North Boone Street  
Suite 800  
Johnson City, TN 37604

Dear Mr. Crag:

In response to your letter dated April 26, you will find attached copies of the sections of our Annual Financial Statement identifying the activity in our Solid Waste Management Fund. We feel we are in compliance with the requirements set forth in T.C.A. 68-31-874.

I feel this correspondence serves as a letter of certification regarding our responsibilities for the Solid Waste Management Plan.

Sincerely,

*Hunter Wright*  
Hunter W. Wright  
Mayor

HWW/ckf

Attachment

## **APPENDIX C**

# Sullivan County

P.O. BOX 530  
BLOUNTVILLE, TENNESSEE  
37617



BRANCH OFFICES  
Tennessee Courthouse -- Bristol  
Bristol 968-1941  
City Hall -- Kingsport  
Kingsport 245-2211

*Gay B. Feathers*

County Clerk  
Phone 323-6428

May 24, 1994

TO WHOM IT MAY CONCERN:

A public hearing was held May 23, 1994 at the adjourned session of the Sullivan County Board of Commissioners on - SULLIVAN COUNTY REGIONAL SOLID WASTE MANAGEMENT PLAN.

Gay B. Feathers  
SULLIVAN COUNTY CLERK

# KINGSPORT TIMES

## PUBLICATION CERTIFICATE

Kingsport, Tenn., 5/11/94

This is to certify that the Legal Notice hereto attached was published in the Kingsport Times, a daily newspaper published in the City of Kingsport, County of Sullivan, State of Tennessee, beginning in the issue of 5/8/94, and appearing ~~consecutive weeks~~—times, as per order of Dist Tennessee Development District

Signed Karen Gillenwater

**NOTICE**

Pursuant to the Solid Waste Management Act of 1991, each solid waste region is required to develop a 10 year plan. A public meeting has been scheduled by Sullivan County to discuss the Sullivan County Regional Solid Waste Management Plan. The meeting will be held at 9:00 a.m. on May 23, 1994 in the Sullivan County Commission Room. The public meeting is being held in conjunction with the County Commission meeting. County residents will have the opportunity to ask questions or make comments on the Plan. The Plan will be available for review at the Sullivan County Library, the Sullivan County Executive's office in Blountville, and the First TN Development District, 207 N. Boone Street, Suite 800, Johnson City, from 8:30 a.m. - 4:30 p.m., Monday-Friday.

Pub. 11: 05/08/94.

STATE OF TENNESSEE, SULLIVAN COUNTY, TO-WIT:

Personally appeared before me this, 11 day of May 1994, Karen Gillenwater, Legal Advertising of the Kingsport Times and in due form of law made oath that the foregoing statement was true to the best of his knowledge and belief.

Joe K. Rastel  
NOTARY PUBLIC

My commission expires 3/12 1996

## **APPENDIX E**

First  
Tennessee  
Development  
District

207 North Boone Street, Suite 800 • Johnson City, Tennessee 37604  
(615) 928-0224 • Fax (615) 928-5209

Carter  
Elizabethton  
Watauga

May 26, 1994

Greene  
Baileyton  
Greeneville  
Mosheim  
Tusculum

Dear Sullivan County Planning Commission,

Hancock  
Sneedville

As you know the Sullivan County Solid Waste Planning Board has recently completed the Sullivan County Regional Solid Waste Management Plan which meets the requirements of the Solid Waste Management Act of 1991. Due to the fact that the planning document may affect the future of a given area in the Region, the document is to be made available to the appropriate municipal and regional planning commissions.

Hawkins  
Bulls Gap  
Church Hill  
Jnt Carmel  
Rogersville  
Surgoinsville

The Solid Waste Plan is available for your review in the Sullivan County Executive's office and the Sullivan County Library, Monday through Friday 8:30 a.m. to 4:30 p.m. Any comments you may have on the Plan can be addressed to the First Tennessee Development District.

Thank you for your attention.

Sincerely,

Johnson  
Mountain City



Christopher L. Craig  
Environmental Specialist

Sullivan  
Bluff City  
Bristol  
Kingsport

Unicoi  
Erwin

Washington  
Johnson City  
Jonesborough

**First  
Tennessee  
Development  
District**

207 North Boone Street, Suite 800 • Johnson City, Tennessee 37604  
(615) 928-0224 • Fax (615) 928-5209

Carter  
Elizabethton  
Watauga

May 26, 1994

Greene  
Baileyton  
Greeneville  
Mosheim  
Tusculum

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Sneedville

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Thank you for your attention.

Sincerely,

Johnson  
Mountain City



Christopher L. Craig  
Environmental Specialist

Sullivan  
Bluff City  
Bristol  
Kingsport

Unicoi  
Erwin

Washington  
Johnson City  
Jonesborough

First  
Tennessee  
Development  
District

207 North Boone Street, Suite 800 • Johnson City, Tennessee 37604  
(615) 928-0224 • Fax (615) 928-5209

Carter  
Elizabethton  
Watauga

May 26, 1994

Greene  
Baileyton  
Greeneville  
Mosheim  
Tusculum

Dear Bristol Planning Commission,

Hancock  
Sneedville

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Thank you for your attention.

Sincerely,

Johnson  
Mountain City

  
Christopher L. Craig  
Environmental Specialist

Sullivan  
Bluff City  
Bristol  
Kingsport

Unicoi  
Erwin

Washington  
Johnson City  
Jonesborough

**State of Tennessee, SULLIVAN County**

I, Gay B. Feathers, Clerk of said Sullivan County, do hereby certify that the foregoing Resolution Authorizing Approval of Solid Waste Management Plan is a full, true and perfect copy of Resolution Authorizing Approval of Solid Waste Management Plan

as appears of record now on file in my office, In Commission Minutes Book 18 Page 554

Witness My hand and seal, at office in Blountville, TN, this the 11th day of May, 1994.

*Gay B Feathers*

TO THE HONORABLE Wm. H. "JOHN" MCKAMEY, COUNTY EXECUTIVE, AND THE MEMBERS OF THE SULLIVAN COUNTY BOARD OF COMMISSIONERS IN Regular SESSION THIS THE 18th DAY OF April 1994.

RESOLUTION AUTHORIZING Approval of Solid Waste Management Plan

WHEREAS, TENNESSEE CODE ANNOTATED; SECTION \_\_\_\_\_, AUTHORIZES COUNTIES TO \_\_\_\_\_

NOW, THEREFORE BE IT RESOLVED by the Board of County Commissioners of Sullivan County, Tennessee, assembled in Regular Session on the 18th day of April 1994

THAT WHEREAS, The Solid Waste Management Act of 1991 requires all solid waste regions to adopt and submit a solid waste management plan to the State by July 1, 1994, and

WHEREAS, Sullivan County is a one-county region, and

WHEREAS, A management plan has been prepared for Sullivan County by the First Tennessee Development District, now

THEREFORE BE IT RESOLVED, That the Sullivan County Board of Commissioners approves the Solid Waste Management Plan as prepared by First Tennessee Development District.

All resolutions in conflict herewith be and the same rescinded insofar as such conflict exist.

This resolution shall become effective on \_\_\_\_\_, 19\_\_, the public welfare requiring it.

Duly passed and approved this 18th day of April, 1994

Attested: B. Feathers Date: 4/18/94 Wm. H. "John" McKamey Date: 4-18-94  
County Clerk County Executive

INTRODUCED BY COMMISSIONER Hyatt ESTIMATED COST: \_\_\_\_\_  
 SECONDED BY COMMISSIONER Milhorn FUND: \_\_\_\_\_

Committee Action	Approved	Disapproved	Deferred	Date
Administrative				
Budget				
Executive				

Commission Action	Aye	Nay	Pass	Absent	Total
Roll Call					
Voice Vote	X				

COMMENTS: WAIVER OF RULES APPROVED 4/18/94 VOICE VOTE