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MUNICIPAL SOLID WASTE REGIONAL PLAN
FOR THE
SOUTHEAST TENNESSEE SOLID WASTE PLANNING REGION
NOVEMBER 7, 1994

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TABLE OF CONTENTS

i. PREFACE/DEFINITIONS

ii. EXECUTIVE SUMMARY

CHAPTER I	Description of the Municipal Solid Waste Region
CHAPTER II	Analysis of the Current Solid Waste Management System for the Region
CHAPTER III	Growth Trends, Waste Projections and Preliminary System Structure
CHAPTER IV	Waste Reduction
CHAPTER V	Waste Collection and Transportation
CHAPTER VI	Recycling
CHAPTER VII	Composting, Solid Waste Processing, Waste-to-Energy and Incineration Capacity
CHAPTER VIII	Disposal Capacity
CHAPTER IX	Public Information and Education
CHAPTER X	Problem Wastes
CHAPTER XI	Implementation: Schedule, Staffing and Funding
CHAPTER XII	Allocation of Implementation Responsibilities: Plan Adoption and Submission
CHAPTER XIII	Flow Control and Permit Application Review

APPENDICES (Under Separate Cover)

APPENDIX A	Legal Documentation and Organization of the Region
APPENDIX B	Documentation for Adjustments to the Base Year Generation
APPENDIX C	Public Participation Activities
APPENDIX D	Exports and Imports
APPENDIX E	Review by Appropriate Municipal or Regional Planning Commission

i. Preface/Definitions

Preface

In 1990 the state of Tennessee adopted the Solid Waste Disposal Act of 1990 in order to better regulate the management of solid waste. In 1991 the Environmental Protection Agency (EPA) of the Federal Government adopted Subtitle D, a new set of regulations which established construction, operating, design, monitoring, closure and permitting standards for municipal solid waste landfills. The new Subtitle D requirements are radically different than previous regulations; compliance will change the way we manage the generation and disposal of our waste and through regulatory and economic pressure will force us to reduce as much as possible the amount of waste which must be landfilled.

The state of Tennessee revised the State Solid Waste Disposal Act of 1990 and in June of 1993 adopted a new set of standards which were equal to or more stringent than the requirements of the EPA Subtitle D. These requirements were dated retroactively to March 1990.

The net effect of the new requirements will be to dramatically change our approach to solid waste management and disposal in this state and in the country in order to protect our environment and control the costs of solid waste disposal.

In response to the higher level of focus on the practice and cost of solid waste disposal, the state of Tennessee (in 1991) adopted the "Solid Waste Management Act of 1991." Following is a summary of the requirements of the SWM Act of 1991 as presented in the state "Guidelines for Preparation of a Municipal Solid Waste Regional Plan:

The Solid Waste Management Act of 1991 requires the formation of **municipal solid waste planning regions**, based on the recommendations of a District Needs Assessment prepared under the leadership of the state's nine Development Districts. The planning regions were to be formed by the end of December 1992. Each region was then directed to prepare a ten-year plan describing how the region will resolve its SWM needs.

The purpose of the District Needs Assessment was threefold: (1) to carry out an inventory and analysis of the existing solid waste management system; (2) to define needs for additional services and facilities for the next ten years; and (3) to recommend **rational waste disposal areas**, which would provide the nucleus for a municipal solid waste planning region.

The purpose of the regional plan is to set forth how planning regions will meet the needs identified in the "Needs Assessment." The regional plan should be based on the inventory of facilities, services and programs provided in the District Needs Assessments. If the planning region consists of more than one county, the data in the county profiles must be aggregated, and the adequacy of the newly constituted region to provide needed capacity evaluated. The planning region must then define its specific needs - quantitatively, if possible.

It will not be necessary to revise the data collected in the District Needs Assessment, unless there has been a significant change in waste generation or management capacity during the intervening year, which was not projected in the Assessment (for example, the sudden closure of a major industry, or construction of a new processing facility). The regional plan may utilize data from the District Needs Assessment where appropriate.

The regional plan will be specific and more detailed than the District Needs Assessment. The regional plan should address all required plan elements and follow the organization format set forth in the Guidelines. Much of the plan will be narrative and may be supported by tables, figures and maps prepared by the region. The base year is 1993, and the planning horizon is 1994-2003.

The plan will consist of three parts: (1) and Executive Summary; (2) a detailed plan; and (5) Appendices.

The plan is to be submitted to the State Planning Office **no sooner than September 30, 1993, and no later than June 30, 1994**, after public hearings have been conducted in the region.

The Statutory Authority requiring preparation of a plan and describing its content is found in the following sections of the Tennessee Code Annotated: T.C.A. Sections 68-31-813(c); 68-31-814(a); 68-31-814(b)(6); 68-31-842; 68-31-851(b); 68-31-861(f); 68-31-871(a) and (b); and indirectly, in 68-31-866(b); and 49-7-121.

In July 1993 Draper Aden Associates was commissioned by the Southeast Tennessee Solid Waste Planning Region Board to prepare the required 10 year solid waste management plan. As work on the plan progressed, it was determined that the most efficient approach would be to address the requirements of the 10 counties which comprise the region on both an individual and regional basis as follows:

- Prepare customized solid waste management plans for each of the region's ten (10) counties. These individual plans will reflect the uniqueness and sensitivities of the respective counties, and will not necessarily follow the exact format and requirements of the "State Guidelines".
- Prepare (in addition to the above) a regional plan which incorporates the requirements of each of the ten (10) counties. The regional plan will follow the format and requirements of the "State Guidelines".

Note that the regional plan presented herein frequently refers to the individual county reports for further details and back-up information. The individual plans are presented [under separate cover(s)] as follows:

1. Bledsoe/Sequatchie Counties (sub-region)
2. McMinn/Meigs/Polk Counties (sub-region)
3. Grundy County
4. Marion County
5. Hamilton County
6. Bradley County
7. Rhea County

Definitions

There are many terms in common usage pertaining to solid waste and its various forms and methods of disposal. Unfortunately, not all terms mean the same to different people. For clarity, the following definitions apply to terminology and abbreviations used within this report.

Abatement: The methods of reducing the degree or intensity of pollution, also the use of such a method.

BTU (British Thermal Unit): The quantity of heat required to increase the temperature of one pound of water one degree Fahrenheit at or near 39.2°F.

Bulky Wastes: Large items of refuse including, but not limited to, appliances, furniture, large auto parts, trees, branches and stumps which cannot be handled by normal solid waste processing, collection or disposal methods.

Capacity (Incinerator): The amount of solid and/or semi-solid wastes that can be burned and converted into an inoffensive gas and a sterile residue, containing little or no combustible material, in a given time period. Usually expressed in pounds per hour or tons per 24 hours.

Combustibles: Materials in the waste stream which are burnable, such as paper, plastic, leather, textiles, leaves and other organic materials.

Commercial Waste: Waste material which originates in wholesale, retail or service establishments such as office buildings, stores, markets, theaters, hotels and warehouses.

Disposal: Placement of waste materials within an incinerator, a sanitary landfill, a resource recovery facility or other site for final disposition.

EPA: Federal Environmental Protection Agency

Energy Recovery: Resource recovery in which the organic fraction of waste is converted to some form of usable energy.

Governmental Waste: Same as institutional waste.

Incineration: A volume-reducing process for burning solid, semi-solid or gaseous combustible wastes resulting in an inoffensive gas and a sterile residue containing little or no combustible material.

Industrial Waste: Waste materials originating in manufacturing, processing and repair facilities.

Institutional Waste: Waste materials originating in schools, hospitals, research institutions and public buildings.

Litter: Solid waste discarded outside the established collection disposal system. (Solid waste properly placed in containers is often referred to as trash and garbage; uncontainerized, it is referred to as litter).

Materials Recovery: The extraction of materials from waste for sale.

Materials Recovery Facility (MRF): Plant designed for processing of waste to remove and/or process recyclable materials.

Municipal Solid Waste (MSW): The combined waste stream of residential, commercial, institutional and non-hazardous industrial waste materials.

Non-Combustible: Waste material which is not burnable through typical incineration.

Particulates: Suspended small size particles of ash, charred paper, dust, soot or other partially incinerated matter carried in the products of combustion.

PURPA: The Public Utilities Regulatory Policies Act of 1978. A federal law whose key provision mandates private electric utilities must buy power generated by producers at rates set by state public utility commissions and equal to the "avoided cost" of power production of the utility. The Act is intended to guarantee a market for producers of electricity at rates equal or close to the utilities' marginal production costs.

Refuse Derived Fuel (RDF): When as-collected municipal solid waste is processed to remove some non-combustibles and/or recyclable materials to produce a resultant product with less contaminants and/or non-combustibles than unprocessed waste.

Residential Waste: Waste materials generated in houses and apartments.

Residue: The materials remaining after completion of a chemical or physical process, such as burning, evaporation, distillation or filtration.

Resource Conservation and Recovery Act (RCRA) of 1976: A federal law amending the Solid Waste Disposal Act of 1965 and expanding on the Resource Recovery Act of 1970 to provide a program to regulate hazardous waste; to eliminate open dumping; to promote solid waste management programs through financial and technical assistance; to further solid waste management options in rural communities through government grants; and to conduct research, development and to demonstrate programs for the betterment of solid waste management, resource conservation and recovery practices.

Resource Recovery: A term describing the extraction and utilization of materials and energy from the waste stream. Materials recovered, for example, would include metals and glass which can be used as "raw materials" in the manufacture of new products. Energy is recovered by utilizing components of waste as a fuel.

Sludge: Waste materials in the form of a concentrated suspension of waste solids in water. One type of sludge is a by-product of the treatment of sewage. In limited application, sludge has been disposed of with municipal solid waste.

Solid Waste Management: Control of the entire process of generation, storage, collection, transportation, processing, recovery and disposal of solid waste.

Source Separation: The segregation and collection of individual recyclable components before they become mixed into the solid waste stream.

State Planning Office: SPO

Subtitle D: Refers to Subtitle D of the Resource Conservation and Recovery Act. It is the primary federal program for regulating the location, operation, design and closure of sanitary landfills.

Tons Per Day (TPD): A unit of measure referring to the number of 2,000 pound tons in a 24 hour day. Unless otherwise noted, TPD will be expressed as a 7 day per week average.

Transfer Station: A supplemental transportation system used as an adjunct to route collection vehicles to reduce haul costs or add flexibility to the operation.

TVA: Tennessee Valley Authority

Volume Reduction: The processing of waste materials so as to decrease the amount of space the materials occupy. Reduction is presently accomplished by three major processes: (1) mechanical, which uses compaction techniques (sanitary landfill, baling, etc.) and shredding; (2) thermal, which is achieved by heat (incineration and pyrolysis) can reduce volume 80 to 90 percent; and (3) biological, in which the organic waste fraction is degraded by bacterial action (composting, etc.).

White Goods: Discarded household appliances such as refrigerators, stoves and washers (may be any color).

Yard Waste: Wastes which originate from yard and street trimming such as leaves, tree and shrub trimmings, grass clippings, etc.

ii. Executive Summary

EXECUTIVE SUMMARY
MUNICIPAL SOLID WASTE REGIONAL PLAN
FOR THE
SOUTHEAST TENNESSEE SOLID WASTE PLANNING REGION
JUNE 7, 1994



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EXECUTIVE SUMMARY

TABLE OF CONTENTS

DEFINITION OF REGION AND RATIONALE FOR ITS FORMATION

SUMMARY OF REGIONAL NEEDS

REGIONAL GOALS AND OBJECTIVES

SYSTEM ELEMENTS INCLUDED IN REGIONAL PLAN & COORDINATION WITH EXISTING

IMPLEMENTATION

ESTIMATED 10-YEAR SYSTEM COST

ALLOCATION OF RESPONSIBILITY

BASE MAP OF REGION

EXECUTIVE SUMMARY

● Brief Description of the Region and the Rationale for its Formation

The Southeast Tennessee Planning Region (SETPR) is comprised of 10 counties including 27 governmental entities as follows:

<u>County</u>	<u>Major City(ies)</u>
Bledsoe	Pikeville
Bradley	Cleveland
Grundy	Gruetii Laager/Tracy City
Hamilton	Chattanooga/East Ridge/Red Bank/Signal Mt./Lookout Mt.
Marion	South Pittsburgh/Jasper
McMinn	Athens
Meigs	Decatur
Polk	Benton
Rhea	Dayton
Sequatchie	Dunlap

The SETPR is the largest solid waste planning region in the state of Tennessee encompassing an area of 3,781 square miles and a population of approximately 506,000. The SETPR has been greatly assisted in its organizational efforts by the Southeast Tennessee Development District which encompasses the identical geographic area and governmental entities.

Enclosed is the regional base map indicating political boundaries, major roads, waterways and railroads.

The Southeast Tennessee Planning Region was formed as a reflection of the common interest as well as common boundaries between the ten member counties. It was felt that the cost-efficiencies brought about by an increased population base would expand the option horizon across the board. This would allow for more options in the area of recycling, composting and waste-to-energy solid waste management. It was further noted that existing solid waste management facilities within the region were located within a reasonable distance of the main transportation corridors which provided for ease of accessibility between the facilities. The most important aspect of this decision was the cultural and historical ties between the governments and citizens of this region through the Southeast Tennessee Development District. These ties allow for the pursuit of common goals and leaves no impediments to the implementation of region-wide systems should they appear advantageous in the plan.

In joining together to form the region, the counties and cities which comprise the region demonstrated that they have the desire and ability to solve common problems together. By keeping the regional waste flow together for planning purposes the region will be in a position to look at all options relating to an integrated waste management plan.

The Southeast Tennessee Municipal Solid Waste Planning Board

General: The Board was established in conformance with the requirements of the State of Tennessee Solid Waste Management Act of 1991 and Board Members were appointed as follows:

	<u>Appointee</u>	<u>Term (Years)</u>	<u>Appointed by:</u>
1.	William Reed	2	Bledsoe Co. Executive
2.	Donna Hubbard	4	Bradley Co. Executive
3.	Riley Anderson	6	Grundy Co. Executive
4.	Ken Castleberry	6	Hamilton Co. Executive
5.	Ron Banks	4	McMinn Co. Executive
6.	Howell Moss	2	Marion Co. Executive
7.	Garland Lankford	2	Meigs Co. Executive
8.	Barry L. Massengill	6	Polk Co. Executive
9.	Robert Aikman	4	Rhea Co. Executive
10.	Bill Harmon	4	Sequatchie Co. Executive
11.	Marvin Bollinger	4	Regional Municipalities
12.	Jack Marcellis	2	Mayor of Chattanooga
13.	Craig Bivens	6	Mayor of Cleveland
14.	Jerry Robinson	2	Region Municipalities
15.	Rick Sonnenburg	6	Region Municipalities

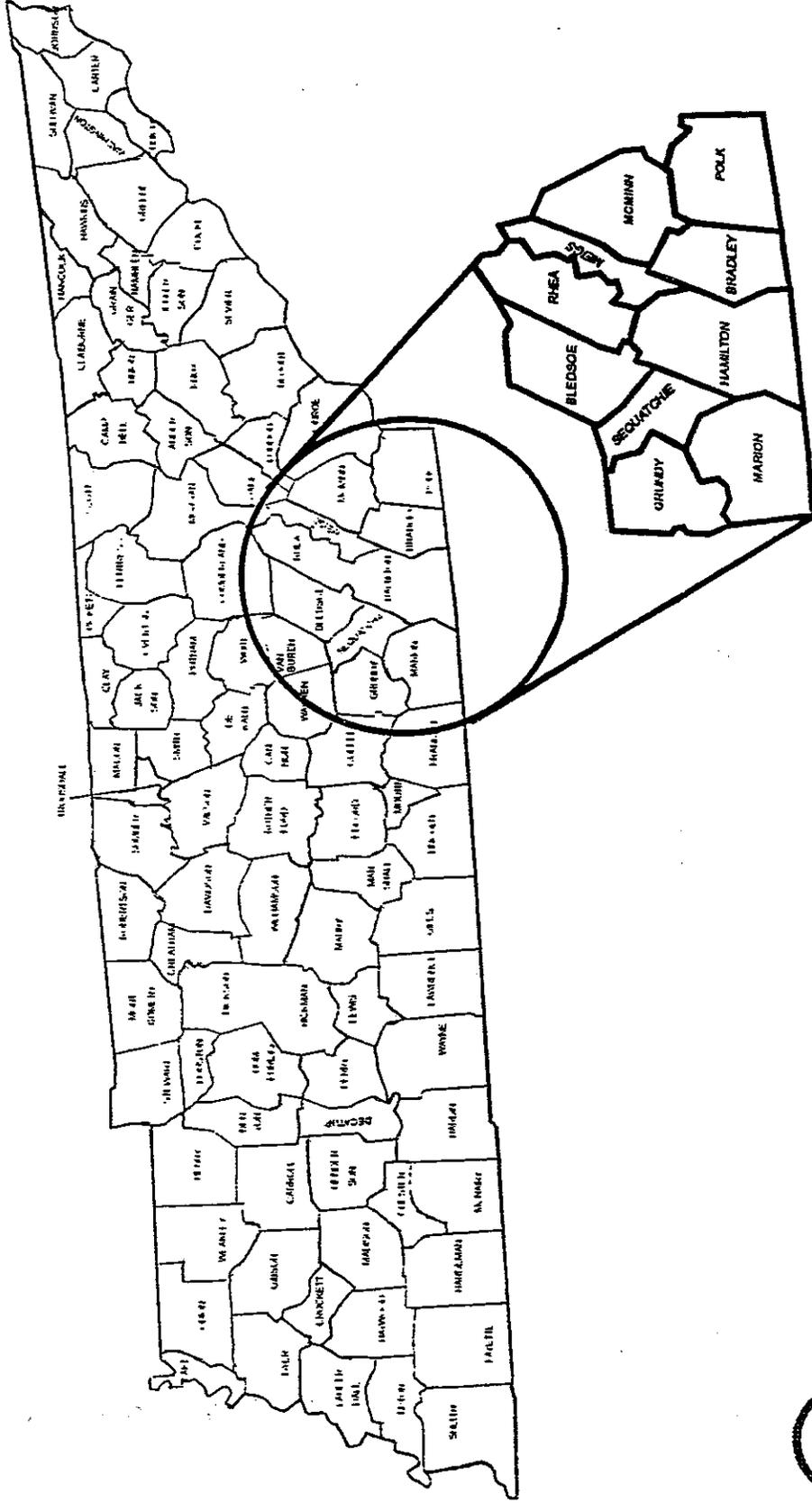
The first organizational Board Meeting was conducted on May 25, 1993 and officers were elected as follows:

Chairman:	Jack Marcellis
Vice Chairman:	Howell Moss
Vice Chairman:	Ron Banks

Regularly scheduled meetings were established for the fourth Tuesday of each month.

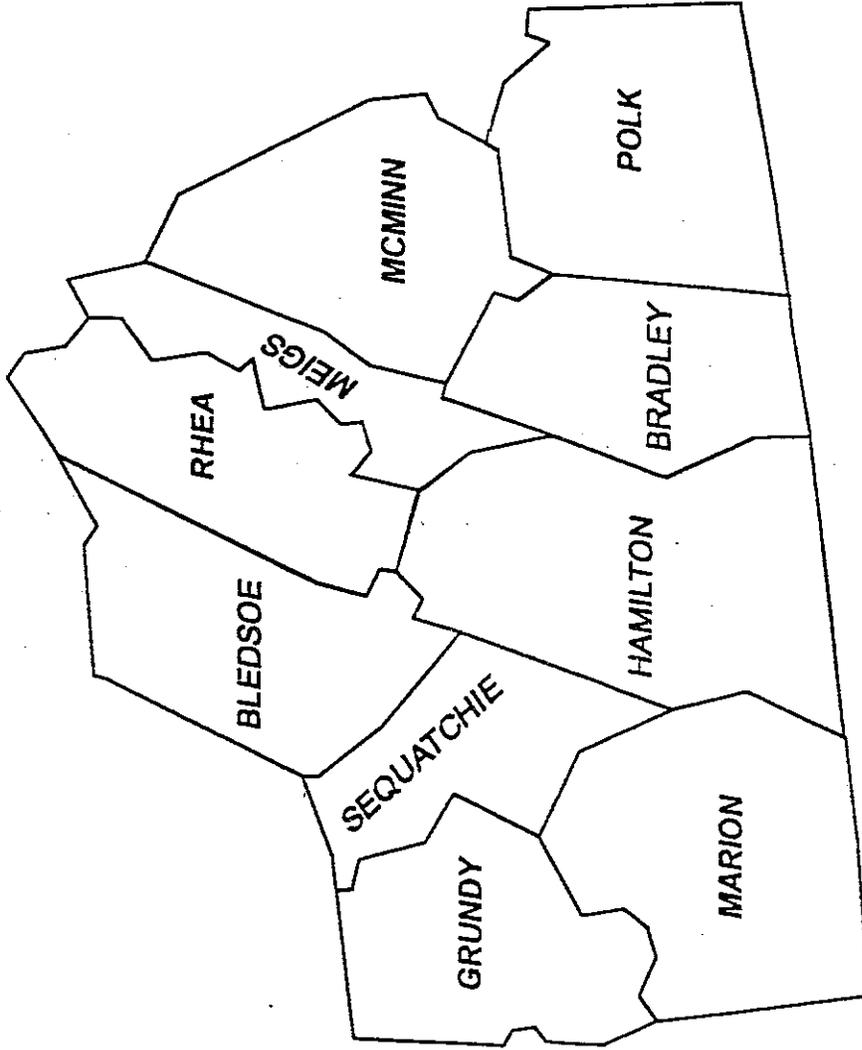
In addition to Regional Solid Waste Planning Board, MSW Planning Advisory Committees have been established in accordance with the requirements of the Solid Waste Management Act of 1991. Interaction between the Board and the Advisory Committees is accomplished through open meetings, distribution of information (oral and written) and one on one communication with participants. A list of the advisory committees and representatives is on file with the Regional Solid Waste Planning Board.

SOUTHEAST TENNESSEE SOLID WASTE PLANNING REGION



Draper Aden Associates

**SOUTHEAST TENNESSEE
SOLID WASTE PLANNING REGION**



Draper Aden Associates

Regional Population Projections 1994-2003

Regional Population 1993:505,030

Projection Year

County	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Bledsoe	9,852	9,989	9,945	9,991	10,038	10,085	10,132	10,150	10,198	10,246
Bradley	76,115	76,726	77,343	77,964	78,590	79,221	79,851	80,280	80,922	81,569
Grundy	13,118	13,057	12,997	12,938	12,878	12,819	12,761	12,688	12,748	12,808
Hamilton	283,516	283,014	282,513	282,013	281,514	281,016	280,524	279,404	279,907	280,411
McMinn	42,385	42,386	42,387	42,387	42,388	42,388	42,389	42,309	42,310	42,310
Marion	25,055	25,104	25,153	25,202	25,251	25,300	25,349	25,350	25,401	25,451
Meigs	8,267	8,326	8,385	8,446	8,506	8,567	8,628	8,671	8,733	8,796
Polk	13,601	13,591	13,580	13,570	13,560	13,549	13,539	13,498	13,509	13,520
Rhea	24,353	24,356	24,358	24,360	24,362	24,365	24,367	24,321	24,324	24,327
Sequatchie	8,990	9,021	9,053	9,085	9,118	9,150	9,182	9,193	9,226	9,259
Regional Total	505,252	505,570	505,714	505,956	506,205	506,460	506,722	505,864	507,278	508,697

SE - REGION

● **Summary of Regional Needs (Existing Solid Waste Management)**

Waste Generation:

The following table (ES-1) shows the estimates for the amount of waste which will be generated within the region during the 10-year plan period.

Table ES-1

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

County	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Bledsoe	5,389	5,404	5,440	5,465	5,490	5,516	5,542	5,552	5,578	5,604
Bradley	60,782	61,270	61,762	62,257	62,758	63,262	63,765	64,108	64,621	65,137
Grundy	5,821	5,794	5,767	5,741	5,714	5,688	5,662	5,630	5,657	5,684
Hamilton	464,631	610,808	612,927	615,106	617,348	619,652	622,027	623,438	627,573	631,776
McMinn	41,362	41,363	41,364	41,364	41,365	41,365	41,366	41,287	41,288	41,288
Marion	21,577	21,619	21,662	21,704	21,745	21,788	21,831	21,874	21,918	21,960
Meigs	2,732	2,751	2,771	2,791	2,811	2,831	2,851	2,865	2,885	2,906
Polk	6,032	6,027	6,023	6,018	6,013	6,009	6,004	6,000	5,981	5,987
Rhea	18,457	18,459	18,461	18,462	18,464	18,466	18,468	18,433	18,435	18,437
Sequatchie	4,917	4,934	4,952	4,969	4,987	5,005	5,002	5,028	5,046	5,059
Total	631,700	778,429	781,129	783,877	786,695	789,582	792,518	794,215	798,982	803,838

* Quantity derived from Table III-2 plus economic growth factor of 3.2%.

Waste Reduction:

In order to meet the waste reduction requirements as set forth in the Solid Waste Management Act of 1991, the region must dispose in Class I landfills 25% less waste on a per capita basis than was estimated in a University of Tennessee Study which was produced during 1989. The goals for the amount of waste which can be disposed of in Class I landfills are listed in the following table (ES-2). Diversion requirements are shown in Figure ES-1 and Table ES-2.

Figure ES-1: Projected 1995 Shortfall to Meet Diversion Requirements

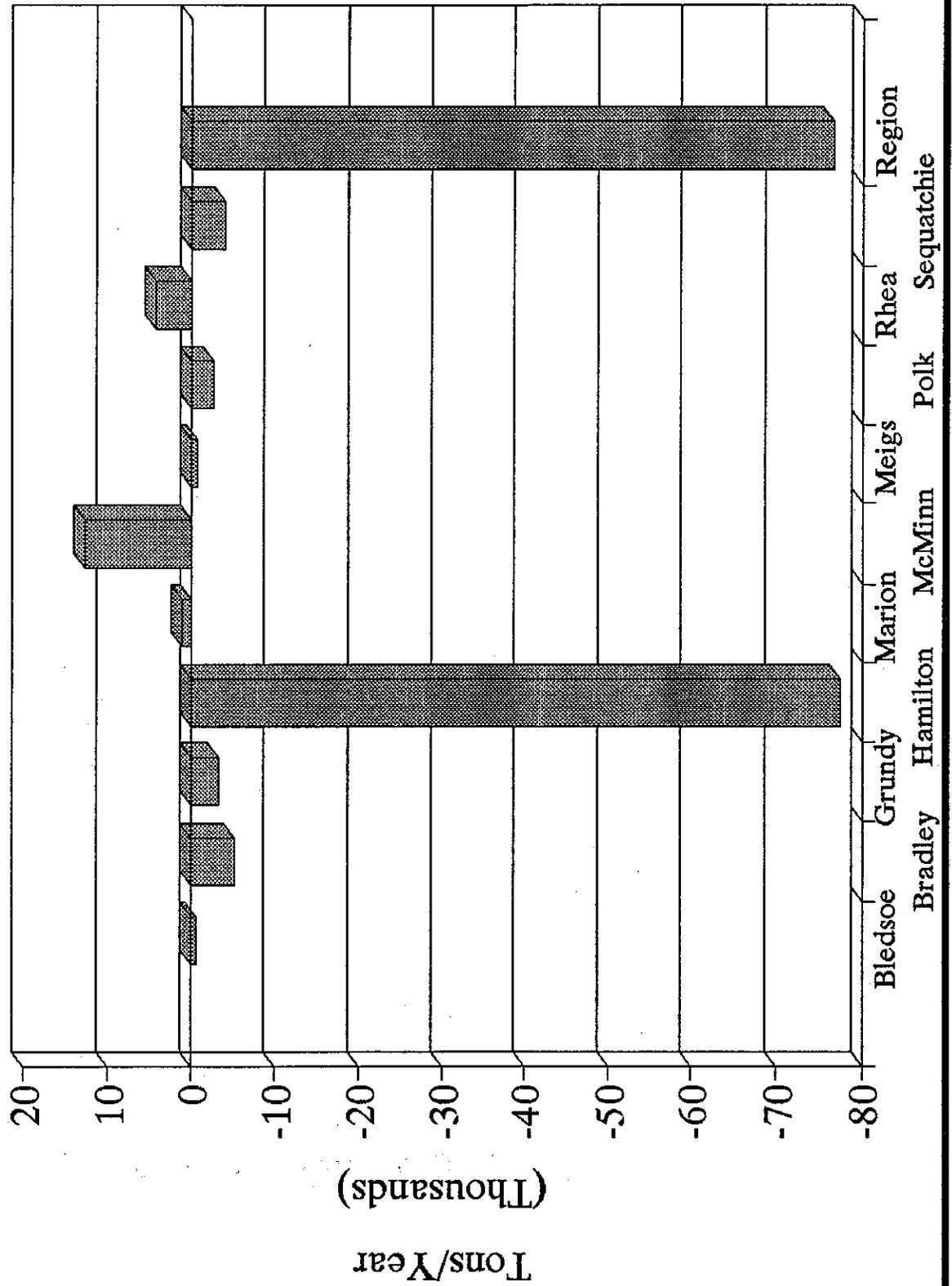


Table ES-2
Summary of Waste Diversion

Variance Requested	Tons	Population	Per Capita	Baseline Per Capita	Per Capita Goal (x 0.75)	Projected 1995 Population	Disposal Req'd. to meet	1995 Waste		Projected Waste Generation	Diversion Goal (Difference)	Projected 1995 Per Capita
								Population	Generation			
Yes	7,862	9,650	0.81	0.81	0.61	9,889	6,102	5,404	(698)	0.55		
Yes	65,520	72,800	0.90	0.90	0.68	76,726	52,174	61,270	9,096	0.80		
Yes	12,556	13,404	0.94	0.94	0.70	13,057	9,140	5,794	(3,346)	0.44		
Yes	451,110	284,081	1.59	1.59	1.19	283,014	458,106	610,808	152,702	2.16		
Projected '95	610,808	283,014	2.16	2.16	1.62							
Yes	26,000	24,816	1.05	1.05	0.79	25,104	19,832	20,949	1,117	0.83		
Yes	38,454	42,383	0.91	0.91	0.68	42,386	28,822	41,363	12,541	0.98		
No	4,555	8,600	0.53	0.53	0.40	8,326	3,580	2,751	(829)	0.33		
Yes	11,678	13,639	0.86	0.86	0.64	13,591	8,834	6,027	(2,807)	0.44		
Yes	19,259	24,351	0.79	0.79	0.59	24,356	14,370	18,461	4,091	0.76		
Yes	11,794	8,837	1.33	1.33	1.00	9,021	9,021	4,934	(4,087)	0.55		
Total	808,486	501,494	1.61	1.61	1.21	505,470	609,981	777,761	167,780	1.54		

- NOTE:
- 1) Hamilton and Rhea County waste quantities are from scale data, other counties from UT waste generation study; Population based on UT study or waiver request based on census information.
 - 2) Hamilton County's 1995 wastestream is projected to include an industrial sand waste; based on this, Hamilton County will request a variance in 1995 in order to account for, and reflect these changes.

As can be seen, the above numbers do not reflect 25% of the total waste stream. The reason for the discrepancy between the above diversion requirements and the "25%" waste reduction goal is that there were noticeable differences between the 1989 waste generation rates which were determined in the University of Tennessee study and the waste generation rates determined to be applicable in 1993 which was the base year for this planning information.

Waste Collection and Transportation:

The Solid Waste Act of 1991 requires all counties to provide a minimum level of collection service consisting of an appropriate number of manned, fenced convenience centers. The following table (ES-3) provides a summary of the requirements and recommendations regarding convenience centers.

In addition to the minimum level of service, most counties and municipalities within the region are providing a higher level of service in the form of public operated curbside waste pick-up or privately operated contract service.

**Table ES-3
Summary of Convenience Center Requirements**

	Convenience Center Requirements						
	Minimum State Mandated Qty of Convenience Centers based on:		Existing	Min. Add'l. Req'd.	Quantity Recommended	Add'l. Req'd. to meet Recommendation	
	Population	Area					
Bledsoe	1	3	0	1	4	4	
Bradley	4	2	1	1	2	1	
Grundy	2	2	2	0	7	5	
Hamilton	9	3	0	3	see note	see note	
Marion	3	3	0	3	5	5	
McMinn	2	3	1	1	see note	see note	
Meigs	1	2	3	0	0	0	
Polk	2	3	6	0	0	0	
Rhea	2	2	2	0	4	2	
Sequatchie	1	2	0	1	4	4	
Total	27	25	15	10	26	21	

NOTE: County investigating collection programs in lieu of convenience centers to meet state requirements

Recycling:

The Solid Waste Act of 1991 requires that each county provide at least one permanent recycling collection center within the county.

The existing recycling provisions are as follows:

Bledsoe	None
Bradley	Drop-off plus curbside in Cleveland
Grundy	Drop-off in Tracy City and Coalmont
Hamilton	Drop-off in Chattanooga, Collegedale and Orange Grove Curbside in Chattanooga, Lookout Mtn., Red Bank, East Ridge & Signal Mtn. Processing facility - Orange Grove & BFI
Marion	Drop-off in South Pittsburg and curbside in South Pittsburg
McMinn	Drop-off in Athens, Etowah and County
Meigs	None
Polk	None
Rhea	Drop-off in County and curbside in Dayton and Spring City
Sequatchie	Drop-off in Dunlap

As can be seen from the preceding programs, the recycling program(s) in the region must be expanded and strengthened significantly in order to achieve a larger portion of the waste reduction/diversion goal.

Yard Waste/Sludge Composting:

Currently no significant yard waste or sludge composting is in operation in the region. However, as indicated later herein, yard waste composting is recommended for Bradley and Marion Counties and sludge composting is recommended for Hamilton County (Chattanooga).

Waste Processing and Waste-To-Energy Systems:

There are no MSW processing or waste-to-energy/incineration systems operating within the region except the air curtain brush/wood burner in Hamilton County. However, future waste-to-energy is a very real option as presented in Chapter VII herein.

Disposal Facilities - Landfills and Balefills:

Table ES-4 lists the existing MSW landfills currently operating in the region.

**Table ES-4
Existing Municipal Solid Waste Landfills in the Region***

County	Name of Landfill	Location	Permitted Capacity (acres)	Current Rate of Waste Accepted (tons/day)	Remaining Capacity (acres)	Remaining Air Space (yard ³)
Bledsoe	Bledsoe-Sequatchie	Pikeville	24	50	20	1,000,000
Bradley	Bradley	Cleveland	70	200	15	100,000
Grundy	Grundy	Coalmont	35	20	20	15,000
Hamilton	Hamilton	Birchwood Pike	37	200-250	16	350,000
Hamilton ¹	Summit	Summit	160	1,200-1,500	160	3,000,000
McMinn ²	McMinn	Athens	25-40	150	66	200,000
Marion	Marion	Jasper	81	60	15	500,000
Rhea	Rhea	Evensville	45	60	<1	10,000
Regional Total	n/a	n/a	n/a	1,940-2,290	n/a	5,175,000

*Information shown is from Needs Assessment

¹Summitt plans to upgrade permitted area, will give 2,000,000 yd add'l space

²McMinn plans to upgrade permitted area, will give 2,500,000 add'l space

**Table ES-5
Public Information and Education Programs**

County	No. Staff County/City Recycling Education	County Recycling Coordinator	County/City Sponsored Recycling Program	Educational Publications Material	County/City Recycling Coalition	Industry Sponsored Programs
Bledsoe	none	none	none	none	none	none
Bradley	none	none	none	yes, minimal	none	none
Grundy	none	none	none	none	none	none
Hamilton	none	none	yes, Chattanooga	yes	Chattanooga, Audubon Society	none
McMinn	none	none	none	none	none	yes
Marion	none	none	none	yes, brochures	Marion County Recycling Group	none
Meigs	none	none	none	none	none	none
Polk	none	none	none	none	none	none
Rhea	none	none	none	none	none	none
Sequatchie	none	none	none	none	none	none

Problem Wastes:

The Solid Waste Act of 1991 requires each county in the state to provide appropriate collection for the following items:

Household Hazardous Waste - A state program is being offered to provide HHW collection on an annual basis to those counties requesting this service. This program must be continued by the individual counties after the state program ceases in 1996.

Waste Tires - Each county must construct or designate a location for waste tires to be stored prior to the State shredding equipment coming to shred the tires for landfilling.

Waste Oil - Each county is required to provide at least one waste collection location.

Lead Acid Batteries - Each county is required to provide a collection program within the county for lead acid batteries. This can be in conjunction with private efforts.

Litter - Each county is provided to plan for proper utilization of the litter grant money provided by the Tennessee Department of Transportation.

END - "Summary of Regional Needs (Existing Solid Waste Management)"

- **Regional Goals and Objectives**

Waste Collection and Transportation:

It is the intent of the region and the counties which comprise the region to provide a level of service to their citizens which is superior to the minimum level required by the State of Tennessee. This will be accomplished with the provision of additional strategically located convenience centers and expanded curbside collection service. The plan calls for at least twenty-three (23) new convenience centers in the region (Reference - Table ES-3 previously shown).

Recycling, Composting, Waste Reduction/Diversion:

The short term goal of this plan is to achieve the 25% reduction from the per capita waste generation rates as developed in the 1989 University of Tennessee Study "Solid Waste Planning for Tennessee" by the beginning of 1996 and then to maintain that diversion rate throughout the 10-year study period.

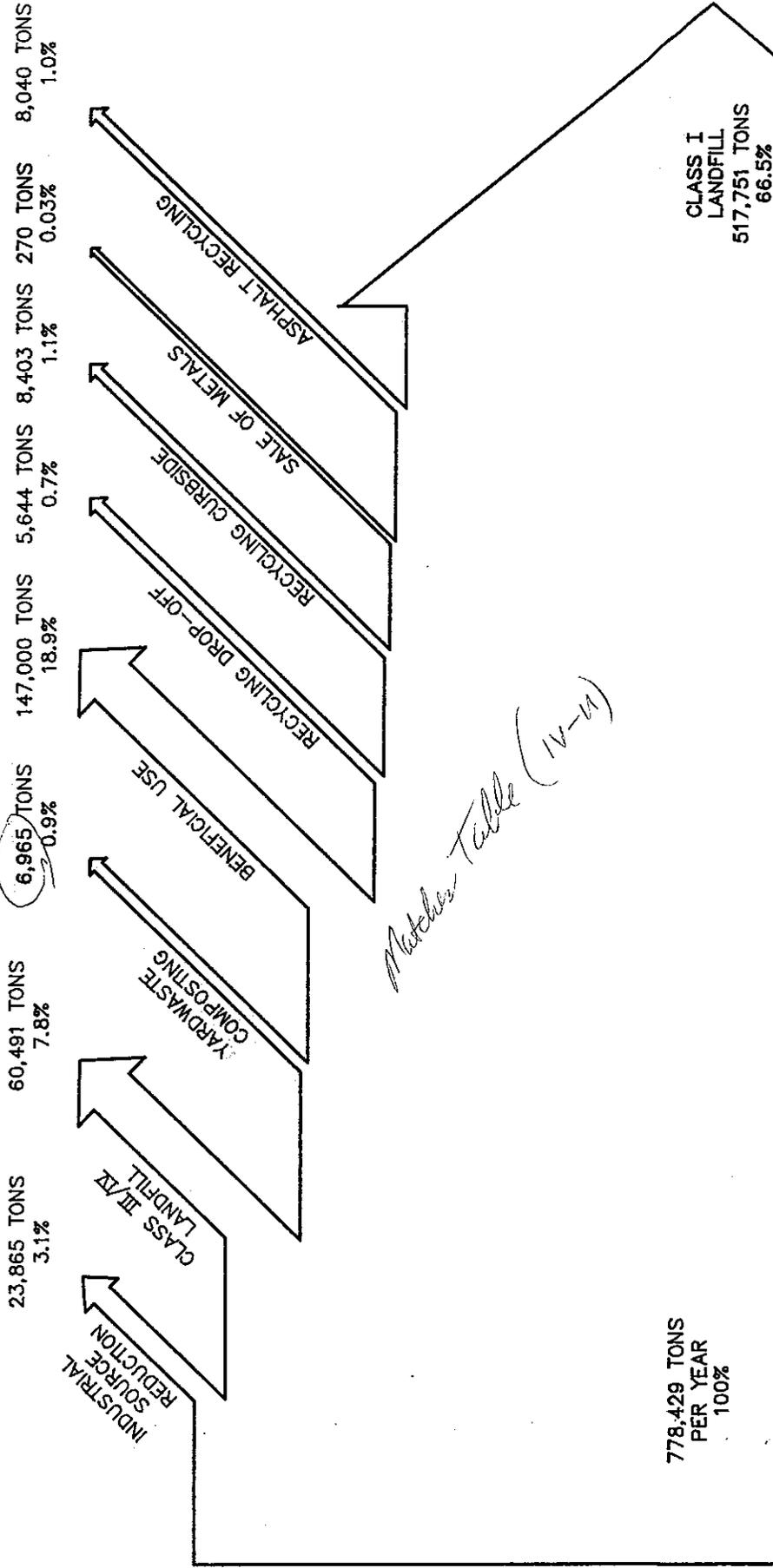
In addition to addressing the above short term goal, it is recommended that the region continue the evaluation of the waste-to-energy option described in Chapter VII herein and keep current regarding the needs of the region and the availability of new technologies in composting/recycling. The following Table ES-6 presents a summary of the waste reduction goal(s) for the region and the various elements involved in the plan to achieve the goal(s). Table ES-7 is a proportional diagram depicting the regional goal(s) by plan element.

Table ES-6
Southeast Tennessee Planning Region
1995 Regional Waste Diversion Summary, Tons/Year

	Waste Generated		Industrial Source Reduction		Class III/IV Landfill		Yardwaste Composting		Beneficial Use		Recycling Drop-Off		Recycling Curbside		Sale of Metals		Asphalt Recycling		Class I Landfill		Total Diversion	
																					Proposed	Goal
Bledsoe	5,404																			8,916	1,422	(4,785)
Sequatchie (Sub-region)	4,934	0	1,180	0	0	0	0	0	0	0	242	0	0	0	0	0	0	0	47,124	14,146	9,096	
Bradley	61,270	613	5,475	6,714	0	0	0	0	0	0	349	995	0	0	0	0	0	0	5,001	793	(3,346)	
Grundy	5,794	0	673	0	0	0	0	0	0	0	120	0	0	0	0	0	0	0	20,467	1,152	1,117	
Marion	21,619	67	595	251	0	0	0	0	0	0	239	0	0	0	0	0	0	0	401,905	230,157	152,702	
Hamilton	610,808	20,335	22,554	21,254	0	147,000	4,153	6,551	270	0	0	0	0	0	0	0	0	0	0	0	0	0
McMinn	41,363																					
Meigs	2,751	2,740	5,840	0	0	0	0	0	0	0	331	0	0	0	0	0	0	0	41,230	8,911	8,905	
Polk (Sub-region)	6,027																					
Rhea	18,459	110	2,920	0	0	0	0	0	0	0	210	857	0	0	0	0	0	0	14,362	4,097	4,089	
Total	778,429	23,865	60,491	6,965	147,000	5,644	8,403	270	0	0	5,644	8,403	270	8,040	517,751	260,678	167,778					
Percentage	100.00%	3.07%	7.77%	0.89%	18.88%	0.73%	1.08%	0.03%												66.51%	33.49%	

NOTE: Hamilton County Class III/IV landfill quantity includes 21,217 tons/yr to an air curtain destructor

**TABLE ES-7: PROPORTIONAL FLOW DIAGRAM
SOUTHEAST TENNESSEE PLANNING REGION**



Matches Table (IV-11)

Waste-To-Energy:

The primary goals and objectives of implementing a waste-to-energy facility for this region include two main items. First, through the combustion of MSW the volume is reduced by approximately 90%. This results in a large savings in available landfill space, and thus cost savings. Secondly, a waste-to-energy facility offers an additional revenue source from the sale of energy. This additional revenue stream can be used to offset the disposal cost of the waste. If viable, a waste-to-energy project may offer a community an alternative which is, overall, less expensive than other options available to them.

As shown in the following Table ES-8, a regional waste-to-energy program has the potential of offering an extremely competitive (and less costly in many cases) alternative disposal plan while significantly reducing the requirements for landfills in the region, increasing the volume of recyclable materials and reducing the environmental impact of the more conventional solid waste management options.

For these reasons it is recommended that one of the elements of the 10 year plan include further, in depth, evaluation of the waste-to-energy system as a potential long term alternative.

**Table ES-8
WASTE-TO-ENERGY
Summary of Costs**

Item	Capital Cost	Debt Service ¹	O & M Costs	Mileage Costs	Total Costs	Total Cost/ Ton ²
Transfer Stations	\$2,850,000	\$269,040	\$395,000	\$890,962	\$1,555,002	\$2.47
Transportation	----	----	----	\$2,716,223	\$2,716,223	\$4.31
Recycling/RDF Facilities						
Area 1	\$7,287,581	\$687,948	\$1,807,048	----	\$2,494,996	\$3.96
Area 2	\$3,657,975	\$345,313	\$1,276,700	----	\$1,622,013	\$2.57
Area 3	\$1,242,264	\$117,270	\$841,033	----	\$958,303	\$1.52
Area 4	\$1,242,264	\$117,270	\$841,033	----	\$958,303	\$1.52
Area Landfill Facilities						
Area 1 (incl. ash)	----	----	----	----	\$1,869,800	\$2.96
Area 2	----	----	----	----	\$70,600	\$0.11
Area 3	----	----	----	----	\$26,520	\$0.04
Area 4	----	----	----	----	\$31,800	\$0.05
Waste-to-Energy Options						
DuPont ³	\$154,417,758	\$14,577,036	\$5,600,890	----	\$20,177,926	\$16.54
Bunge, Velsicol & Southern ⁴	\$154,554,712	\$14,589,965	\$5,619,499	----	\$20,209,464	\$18.95
Total w/DuPont WTE Option, \$/Ton	----	----	----	----	----	\$36.05
Total w/Bunge, Velsicol & Southern WTE Option, \$/Ton	----	----	----	----	----	\$38.46

¹ Calculated at 7% over 20 Years

² Based on Total Regional Wasteshed of 630,700 Tons/Year

³ Total Cost/Ton also includes \$9,748,523 in revenue from energy sales

⁴ Total Cost/Ton also includes \$8,258,920 in revenue from energy sales

Disposal-Landfills:

The following summarizes recommendations:

- **Bledsoe/Sequatchie**
 - Continue operations of existing landfill until October of 1996.
 - Begin negotiations with Marion County regarding a long term disposal contract for the disposal of Class I and Class III/IV waste.
 - If negotiations with Marion County are not successful, pursue expansion of existing landfill under Subtitle "D" regulations.

- **Bradley County**
 - Continue to operate county landfill under contract with Santek, Inc.

- **Grundy County**
 - Initiate negotiations with Marion County for a long term disposal contract for disposal of Class I and III/IV waste.
 - If negotiations with Marion County are not successful, begin negotiations with Bledsoe/Sequatchie Counties for disposal.

- **Hamilton County**
 - **Hamilton County Landfill**
 - Finish out current permitted operations.
 - Coordinate/negotiate with City of Chattanooga for the consolidation of operations at a single site for both Class I and Class III/IV waste.

 - **Summitt Landfill**
 - Negotiate with Hamilton County for construction of Subtitle "D" area.

- Negotiate with County for consolidation of Hamilton County's waste at a single site.
 - Develop Class III/IV disposal facility at the consolidated site.
- **Marion County**
 - Continue operations of existing landfill.
 - Investigate the importation of waste in order to reduce Marion County's disposal costs.
 - Design/permit/construct Class III/IV facility.
- **McMinn County**
 - Continue to operate landfill.
 - Continue relationship with Meigs & Polk.
 - Investigate import of additional waste in order to further reduce disposal costs.
 - Designate/construct Class III/IV facility at existing Class I facility.
 - Investigate the implementation of a leachate recirculation system.
- **Meigs County**
 - Continue disposal of Class I and Class III/IV waste at McMinn County landfill.
- **Polk County**
 - Continue disposal of Class I and Class III/IV waste at McMinn County landfill.
 - Evaluate permitting/construction of Class III/IV facility.

- **Rhea County**
 - Continue current landfill operations until permitted capacity is reached (March 1996).
 - Proceed with expansion of existing landfill under Subtitle "D" regulations.
 - Proceed with permitting/design/construction of a Class III/IV facility.

The following Table ES-9 provides additional information relating to the region's landfill requirements and recommendations.

Table ES-9
Summary of Existing/Planned Landfill Operations

Existing Class I Landfill	Qty	Name(s)	TPD (365 days/yr)	Operator	Owner	Receives		Where From	Existing Class III/IV Landfill	Planning Class III/IV Landfill
						Out-of-County Waste	Sequitachie County			
Bledsoe	1	Bledsoe-Sequitachie	27	county	county	Y	Sequitachie County	N	N	
Bradley	1	Bradley County	150	private	county	N	*****	N	Y	
Grundy	1	Grundy County	35	county	county	N	*****	N	N	
Hamilton	2	Hamilton County Summit	156 1057	county City of Chatt.	county City of Chatt.	N Y	***** surrounding counties	N	N	
Marion	1	Marion County	73	private	county	Y	Dade County, GA	N	Y	
McMinn	2	McMinn County	137	county	county	Y	Polk & Meigs Co.	N	Y	
Meigs	N	*****	***	*****	*****	*****	*****	N	N	
Polk	N	*****	***	*****	*****	*****	*****	N	possibly	
Rhea	1	Rhea County	49	county	county	N	*****	N	Y	
Sequitachie	N	(uses Bledsoe)	***	*****	*****	*****	*****	N	N	

Name(s)	TPD (365 days/yr)	AREA (Acres)			Remaining Life, Yrs	Expansion Adjacent to Existing Site	Add'l. Area (Acres)	Remote New Capacity Planned	Remote New Capacity Area	Add'l. Life, Yrs
		Permitted	Total Site	Used						
		Remaining	Remaining	Remaining						
Bledsoe-Sequitachie	27	24	N.A.	14	10	N	---	N	---	---
Bradley County	150	15	70	55	nil	Y	120	N	---	11.6
Grundy County	35	35	N.A.	35	nil	N	---	N	---	---
Hamilton County	156	16	37	21+	N.A.	Y	32	N	---	25
Summit	1057	160	220	179	41	Y	209	N	---	13
Marion County	73	81.5	211	approx. 10	approx. 70	Y	---	N	---	---
McMinn County	137	66	N.A.	approx. 65	N.A.	Y	N.A.	N	---	35
Meigs (uses McMinn)	---	---	---	---	---	N	---	N	---	---
Polk (uses McMinn)	---	---	---	---	---	N	---	N	---	---
Rhea County	49	N.A.	N.A.	N.A.	N.A.	Y	N.A.	N	---	21
Sequitachie (uses Bledsoe)	---	---	---	---	---	N	---	N	---	---

Public Information, Source Reduction, and Education:

The public information, education and source reduction program described in Chapter IX will be implemented on a regional basis and administered by the Regional Solid Waste Board. It is recommended that two (2) additional staff (1 administrator/coordinator and 1 planner) be added to oversee this program. The cost will be apportioned among the 10 member counties as a function of waste proportion.

Problem Wastes:

The problem waste collection and management program will be operated at the county level in accordance with the requirements of the State of Tennessee and as described in Chapter X of the plan.

- **System Elements/Coordination with Existing**

The following matrix "Summary of Regional Plan Recommendations" provides a complete overview of the plan elements and implementation.

SUMMARY OF REGIONAL PLAN RECOMMENDATIONS

Collection	Recycling	Composting	Class III/IV	Class I	Problem Waste	Education	Source Reduction	
Bledsoe/ Sequatchie	- Construct 4 Conv. Ctrs. in ea. County - phase out green boxes - maintain existing door-to-door collection	- implement drop-off recycling @ Conv. Ctrs. - maintain existing curbside recycling programs	- none	- transfer to Marion County Class III/IV Facility	- transfer to Marion Co. Class I Facility	- construct tire storage/processing/disposal area - implement waste oil collection - collect lead acid batteries @ conv. ctrs. & landfill - conduct one household hazardous waste collection per year	- establish a regional program for both recycling and source reduction	- implement industrial/commercial program
Bradley	- maintain existing Convenience Ctrs. - Construct 1 add'l. Convenience Ctrs. - maintain existing door-to-door collection	- implement drop-off recycling @ Conv. Ctrs. - maintain curbside program in Cleveland - maintain drop-off @ KAB	- maintain yardwaste composting for City of Cleveland	- construct Class III/IV facility	- maintain existing Class I Facility	- maintain existing tire storage area @ landfill - maintain existing waste oil collection @ landfill - maintain existing lead acid battery collection @ landfill - conduct one household hazardous waste collection per year	- establish a regional program for both recycling and source reduction	- implement industrial/commercial program
Grundy	- maintain existing convenience centers - Construct 5 add'l. Convenience Ctrs. - phase out green boxes	- implement drop-off recycling @ Conv. Ctrs. - maintain existing drop-off locations	- none	- transfer to Marion County Class III/IV Facility	- transfer to Marion Co. Class I Facility	- establish one waste oil collection location - collect lead acid batteries @ conv. ctrs. & landfill - conduct one household hazardous waste collection per year (jointly w/Marion)	- establish a regional program for both recycling and source reduction	- implement industrial/commercial program
Hamilton	- maintain existing door-to-door collection - expand Chattanooga's curbside program to include all residents of city - develop contracts with haulers to assure 90% of county has service available	- implement 3 drop-offs recycling in areas outside of Chattanooga - Chattanooga to expand exist. curbside recyclables to all households - maintain existing curbside & drop-off programs - maintain MRFs	- none	- construct Class III/IV facility @ consolidated site - City of Chattanooga to maintain Air Curtain Destructor	- consolidate existing 2 class I landfills to single site	- maintain tire storage area @ Summit - maintain waste oil collection @ Warner Park - collect lead acid batteries @ designated places and landfill - conduct one household hazardous waste collection per year	- establish a regional program for both recycling and source reduction	- implement industrial/commercial program
Marion	- Construct 5 Conv. Ctrs. - phase out green boxes - maintain existing door-to-door collection	- implement drop-off recycling @ Conv. Ctrs. - maintain existing curbside recycling program - maintain existing drop-off locations	- construct/implement yardwaste composting facility	- construct Class III/IV facility	- maintain existing Class I Facility	- construct tire storage/processing/disposal area - implement waste oil collection @ landfill - collect lead acid batteries @ conv. ctrs. & landfill - conduct one household hazardous waste collection per year (jointly w/Grundy)	- establish a regional program for both recycling and source reduction	- implement industrial/commercial program
McMinn	- maintain existing door-to-door collection - maintain existing convenience centers - construct add'l. conv. ctrs. if req'd by state - develop contracts with haulers to assure 90% of county has service available	- provide drop-off recycling @ landfill - maintain existing drop-off programs	- none (optional yardwaste)	- construct Class III/IV facility	- maintain existing Class I Facility	- conduct one household hazardous waste collection per year - maintain tire storage/disposal practices - maintain existing waste oil collection - establish lead acid battery collection/storage/disposal	- establish a regional program for both recycling and source reduction	- implement industrial/commercial program
Meigs	- maintain existing door-to-door collection - maintain existing convenience centers	- implement drop-off recycling @ one existing convenience center	- none	- transfer to McMinn	- transfer to McMinn	- conduct one household hazardous waste collection per year - designate McMinn County landfill as tire storage/disposal site - establish one waste oil collection/disposal location - establish lead acid battery collection/storage/disposal	- establish a regional program for both recycling and source reduction	- implement industrial/commercial program
Polk	- maintain existing door-to-door collection - maintain existing convenience centers	- implement drop-off recycling @ one existing convenience center	- none	- transfer to McMinn	- transfer to McMinn	- conduct one household hazardous waste collection per year - designate McMinn County landfill as tire storage/disposal site - establish one waste oil collection/disposal location - establish lead acid battery collection/storage/disposal	- establish a regional program for both recycling and source reduction	- implement industrial/commercial program
Rhea	- phase out green boxes - construct two add'l. convenience centers	- maintain existing curbside recycling program - implement drop-off recycling @ existing and new convenience centers	- none	- construct Class III/IV facility	- expand existing Class I facility	- maintain tire storage/disposal practices - establish one waste oil collection/disposal location - develop lead acid battery collection site @ trans. stat. - maintain annual household hazardous waste collection	- establish a regional program for both recycling and source reduction	- implement industrial/commercial program

● **Implementation**

Implementation of the major portion of the plan will be accomplished at the county or municipal jurisdiction. At the regional level it will be necessary to secure additional staff as previously indicated to administer and coordinate:

- a. Additional evaluation of the potential for a waste-to-energy system.
- b. Ongoing evaluation of the "TVA companion boiler program".
- c. Education and waste reduction program.

It is recommended that the staff be secured in late 1994 and the first quarter of 1995 in order to administer the above activities throughout the course of the plan. The remaining portions of the plan will be addressed at the county or municipal level with the major facilities associated with the plan occurring in 1995, 1996 and 1997.

The voluminous nature of the 10-year scheduling associated with 10 counties and the large variation of activities prevents detailed schedule representation herein. The reader is referred to the individual respective county report which was prepared as a part of this plan.

- **Estimated 10-Year System Cost**

The enclosed Table ES-10 summarizes the annual cost by element and county for 1995. The 10-year cost requires an annual escalation of 3% for projected inflation.

Table ES-10
INDIVIDUAL COUNTY BUDGET(S)
1995 ANNUAL COSTS

	Waste		Curbside or		Yard Waste		Collection		Class III/IV Landfill	Disposal	Problem Waste	Regional Cost	Total
	Quantity Tons/Year	Drop-Off Recycling	Drop-Off Recycling	Compost	Compost	III/IV Landfill	Disposal	Disposal					
Bledsoe	5,404	\$10,871	---	---	\$87,808	---	\$64,575	\$4,595	\$1,321	\$169,170			
Sequatchie	4,934	9,216	---	---	87,808	---	64,575	2,578	1,206	165,383			
Bradley	61,270	23,231	---	---	30,000	124,611*	1,967,606	4,873	14,982	2,040,692			
Grundy	5,794	---	---	---	107,016	---	142,500	2,506	1,417	253,439			
Marion	21,619	13,968	18,164	---	312,432	Diversion 114,536	437,643	529	5,286	902,558			
Hamilton-County	52,874	176,030	---	---	351,133	---	1,825,956	2,000	113,413	2,468,532			
Hamilton-Chattanooga	557,934	411,818	---	---	2,780,370	Diversion 2,076,067	3,234,927	2,000	included above	8,505,182			
McMinn	41,363	4,551	---	---	12,420	134,554*	1,257,022	2,070	10,114	1,286,177			
Meigs	2,751	4,203	---	---	62,100	---	83,603	2,070	673	152,649			
Polk	6,027	4,345	---	---	176,985	---	183,161	2,070	1,474	368,035			
Rhea	18,459	21,277	---	---	147,013	131,283	852,780	3,105	4,514	1,159,972			
Total Region	778,429	\$679,510	\$18,164		\$4,155,085	\$2,321,886	\$10,114,348	\$28,396	\$154,400	\$17,471,789 (\$22.44) per Ton			

* Not included in the total cost since waste was not subtracted from the Class I waste disposal total. Use of Class III/IV facility will result in a slightly reduced overall cost. Class III/IV disposal is required to achieve the 25% reduction goal.

**Table ES-10
INDIVIDUAL COUNTY BUDGET(S)
1996 ANNUAL COSTS**

	Waste Quantity Tons/Year	Curbside or Drop-Off		Sludge or Yard Waste Compost	Collection	Class III/IV Landfill	Disposal	Problem Waste	Regional Cost	Total
		Recycling	Recycling							
Bledsoe	5,440	\$11,414		---	\$152,275	---	\$217,600	\$5,224	\$1,361	\$387,874
Sequatchie	4,952	9,677		---	152,275	---	198,080	3,107	1,243	364,382
Bradley	61,762	24,044		---	31,050	128,553*	2,025,575	4,657	15,431	2,100,757
Grundy	5,767	---		---	112,367	---	149,625	3,031	1,459	266,482
Marion	21,662	14,872	18,495		328,054	Diversion 118,819	449,109	956	5,445	935,750
Hamilton- County	52,781	184,832		---	368,690	---	1,829,613	3,500	116,815	2,503,450
Hamilton- Chattanooga	560,146	432,409	0		2,919,389	Diversion 2,180,588	3,758,487	3,000	included above	9,293,873
McMinn	41,364	4,710	25,450*		12,855	138,525*	1,257,052	2,142	10,418	1,287,177
Meigs	2,771	4,350	---		64,274	---	84,211	2,142	693	155,670
Polk	6,023	4,497	---		183,179	100,160*	183,039	2,142	1,518	374,375
Rhea	18,461	22,022	---		152,159	138,028	900,912	3,214	4,649	1,220,984
Total Region	781,129	\$712,827	\$18,495		\$4,476,567	\$2,437,435	\$11,053,303	\$33,115	\$159,032	\$18,890,774 (\$24.18) per Ton

* Not included in the total cost since waste was not subtracted from the Class I waste disposal total. Use of Class III/IV facility will result in a slightly reduced overall cost. Class III/IV disposal is required to achieve the 25% reduction goal.

Table ES-10
INDIVIDUAL COUNTY BUDGET(S)
1997 ANNUAL COSTS

	Waste Quantity		Curbside or Drop-Off		Sludge or Yard Waste		Collection		Class III/IV		Disposal		Problem Waste		Regional Cost		Total		
	Tons/Year	Recycling	Compost	Yard Waste	Compost	Landfill	III/IV	Landfill	Disposal	Waste	Cost	Cost	Cost	Cost	Cost	Cost	Cost	Cost	Cost
Bledsoe	5,465	\$11,985	---	---	---	\$229,038	---	\$218,600	\$10,361	\$1,402	\$471,386								
Sequatchie	4,969	10,161	---	---	---	190,038	---	198,760	8,138	1,280	408,377								
Bradley	62,257	24,886	---	---	---	32,137	128,553*	2,099,444	4,415	15,894	2,176,776								
Grundy	5,741	---	---	---	---	117,985	---	199,500	8,058	1,503	327,046								
Marion	21,704	15,617	18,842	---	---	334,457	Diversion	976,469	5,878	5,608	1,480,188								
Hamilton-County	52,687	194,074	---	---	---	387,125	---	1,833,270	3,675	120,320	2,538,464								
Hamilton-Chattanooga	562,419	454,029	0	---	---	3,065,358	Diversion	4,542,416	10,053	included above	10,343,012								
McMinn	41,364	4,875	26,150*	---	---	13,305	138,525*	1,257,052	2,217	10,730	1,288,179								
Meigs	2,791	4,502	---	---	---	66,524	---	84,818	2,217	714	158,775								
Polk	6,018	4,654	---	---	---	189,590	103,666*	182,887	2,217	1,563	380,911								
Rhea	18,462	22,793	---	---	---	157,485	138,028	900,970	3,326	4,789	1,227,391								
Total Region	783,877	\$747,576	\$18,842			\$4,783,042	\$2,532,501	\$12,494,186	\$60,555	\$163,803	\$20,800,505 (\$26.54) per Ton								

* Not included in the total cost since waste was not subtracted from the Class I waste disposal total. Use of Class III/IV facility will result in a slightly reduced overall cost. Class III/IV disposal is required to achieve the 25% reduction goal.

Table ES-10
INDIVIDUAL COUNTY BUDGET(S)
1998 ANNUAL COSTS

	Waste Quantity Tons/Year	Curbside or Drop-Off Recycling	Sludge or Yard Waste Compost	Collection	Class III/IV Landfill	Disposal	Problem Waste	Regional Cost	Total
Bledsoe	5,490	\$12,584	---	\$237,728	---	\$219,600	\$10,504	\$1,444	\$481,860
Sequatchie	4,987	10,669	---	196,778	---	199,480	8,169	1,319	416,415
Bradley	62,758	25,757	---	33,262	132,714*	2,177,955	4,143	16,371	2,257,488
Grundy	5,714	---	---	123,884	---	199,500	8,086	1,548	333,018
Marion	21,745	16,396	19,207	361,679	Diversion 128,039	978,327	5,797	5,776	1,515,221
Hamilton- County	52,594	203,778	---	406,481	---	1,965,743	3,859	123,929	2,703,790
Hamilton- Chattanooga	564,754	476,730	0	3,218,626	Diversion 2,385,732	4,893,574	9,891	included above	10,984,553
McMinn	41,365	5,043	26,850*	13,771	142,730*	1,383,659	2,295	11,052	1,415,820
Meigs	2,811	4,660	---	68,852	---	94,028	2,295	735	170,570
Polk	6,013	4,817	---	196,226	107,294*	201,135	2,295	1,610	406,083
Rhea	18,464	23,591	---	162,996	145,299	952,847	3,442	4,932	1,293,107
Total Region	786,695	\$784,025	\$19,207	\$5,020,283	\$2,659,070	\$13,265,848	\$60,776	\$168,716	\$21,977,925 (\$27.94) per Ton

* Not included in the total cost since waste was not subtracted from the Class I waste disposal total. Use of Class III/IV facility will result in a slightly reduced overall cost. Class III/IV disposal is required to achieve the 25% reduction goal.

Table ES-10
INDIVIDUAL COUNTY BUDGET(S)
1999 ANNUAL COSTS

	Waste Quantity		Curbside or Drop-Off Recycling		Sludge or Yard Waste Compost		Collection		Class III/IV Landfill		Disposal		Problem Waste		Regional Cost		Total	
	Tons/Year																	
Bledsoe	5,516		\$13,213					\$246,853				\$220,640		\$13,155		\$1,487		\$495,348
Sequatchie	5,005		11,203				203,855					200,200		10,702		1,358		427,318
Bradley	63,262		26,658				34,426		141,562*			2,205,878		3,840		16,862		2,287,664
Grundy	5,688						130,078					199,500		10,615		1,594		341,787
Marion	21,788		17,216		19,590		379,763		Diversion			980,277		8,212		5,950		1,552,089
Hamilton-County	52,501		213,966				426,805					1,969,690		4,052		127,647		2,742,160
Hamilton-Chattanooga	567,151		500,567		0		3,379,557		Diversion			5,194,451		8,289		included above		11,568,499
McMinn	41,365		5,222		27,650*		14,253		2,485,635			1,383,659		2,375		11,384		1,416,893
Meigs	2,831		4,823				71,262					94,697		2,375		757		173,914
Polk	6,009		4,986				203,094		111,049*			201,001		2,375		1,659		413,115
Rhea	18,466		24,417				168,701		145,299			952,970		3,562		5,080		1,300,029
Total Region	789,582		\$822,271		\$19,590		\$5,258,647		\$2,772,015			\$13,602,963		\$69,552		\$173,778		\$22,718,816 (\$28.77) per Ton

* Not included in the total cost since waste was not subtracted from the Class I waste disposal total. Use of Class III/IV facility will result in a slightly reduced overall cost. Class III/IV disposal is required to achieve the 25% reduction goal.

Table ES-10
INDIVIDUAL COUNTY BUDGET(S)
2000 ANNUAL COSTS

	Waste Quantity		Curbside or Drop-Off Recycling		Sludge or Yard Waste Compost		Collection		Class III/IV Landfill		Disposal		Problem Waste		Regional Cost		Total	
	Tons/Year																	
Bledsoe	5,542		\$13,874		---		\$236,437		---		\$249,390	\$13,311	\$1,532			\$514,544		
Sequatchie	5,022		11,763		---		191,290		---		225,990	10,737	1,399			441,179		
Bradley	63,765		27,591		---		35,631		148,453*		2,258,357	3,505	17,368			2,342,452		
Grundy	5,662		---		---		136,582		---		216,600	10,645	1,642			365,469		
Marion	21,831		18,077		22,994		398,752		Diversion		982,180	8,122	6,128			1,582,541		
Hamilton-County	52,409		224,664		---		448,145		---		2,125,010	4,254	131,477			2,933,550		
Hamilton-Chattanooga	569,618		525,595		0		3,548,535		Diversion		5,638,937	7,817	included above			12,336,727		
McMinn	41,366		5,405		31,350*		14,752		157,917*		1,383,659	2,458	11,725			1,417,999		
Meigs	2,851		4,992		---		73,756		---		95,366	2,458	780			177,352		
Polk	6,004		5,160		---		210,202		114,936*		200,834	2,458	1,708			420,362		
Rhea	18,468		25,272		---		174,606		155,081		1,027,101	3,687	5,233			1,390,980		
Total Region	792,538		\$862,393		\$22,994		\$5,468,688		\$2,917,212		\$14,403,424	\$69,452	\$178,992			\$23,923,155 (\$30.19) per Ton		

* Not included in the total cost since waste was not subtracted from the Class I waste disposal total. Use of Class III/IV facility will result in a slightly reduced overall cost. Class III/IV disposal is required to achieve the 25% reduction goal.

Table ES-10
INDIVIDUAL COUNTY BUDGET(S)
2001 ANNUAL COSTS

	Waste Quantity		Curbside or Drop-Off Recycling		Sludge or Yard Waste Compost		Collection		Class III/IV Landfill		Disposal		Problem Waste		Regional Cost		Total		
	Tons/Year																		
Bledsoe	5,552	\$14,568					\$226,501					\$249,840	\$15,978	\$1,578			\$508,465		
Sequatchie	5,028	12,351					179,097					226,260	13,274	1,441			432,423		
Bradley	64,108	28,551					36,878			148,453*		2,367,828	3,135	17,889			2,454,281		
Grundy	5,630						143,411					216,600	13,179	1,692			374,882		
Marion	21,874	18,981			23,416		418,689			Diversion		984,130	10,529	6,312			1,613,811		
Hamilton-County	52,200	235,897					470,552					10,926,092	4,467	135,421			11,772,429		
Hamilton-Chattanooga	571,238	551,875			0		3,725,962			Diversion		6,327,664	11,752	included above			13,342,369		
McMinn	41,287	5,594			32,250*		15,268			157,917*		1,572,622	2,544	12,077			1,608,105		
Meigs	2,865	5,167					76,337					109,128	2,544	803			193,979		
Polk	6,000	5,341					217,559			118,959*		228,540	2,544	1,760			455,744		
Rhea	18,433	26,157					180,717			155,081		1,024,789	3,816	5,390			1,395,950		
Total Region	794,215	\$904,482			\$23,416		\$5,690,971			\$3,031,951		\$24,233,493	\$83,762	\$184,363			\$34,152,438		(\$43.00) per Ton

* Not included in the total cost since waste was not subtracted from the Class I waste disposal total. Use of Class III/IV facility will result in a slightly reduced overall cost. Class III/IV disposal is required to achieve the 25% reduction goal.

Table ES-10
INDIVIDUAL COUNTY BUDGET(S)
2002 ANNUAL COSTS

	Waste Quantity Tons/Year	Curbside or Drop-Off		Sludge or Yard Waste Compost	Collection	Class III/IV Landfill	Disposal	Problem Waste	Regional Cost	Total
		Recycling	Recycling							
Bledsoe	5,578	\$15,296		---	\$237,826	---	\$251,010	\$16,151	\$1,625	\$521,908
Sequatchie	5,046	12,969		---	188,052	---	227,070	13,313	1,484	442,888
Bradley	64,621	29,556		---	38,169	153,475*	2,476,945	2,726	18,426	2,565,822
Grundy	5,657	---		---	150,582	---	216,600	13,212	1,742	382,136
Marion	21,918	19,930	23,859		439,624	Diversion 157,494	1,117,331	10,430	6,501	1,775,169
Hamilton- County	52,294	247,691		---	494,080	---	2,133,511	4,690	139,484	3,019,456
Hamilton- Chattanooga	575,279	579,469	0		3,912,260	Diversion 2,868,728	7,274,409	11,232	included above	14,646,098
McMinn	41,288	5,790	33,150*		15,802	164,433*	1,572,660	2,633	12,439	1,609,324
Meigs	2,885	5,347	---		79,009	---	109,890	2,633	827	197,706
Polk	5,981	5,528	---		225,174	123,123*	227,816	2,633	1,812	462,963
Rhea	18,435	27,072	---		187,042	164,980	1,093,723	3,950	5,551	1,482,318
Total Region	798,982	\$948,648	\$23,859		\$5,967,620	\$3,191,202	\$16,700,965	\$83,603	\$189,891	\$27,105,788 (\$33.93) per Ton

* Not included in the total cost since waste was not subtracted from the Class I waste disposal total. Use of Class III/IV facility will result in a slightly reduced overall cost. Class III/IV disposal is required to achieve the 25% reduction goal.

**Table ES-10
INDIVIDUAL COUNTY BUDGET(S)
2003 ANNUAL COSTS**

	Waste Quantity Tons/Year	Curbside or Drop-Off Recycling		Sludge or Yard Waste Compost		Collection	Class III/IV Landfill	Disposal	Problem Waste	Regional Cost	Total
		Drop-Off Recycling	Yard Waste Compost	Yard Waste Compost	Landfill						
Bledsoe	5,604	\$16,061	---	\$249,717	---	\$252,108	---	\$18,834	\$1,674	\$538,394	
Sequatchie	5,059	13,617	---	197,454	---	227,655	---	15,853	1,529	456,108	
Bradley	65,137	30,590	---	39,505	153,475*	2,568,974	---	2,278	18,979	2,660,326	
Grundy	5,684	---	---	158,111	---	233,700	---	15,748	1,795	409,354	
Marion	21,960	20,926	24,324	461,605	Diversion 163,521	1,119,488	---	12,827	6,696	1,809,387	
Hamilton-County	52,388	260,076	---	518,784	---	2,335,550	---	4,925	143,668	3,263,003	
Hamilton-Chattanooga	579,388	608,442	0	4,107,873	Diversion 2,991,721	7,909,836	---	15,117	included above	15,632,989	
McMinn	41,288	5,993	34,150*	16,355	164,433*	1,572,660	---	2,725	12,813	1,610,546	
Meigs	2,906	5,535	---	81,774	---	110,690	---	2,725	852	201,576	
Polk	5,987	5,722	---	233,055	127,432*	288,045	---	2,725	1,867	531,414	
Rhea	18,437	28,020	---	193,589	164,980	1,093,793	---	4,088	5,718	1,490,188	
Total Region	803,838	\$994,982	\$24,324	\$6,257,822	\$3,320,222	\$17,712,499	---	\$97,845	\$195,591	\$28,603,285 (\$35.58) per Ton	

* Not included in the total cost since waste was not subtracted from the Class I waste disposal total. Use of Class III/IV facility will result in a slightly reduced overall cost. Class III/IV disposal is required to achieve the 25% reduction goal.

● **Allocation of Responsibilities**

See "Implementation" addressed previously.

Base Map Of Region

BASELINE MAP INCLUDING WASTE FLOW PATTERNS AND PROPOSED SOLID WASTE PROGRAMS SOUTHEAST TENNESSEE SOLID WASTE PLANNING REGION



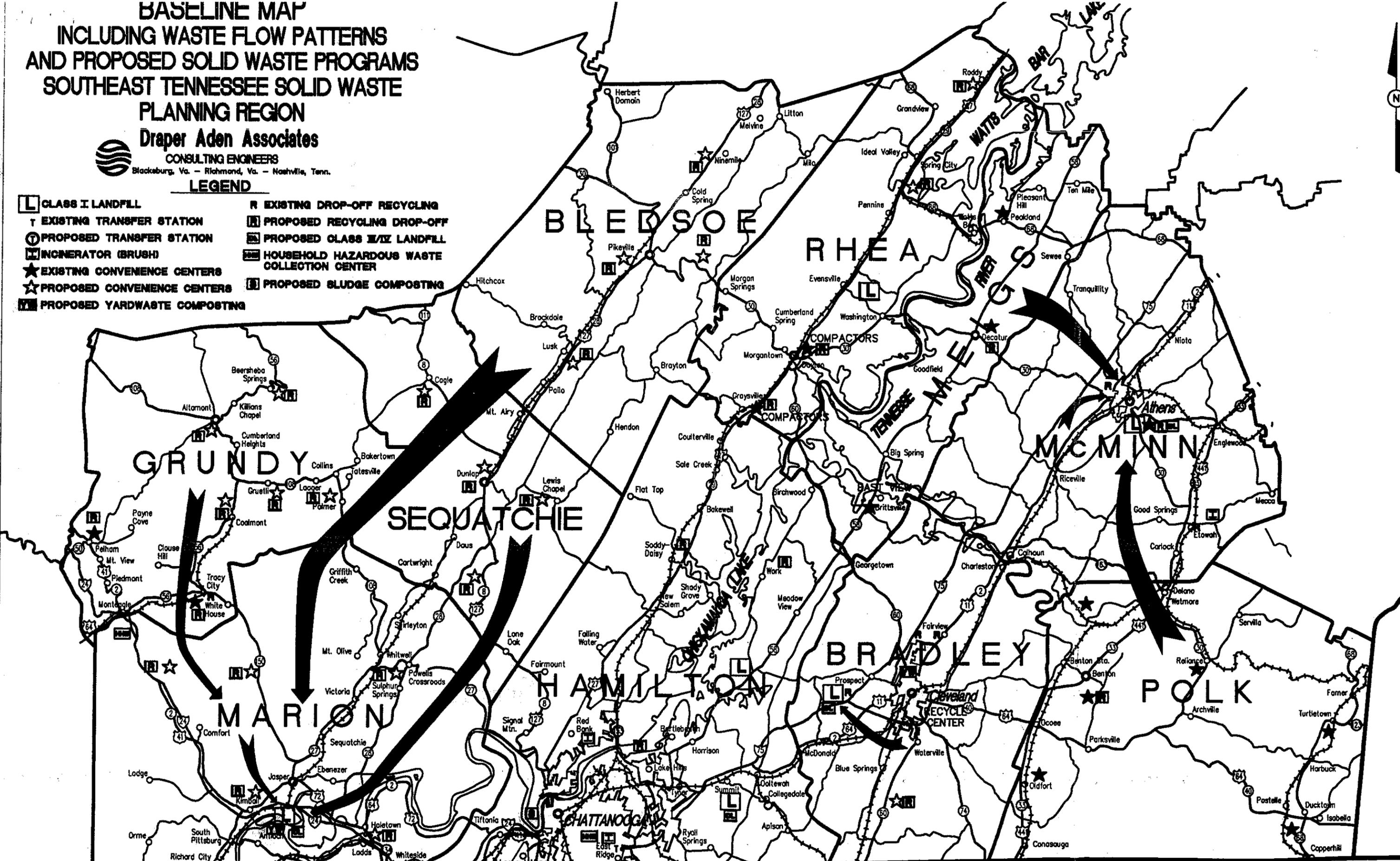
Draper Aden Associates

CONSULTING ENGINEERS

Blackburg, Va. - Richmond, Va. - Nashville, Tenn.

LEGEND

- | | |
|------------------------------|---------------------------------------------|
| CLASS I LANDFILL | EXISTING DROP-OFF RECYCLING |
| EXISTING TRANSFER STATION | PROPOSED RECYCLING DROP-OFF |
| PROPOSED TRANSFER STATION | PROPOSED CLASS III/IV LANDFILL |
| INCINERATOR (BRUSH) | HOUSEHOLD HAZARDOUS WASTE COLLECTION CENTER |
| EXISTING CONVENIENCE CENTERS | PROPOSED SLUDGE COMPOSTING |
| PROPOSED CONVENIENCE CENTERS | PROPOSED YARDWASTE COMPOSTING |



CHAPTER I

DESCRIPTION OF THE MUNICIPAL SOLID WASTE REGION

CHAPTER I

DESCRIPTION OF THE MUNICIPAL SOLID WASTE REGION

A. General Description

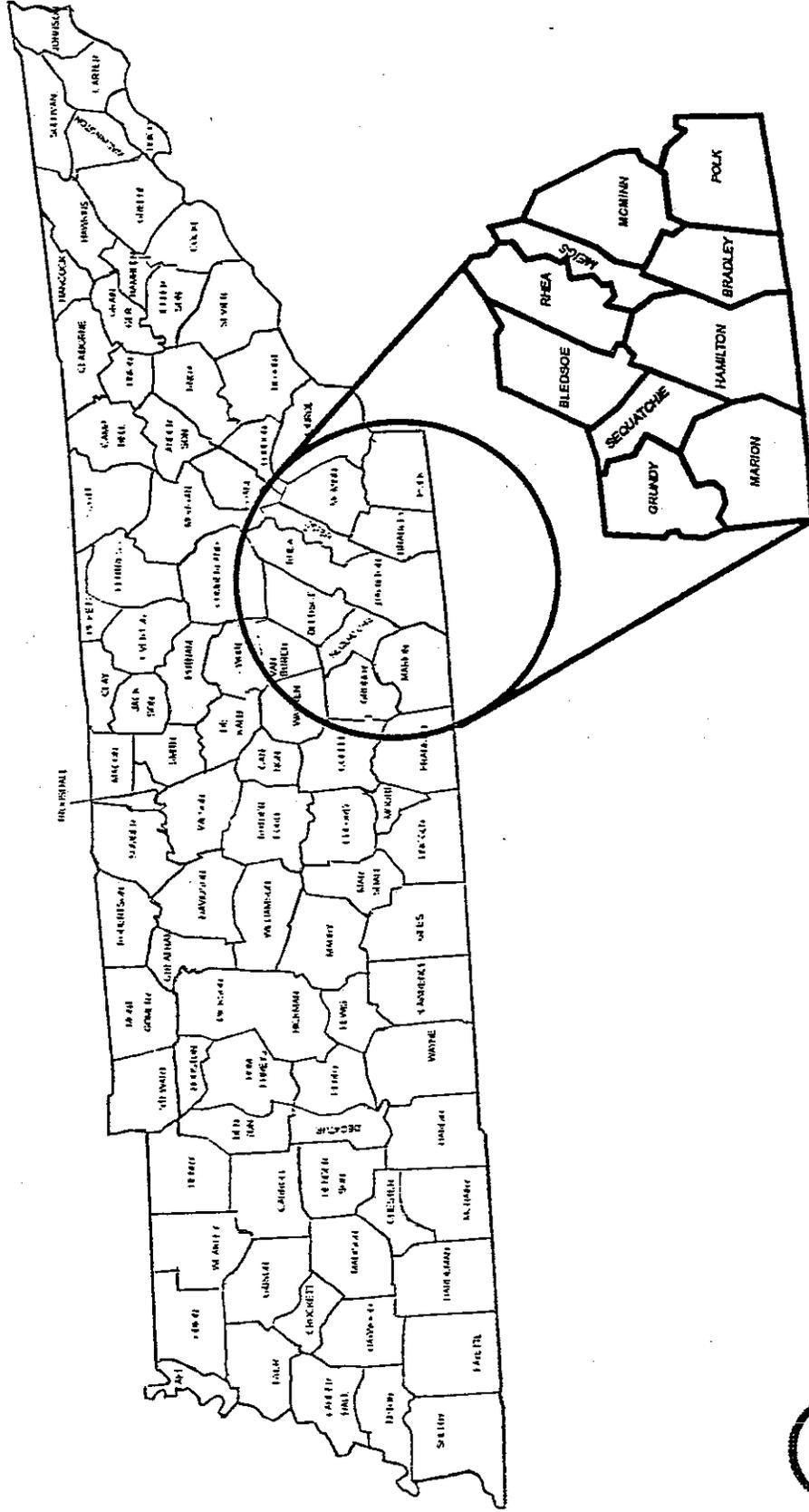
The Southeast Tennessee Planning Region (SETPR) is comprised of 10 counties including 37 governmental entities as follows:

<u>County</u>	<u>Major City(ies)</u>
Bledsoe	Pikeville
Bradley	Cleveland
Grundy	Gruetii Laager/Tracy City
Hamilton	Chattanooga/East Ridge/Red Bank/Signal Mt./Lookout Mt.
Marion	South Pittsburgh/Jasper
McMinn	Athens
Meigs	Decatur
Polk	Benton
Rhea	Dayton
Sequatchie	Dunlap

The SETPR is the largest solid waste planning region in the state of Tennessee encompassing an area of 3,781 square miles and a population of approximately 506,000. The SETPR has been greatly assisted in its organizational efforts by the Southeast Tennessee Development District which encompasses the identical geographic area and governmental entities.

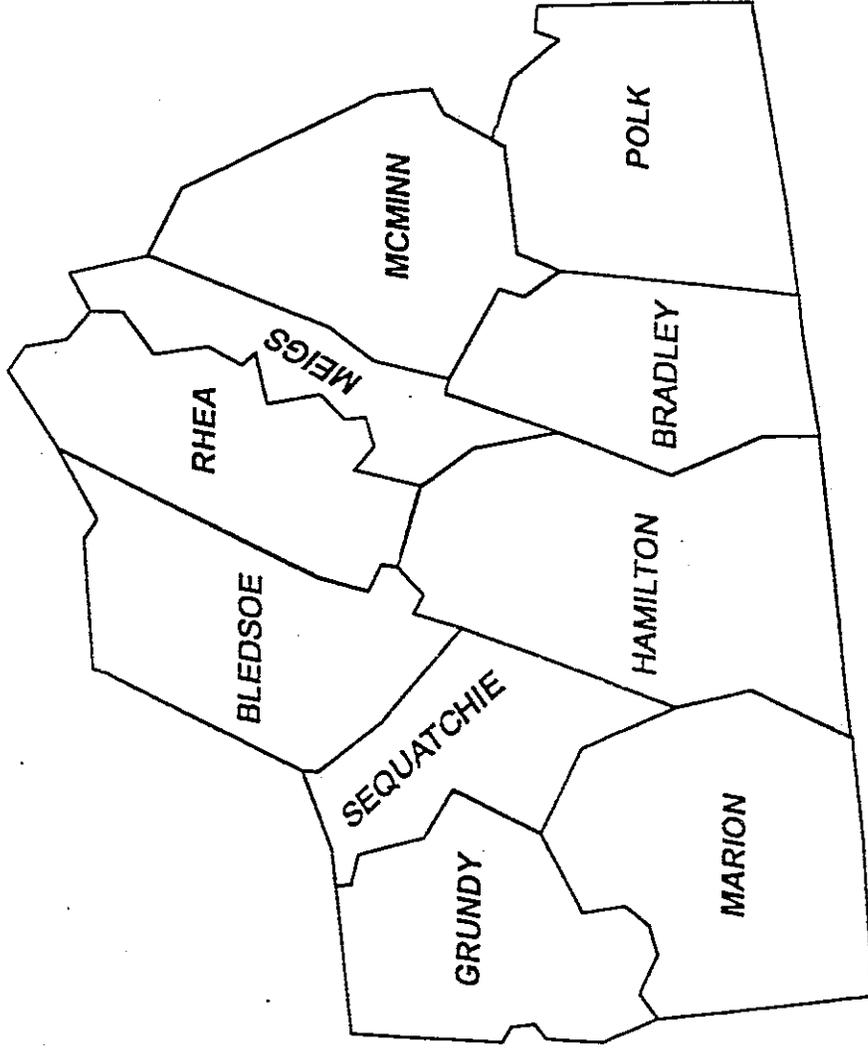
Enclosed is the regional base map indicating political boundaries, major roads, waterways and railroads.

SOUTHEAST TENNESSEE SOLID WASTE PLANNING REGION



Draper Aden Associates

**SOUTHEAST TENNESSEE
SOLID WASTE PLANNING REGION**



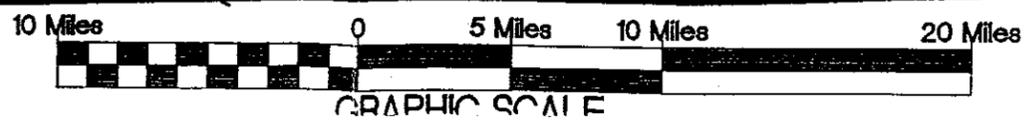
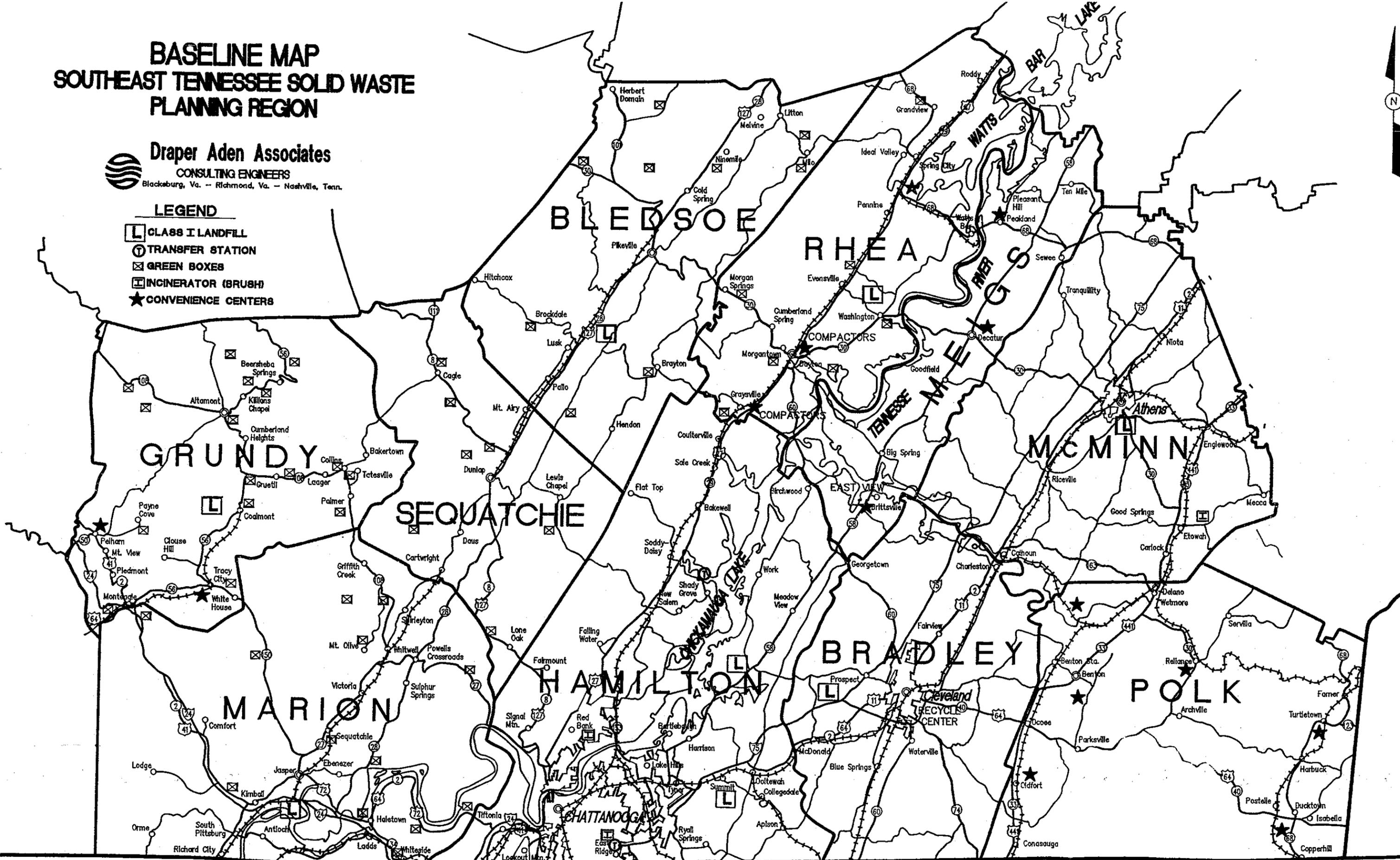
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BASELINE MAP SOUTHEAST TENNESSEE SOLID WASTE PLANNING REGION

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Blackburg, Va. - Richmond, Va. - Nashville, Tenn.

LEGEND

-  CLASS I LANDFILL
-  TRANSFER STATION
-  GREEN BOXES
-  INCINERATOR (BRUSH)
-  CONVENIENCE CENTERS



B. Rationale for Forming the Region

The Southeast Tennessee Planning Region was formed as a reflection of the common interest as well as common boundaries between the ten member counties. It was felt that the cost-efficiencies brought about by an increased population base would expand the option horizon across the board. This would allow for more options in the area of recycling, composting and waste-to-energy solid waste management. It was further noted that existing solid waste management facilities within the region were located within a reasonable distance of the main transportation corridors which provided for ease of accessibility between the facilities. The most important aspect of this decision was the cultural and historical ties between the governments and citizens of this region through the Southeast Tennessee Development District. These ties allow for the pursuit of common goals and leaves no impediments to the implementation of region-wide systems should they appear advantageous in the plan.

In joining together to form the region, the counties and cities which comprise the region demonstrated that they have the desire and ability to solve common problems together. By keeping the regional waste flow together for planning purposes the region will be in a position to look at all options relating to an integrated waste management plan. This is opposed to smaller regions or areas which are often limited in the available options.

C. Institutional Structure

The Southeast Tennessee Municipal Solid Waste Planning Board

General: The Board was established in conformance with the requirements of the State of Tennessee Solid Waste Management Act of 1991 and Board Members were appointed as follows:

	<u>Appointee</u>	<u>Term (Years)</u>	<u>Appointed by:</u>
1.	William Reed	2	Bledsoe Co. Executive
2.	Donna Hubbard	4	Bradley Co. Executive
3.	Riley Anderson	6	Grundy Co. Executive
4.	Ken Castleberry	6	Hamilton Co. Executive
5.	Ron Banks	4	McMinn Co. Executive
6.	Howell Moss	2	Marion Co. Executive
7.	Garland Lankford	2	Meigs Co. Executive
8.	Barry L. Massengill	6	Polk Co. Executive
9.	Robert Aikman	4	Rhea Co. Executive
10.	Bill Harmon	4	Sequatchie Co. Executive
11.	Marvin Bollinger	4	Regional Municipalities
12.	Jack Marcellis	2	Mayor of Chattanooga

	<u>Appointee</u>	<u>Term (Years)</u>	<u>Appointed by:</u>
13.	Craig Bivens	6	Mayor of Cleveland
14.	Jerry Robinson	2	Region Municipalities
15.	Rick Sonnenburg	6	Region Municipalities

The first organizational Board Meeting was conducted on May 25, 1993 and officers were elected as follows:

Chairman:	Jack Marcellis
Vice Chairman:	Howell Moss
Vice Chairman:	Ron Banks

Regularly scheduled meetings were established for the fourth Tuesday of each month.

In addition to Regional Solid Waste Planning Board, MSW Planning Advisory Committees have been established in accordance with the requirements of the Solid Waste Management Act of 1991. Interaction between the Board and the Advisory Committees is accomplished through open meetings, distribution of information (oral and written) and one on one communication with participants. A list of the advisory committees and representatives is on file with the Regional Solid Waste Planning Board.

D. Reaggregation of Demographics

The following spread sheet "Synopsis of Needs Assessment Data" provides a summary of demographic, waste stream and landfill information for each county within the Region and for the Region as a whole. Hamilton County accounts for 55% of the population of the Region and 73% of the waste stream. Tables I-1 through I-6 provide the individual county and regional data regarding:

Table I-1	Population & Population Density
I-2	Distribution of Regional Population
I-3	Distribution of Population by Sex and Age
I-4	Distribution of Population Education
I-5	Distribution of Population Housing Type and Occupancy
I-6	Distribution of Population Projections

Tables I-1 through I-6

CHAPTER I: FORMS

A. REGIONAL SUMMARY: DEMOGRAPHICS (1991)

1. Name of Region: Southeast Tennessee Solid Waste Planning Region
2. Regional Population: 504,405
3. Regional Area 3,781 square miles
4. Population and Population Density

Table I-1

County	Area (Sq. Miles)	Population	Avg. Density Population/sq. miles
Bledsoe	406	9,669	23.8
Bradley	329	73,712	224.2
Grundy	361	13,362	37.1
Hamilton	543	285,536	526.3
McMinn	430	42,383	98.5
Marion	500	24,860	49.7
Meigs	195	8,033	41.2
Polk	435	13,643	31.4
Rhea	316	24,344	77.1
Sequatchie	266	8,863	33.3
Regional Total	3,781	504,405	134

5. Distribution of the Total Regional Population, by urban and rural areas:

Table I-2

County	URBAN		RURAL	
	Population	%	Population	%
Bledsoe			9,669	100.0
Bradley	40,875	55.5	32,837	44.5
Grundy			13,362	100.0
Hamilton	250,680	87.8	34,856	12.2
McMinn	15,869	37.4	26,514	62.6
Marion	6,075	24.4	18,785	75.6
Meigs			8,033	100.0
Polk			13,643	100.0
Rhea	5,671	23.3	18,673	76.7
Sequatchie	3,731	42.1	5,132	57.9
Regional Total	322,901	64.0	181,504	36.1

6. Distribution of the Total Regional Population by Sex and Age

Table I-3

Age	Total	Male	%	Female	%
0-4	32,649	16,683	3.3	15,966	3.2
5-17	91,331	46,909	9.3	44,422	8.8
18-44	209,589	102,559	20.3	107,030	21.2
45-64	104,636	49,674	9.8	54,962	10.9
65+	66,200	25,435	5.0	40,765	8.1
Regional Total	504,405	241,260	47.8	263,145	52.2

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

Table I-4

	Number	%
Less than 9th Grade	54,777	16.7
Grade 9-12	57,106	17.4
High School	166,521	50.7
College (1-4)	34,510	10.5
Post Graduate/Professional (> 4)	15,408	4.7
Regional Total	328,322	100.0

8. Total Number of Households in Region 193,574

9. Distribution by Type of Housing and Occupancy

Table I-5

	Total Units (Persons)	Occupied	Owner	Rented
Single Family 1, Detached	361,917	141,478	114,908	19,185
1, Attached	7,393	3,026	1,496	1,530
Multi-Family 2	26,295	11,466	1,137	10,329
3-4	11,943	5,840	338	5,502
5-9	14,851	7,355	163	7,192
10-19	10,012	5,566	107	5,459
20-49	5,276	3,212	32	3,180
50 or more	4,213	3,385	88	3,297
Institutional	11,323			
Mobile Home/Trailer	47,292	18,038	13,642	4,396
Other	3,995	1,645	933	712
Regional Total	504,510	201,011	132,844	60,782

10. Regional Population Projections 1994-2003

Table I-6

Regional Population 1993:505,030

County	Projection Year									
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Bledsoe	9,852	9,989	9,945	9,991	10,038	10,085	10,132	10,150	10,198	10,246
Bradley	76,115	76,726	77,343	77,964	78,590	79,221	79,851	80,280	80,922	81,569
Grundy	13,118	13,057	12,997	12,938	12,878	12,819	12,761	12,688	12,748	12,808
Hamilton	283,516	283,014	282,513	282,013	281,514	281,016	280,524	279,404	279,907	280,411
McMinn	42,385	42,386	42,387	42,387	42,388	42,388	42,389	42,309	42,310	42,310
Marion	25,055	25,104	25,153	25,202	25,251	25,300	25,349	25,350	25,401	25,451
Meigs	8,267	8,326	8,385	8,446	8,506	8,567	8,628	8,671	8,733	8,796
Polk	13,601	13,591	13,580	13,570	13,560	13,549	13,539	13,498	13,509	13,520
Rhea	24,353	24,356	24,358	24,360	24,362	24,365	24,367	24,321	24,324	24,327
Sequatchie	8,990	9,021	9,053	9,085	9,118	9,150	9,182	9,193	9,226	9,259
Regional Total	505,252	505,570	505,714	505,956	506,205	506,460	506,722	505,864	507,278	508,697

E. Reaggregation of Economic Information

Refer to Tables I-7 through I-14 as follows:

- I-7 Base Economic Information
- I-8 Non-Agriculture Employment
- I-9 Agriculture Employment
- I-10 Major Generators of Commercial & Industrial Waste
- I-11 Regional Summary of Institution Housing > 100 persons
- I-12 Data on Major Health Care Facilities
- I-13 Sources of Local Revenue
- I-14 Fiscal Data

Tables I-7 through I-14

B: ECONOMIC ACTIVITY**1. Basic economic information, for each county, and the region in 1991.****Table I-7**

County	Population	MSA County (yes/no)	Total Employment	Total Earnings	Per Capita Income	% Population Below the Poverty Line
Bledsoe	9,669	no	3,953	100,381	8,053	19.2
Bradley	73,712	no	40,020	1,083,942	11,768	13.8
Grundy	13,362	no	3,857	147,057	7,227	23.9
Hamilton	285,536	yes	191,683	5,216,072	13,619	13.1
McMinn	42,383	no	22,234	570,581	10,508	17.2
Marion	24,860	yes	7,326	299,499	9,274	19.3
Meigs	8,033	no	2,267	94,074	9,237	22.3
Polk	13,643	no	3,891	149,917	9,311	18.3
Rhea	24,344	no	12,661	337,233	9,333	19.0
Sequatchie	8,863	yes	3,277	99,326	9,377	22.9
Regional Total	504,405		291,169	8,098,082		

2. Non-Agricultural Employment, by Sector, 282,486

Table I-8
% of Total Employment

County	Manufacturing	Construction	Trade	Finance	Service	Gov't	Transportation Pub. Utilities
Bledsoe	792	131	271	62	1,209	697	87
Bradley	13,111	2,025	7,549	1,815	9,281	4,096	914
Grundy	845	200	582	71	726	647	258
Hamilton	34,129	9,664	47,328	15,643	46,362	28,126	8,649
McMinn	8,651	1,040	3,949	758	3,063	2,203	778
Marion	1,654	191	2,027	240	1,200	1,076	290
Meigs	610	89	272	56	240	328	232
Polk	1,096	133	623	207	675	640	124
Rhea	4,401	470	1,523	293	1,384	3,759	194
Sequatchie	712	159	479	87	633	546	131
Regional Total	66,001	14,102	64,603	19,232	64,773	42,118	11,657
%	23.4	5.0	22.9	6.8	22.9	14.9	4.1

3. Total Agricultural Employment in 1991 3,632

Table I-9
Agricultural Employees

County	Employment
Bledsoe	341
Bradley	533
Grundy	504
Hamilton	750
McMinn	738
Marion	171
Meigs	147
Polk	193
Rhea	130
Sequatchie	125
Regional Total	3,632

4. Prepare a regional summary of major generators of commercial and non-hazardous industrial waste in 1991. Use data from Table II-2 in the 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
Bledsoe	more than 50 employees	5	negligible
Bradley	"	25	4,860 TPY
Grundy	"	4	negligible
Hamilton	"	121	27,448 TPY
Marion	"	8	negligible
McMinn	"	29	7,244 TPY
Meigs	"	2	negligible
Polk	"	8	"
Rhea	"	7	"
Sequatchie	"	2	"

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

Table I-11

	Total Number of Institutions	Total Number of Students - Prisoners/Residents	Estimated Quantity of Waste Generated (TPY)
Bledsoe	2	1,000	650
Bradley	1	1,922	1,000
Grundy	0	0	0
Hamilton	7	11,913	5,320
McMinn	1	632	800
Marion	0	0	0
Meigs	0	0	0
Polk	0	0	0
Rhea	1	325	750
Sequatchie	0	0	0
Regional Total	12	15,792	8,520

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

Table I-12

County	No. of Facilities	No. of Beds	Infectious Waste Management/ OnSite/Offsite	Infectious Waste Management/ Type Treatment	Est. Quantity of Solid Waste Generated (TPY)
Bledsoe	0	0	n/a	n/a	n/a
Bradley	5	849	both	incineration	2,485
Grundy	0	0	n/a	n/a	n/a
Hamilton	18	3,034	both	incineration	7,760
McMinn	2	190	both	incineration	1,850
Marion	3	284	both	incineration	384
Meigs	1	86	off-site	incineration	150
Polk	0	0	n/a	n/a	n/a
Rhea	2	239	off-site	n/a	1,700
Sequatchie	0	0	n/a	n/a	n/a
Regional Total	31	4,682			14,329

7. Sources of local revenue utilized in the region. Total Tax Income (1991):

Table I-13

County	Property Tax	Local Sales Tax	Wheel Tax	Local Waste Collection Fee	User Fee/ Tipping Fee	Other*
Bledsoe	x	x			x	
Bradley	x	x			x	
Grundy	x	x			x	
Hamilton	x	x			x	
McMinn	x	x			x	
Marion	x	x			x	
Meigs	x	x				
Polk	x	x				
Rhea	x	x			x	
Sequatchie	x	x				
Regional Total						

8. Provide the following data for fiscal 1993*.

Table I-14

County	Total Assessed Property Value	Total Property Tax Revenue	Total Sales Subject to Sales Tax	Total Local Sales Tax Revenue	# Registered Vehicles	Total Wheel Tax Revenue
Bledsoe	56,695,525	1,577,571	1,115,157	429,692	8,536	0
Bradley	1,944,114,833	15,542,263	28,928,929	10,339,244	76,538	0
Grundy	203,451,056	2,088,100	1,664,997	637,939	12,370	0
Hamilton	10,056,101,759	74,747,096	160,633,042	45,814,540	307,462	0
McMinn	376,299,097	10,052,070	16,123,297	2,925,807	25,141	0
Marion	448,521,000	3,644,337	8,061,132	2,981,690	40,980	0
Meigs	193,882,102	1,309,298	1,853,544	615,024	7,864	0
Polk	244,078,900	3,511,271	1,876,561	700,037	14,599	0
Rhea	444,758,294	4,064,625	6,030,310	2,255,725	31,403	0
Sequatchie	212,466,289	1,311,647	2,112,392	770,954	12,134	0
Regional Total	14,180,368,855	117,848,278	228,299,361	67,470,652	537,027	0

* Numbers shown are for FY'90.

CHAPTER II

ANALYSIS OF THE CURRENT SOLID WASTE MANAGEMENT SYSTEMS

CHAPTER II

ANALYSIS OF THE CURRENT SOLID WASTE MANAGEMENT SYSTEMS

A. Waste Stream Characterization

Refer to the following reaggregation of data tables II-1 through II-5 inclusive. Note that the waste stream composition (Table II-4) has been changed during the course of the planning process from the "EPA National Standard" (default) basis used in the needs assessment in order to reflect a more accurate analysis consistent with the region.

Tables II-1 through II-5

CHAPTER II: FORMS

A. Regional Summary: Waste Stream Characterization

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

Table II-1

County	Tons Disposed	Population (1991)	Waste Disposed Per Capita
Bledsoe	5,674	9,669	0.59
Bradley	57,500	73,712	0.78
Grundy	5,720	13,362	0.43
Hamilton	376,676	285,536	1.32
McMinn	32,477	42,384	0.77
Marion	14,812	24,860	0.60
Meigs	2,026	8,033	0.25
Polk	4,997	13,643	0.37
Rhea	12,500	24,344	0.51
Sequatchie	5,196	8,863	0.58
Regional Total	517,578	504,405	1.03

2. Origin of Regional Solid Waste in 1991 (TPY)

Table II-2

County	Residential	Institutional/ Commercial	Non-Hazardous Industrial	Special	Other
Bledsoe	3,404	1,986	284	0	0
Bradley	28,750	11,500	16,100	1,150	0
Grundy	3,947	1,201	572	0	0
Hamilton	100,973	152,233	41,970	78,000	3,500*
McMinn	16,239	8,119	8,119	n/a	n/a
Marion	5,924	4,444	4,444	0	n/a
Meigs	1,012	507	507	0	0
Polk	2,499	1,249	1,249	0	0
Rhea	7,500	1,250	2,500	1,250	0
Sequatchie	3,118	1,819	259	0	0
Regional Total	173,366	184,308	76,004	80,400	3,500

* Demolition Waste Estimate

3. Acceptance of Certain Categories of Solid Waste for Disposal or Incineration (TPY)

Table II-3

County/Facility	Yard Waste (Clippings- leaves-grass)		Sewage Sludge		Construction Demolition		Tires		White Goods	
	Y/N	Qty	Y/N	Qty	Y/N	Qty	Y/N	Qty	Y/N	Qty
Bledsoe	n		n		y	500	n		n	
Bradley	y	7,175	n		y	14,350	n		n	
Grundy	n		n		n		n		n	
Hamilton	y	n/a	n		y	1,000	n		n	
Summit	n		y	78,000	y	1,500	n		n	
McMinn	y	n/a	y	n/a	y	n/a	n		n	
Marion	n		n		y	n/a	n		n	
Rhea	n		y	1,250	n		n		n	
Regional Total		7,175		79,250		17,350		----		----

*White Goods - discarded major appliances, such as refrigerators, ranges, etc.
An "n/a" designation indicates that estimates were not available.

4. Description of the Waste Stream By Materials

Table II-4

Waste Category	National %	Calculated Tons	Southeast Tennessee	
			Regional %	Calc. Tons
Paper & paperboard	40.0	207,031	38.0	232,519
Glass	7.0	36,230	7.0	42,833
Ferrous Metals	6.5	33,643	7.0	42,833
Aluminum	1.4	7,246	1.5	9,178
Other Non-Ferrous Metals	0.6	3,105	0.5	3,059
Plastics	8.0	41,406	9.0	55,070
Rubber & Leather	2.5	12,939	3.0	18,357
Textiles	2.1	10,869	4.0	24,476
Wood	3.6	18,633	18.0	110,141
Food Waste	7.4	38,301	9.0	55,070
Yard Waste	17.6	91,094	incl. w/Wood	---
Misc. Inorganic Waste	1.5	7,764	incl. w/Other	---
Other	1.7	8,799	3.0	18,357
Total Municipal Solid Waste	100.0	517,060	100.0	611,893

For individual county characterizations, reference individual reports.

5. Unmanaged Waste*

Table II-5

County	Potential Waste Generation 1991 tpy	Actual Waste Disposed 1991 tpy	Unmanaged Waste 1991 (potential/actual) tpy	Percent of Potential Total
Bledsoe	10,638	5,674	4,964	46.7
Bradley	81,370	57,500	23,870	29.3
Grundy	14,631	5,720	8,911	60.9
Hamilton	312,104	376,676	5,000	16.0
McMinn	46,410	32,477	13,933	30.0
Marion	27,275	14,812	12,463	45.7
Meigs	8,860	2,026	6,834	77.1
Polk	14,927	4,997	9,930	66.5
Rhea	26,659	12,500	14,159	53.1
Sequatchie	9,740	5,196	4,544	46.7
Regional Total	552,614	517,578	104,608	18.9

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

B. Waste Collection and Transportation Systems

Note-Refer to Regional System Map contained herein.

As shown in the following table II-A the region is comprised of 193,574 households.

- 7.4% are served by convenience centers
- 50.4% are served by house-to-house pickup
- 6.0% are served by a greenbox system
- 5.1% are direct contract with private haulers
- 29.9% are unaccounted for regarding service

Table II-A provides a summary of the waste collection systems in the region on a county by county basis. Additional details may be found in the Appendix to chapters I through III.

**Summary of Waste Collection & Transportation Systems
Number of Household/Business Served By**

Table II-A

County	# of Households	Convenience Centers	House-To-House Pickup	Greenbox Drop-off	Direct Control Pick-Up	No Service	Unaccounted for Waste-TYPY
Bledsoe	3,261	0	681	2,512	68	0	830
Bradley	27,604	0	10,657	0	1,552	15,395	2,100
Grundy	4,784	2,300	0	2,484	0	0	2,130
Hamilton	111,799	0	72,034	0	6,506	33,259	4,800
Marion	9,215	0	3,154	6,061	0	0	8,000
McMinn	16,351	0	5,994	0	1,079	9,278	3,000
Meigs	2,996	2,996	0	0	0	0	3,150
Polk	5,092	4,195	897	0	0	0	3,700
Rhea	9,185	4,800	2,587	1,274	551	0	7,500
Sequatchie	3,287	0	1,499	1,737	51	0	2,100
Total	193,574	14,291 7.4%	97,503 50.4%	11,556 6.0%	9,807 5.1%	57,932 29.9%	37,310 7.2%

C. Source Reduction and Recycling Systems

Reference attached Table II-B Summary - Source Reduction and Recycling Systems.

(see attached)

Summary - Source Reduction and Recycling Systems
Table B

County	Recycling Collection Services						Commercial/ Institutional Waste Red. Tons	Composting Yard Waste	Composting Sludge	Quantity Collected/ Sold since 1991 Tons
	Curbside	Drop-Off	Buy Back	Co. Mingled Central Proc.	Processing Facilities					
Bledsoe	none	none	none	none	none	none	none	none	none	
Bradley	none	yes	none	none	none	4 industries reduction unknown	?	none	145.5	
Grundy	none	none	none	none	none	1 industry 5 tons	none	none	nil	
Hamilton	Chattanooga, Look-Out Mt Red Bank	Chattanooga Collegedale Orange Grove Signal Mt	none	none	Orange Grove BFI	5 industries 1,494 TPY	none	none	3,846	
Marion	So. Pittsburgh	County/So. Pittsburgh	none	none	none	1 industry quantity n/a	?	none	115.5	
McMinn	none	Athens Etowah County	none	none	none	1 industry quantity n/a	none	none	55.3	
Meigs	none	none	none	none	none	none	none	none	none	
Polk	none	none	none	none	none	none	none	none	none	
Rhea	none	Dayton	northern Rhea	none	none	none	none	none	just starting	
Sequatchie	none	Dunlap	none	none	none	none	none	none	unknown	
Total									4,162.7	

Region Summary and Synthesis

Most of the major recycling systems and markets are located along the Interstate 75 corridor from Athens to Chattanooga and on into Marion County (South Pittsburgh). This is also the area with the most industrial/commercial activity and largest proportion of the population. Other areas of the Region have incipient recycling programs, but most of these were not operating in 1991.

Currently, no county within the Planning Region has a recycling coordinator, and there are no county-sponsored recycling programs. Hamilton County had a recycling coordinator in 1991, but the position was abolished in 1992 pending the development of a solid waste plan. Consequently, all of the public recycling systems in Southeast Tennessee are municipal programs.

Most of the markets for recyclables are located in the Chattanooga area. Not surprisingly, this is where the majority of recycling programs are found. Most of the municipalities in Hamilton County either have recycling programs or are considering the development of a program.

Chattanooga has the only materials recovery facility in the region. The Orange Grove Center buys material directly from consumers; accepts recyclables from municipal programs; and processes all material collected from the Chattanooga pilot recycling program. If required, recyclables are sorted manually prior to processing for market. Center operators have thus far had no difficulty selling any material, including hard to market materials like plastic.

Browning Ferris Industries (BFI) also operates a processing center for separated recyclables. This facility is necessary for BFI operations since BFI provides recycling service to Red Bank, Cleveland and the City of Dalton, Georgia.

Obviously, Chattanooga will be a catchment area for most of the materials collected in the Region. Due to topographic constraints, there are three corridors that will "funnel" recyclables toward the Chattanooga area:

1. Along I-75 from the Athens area through Cleveland
2. Between Walden Ridge and the Tennessee River from the Dayton area through Soddy-Daisy
3. The Sequatchie Valley from Pikeville, through Dunlap, and on to the Jasper/South Pittsburgh area of Marion County.

Corridor 1 contains the largest and most viable recycling program. All the major

municipalities have a program in place. The primary need in this area is effective collection programs for rural areas. A collection system could be easily implemented at convenience centers located in Meigs and Polk Counties. However, there are no such systems in Bradley and McMinn Counties, and ancillary programs will be required in addition to those located in municipalities.

Recycling programs in Corridor 2 are much less developed outside of suburban Chattanooga. The only major program is in the city of Dayton, and it is still in the initial stages of developing a drop-off center.

Corridor 3 has the fewest opportunities to recycle in the region. This area is generally rural with no convenience centers or other permanent solid waste facilities to collect material. At the southern end of the corridor, however, South Pittsburgh has both a curbside program and a drop-off center. In addition, Marion County is planning to include recycling at convenience centers when the county converts their waste collection system.

Cooperative collection and marketing by Bledsoe, Grundy, Marion and Sequatchie counties would benefit the entire region. All of these counties will develop convenience center systems, and implementing recycling programs in conjunction with these systems would allow the counties to produce recyclables in sufficient volumes to market effectively.

In general, urban areas near markets either have adequate recycling programs or are in the process of developing such programs. Rural areas rarely have the opportunity to recycle anything but the most saleable items (i.e. aluminum cans). Most of these areas would benefit by the establishment of cooperative agreements to collect, transport and market materials.

Southeast Tennessee is very fortunate in having excellent markets for most recyclables. Paper products are especially easy to market since there are at least three major end-users in the region. Chattanooga is a major shipment point for many products that must go to markets outside the region. This should provide opportunities to market recyclables in areas outside the region via barge, back-hauling, etc.

Recycling programs outside the Chattanooga urban area generally do not collect enough material on a consistent basis to develop contractual relationships with buyers or end users of recyclables. Buyers want an assured supply of quality material and sellers need consistent markets. For most counties and communities in Southeast Tennessee, the only way to collect enough material to meet buyers' criteria is through a cooperative effort.

D. Waste Processing, Composting and Waste-To-Energy/Incineration Systems

A. Summary of Waste Disposal Facilities

County	Facility	Location	Waste Disposal Cap. TPD	Service Area	Remaining Life	Capital Cost \$	Annual Oper. Cost \$
Bledsoe	Class I LF	Southern Bledsoe	36 current	Bledsoe Sequatchie Pikeville Dunlap	11 years	150,000	73,627
Bradley	Class D LF	McDonald	200	Bradley Cleveland	Closed 7/93	2,600,000	720,000
Grundy	Class I LF	Coalmont	20	Grundy Monteagle Tracy Coalmont	Closed 3/94	n/a	n/a
Hamilton	Class I LF	Harrison	150	Hamilton Collegedale Lookout Mt Red Bank Ooltweah Signal Mt Soddy-Daisy Salem Creek	6.5 years	n/a	457,000
Hamilton (cont)	Class I LF	Summit	1500	Chattanooga East Ridge Red Bank Collegedale Soddy-Daisy	13 years	n/a	1,239,000
	Class IV LF	36th St LF	300	Hamilton Co	1 year	n/a	n/a
	Incinerator Brush/Wood Chipping	Wisdom St, Chatt.	20	Hamilton Co	20 years	n/a	n/a

D. Waste Processing, Composting and Waste-To-Energy/Incineration Systems

A. Summary of Waste Disposal Facilities

County	Facility	Location	Waste Disposal Cap. TPD	Service Area	Remaining Life	Capital Cost \$	Annual Oper. Cost \$
McMinn	Class I LF	Athens	145	McMinn Meigs Polk	40 + years	900,000	600,000
	Class I LF	Idlewild	65	McMinn Bradley Loudon Meigs Monroe	7 years	n/a	n/a
Marion	Class I LF	Jasper	39	Marion Jasper So. Pittsburgh	28 years	300,000	127,645
Meigs	none	-----	-----	-----	-----	-----	-----
Polk	none	-----	-----	-----	-----	-----	-----
Rhea	Class I LF	Evensville	90	Rhea Hamilton Meigs Dayton Graysville Spring City	Closed 3/93	100,000	265,000
Sequatchie	none	-----	-----	-----	-----	-----	-----
Total	7 Class I LF, 3 to close 1 Class D LF 1 Class IV LF 1 Incinerator	-----	2,565	10 County Region		4,050,000	3,482,272

D. (Continued)

1. Composting, see Table II-6, attached
2. Waste-To-Energy/Incineration, see Table II-7, attached

Table II-6

REGIONAL SUMMARY: FACILITIES

Table II-6

6. Operating and Planned Composting Facilities in the Region

Existing: None

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

Planned:

County	Facility Location	Tons of Waste Processed/Yr	Composted Materials		
			Yard Waste	Sewage Sludge	Solid Waste
Bradley	Landfill	1,838	YW		
Marion	Landfill	251	YW		
Hamilton	Landfill	54,000		SS	
Regional Total		56,089			

Table II-7

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

None planned or existing currently

Table II-7

Operating Facilities: None

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

Planned Facilities:

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

(Reference Chapter VII)
Recommend Further Study

E. Disposal Facilities - Landfills and Balefills

Note: Refer to the attached Tables II-8 through II-11.

Solid Waste Disposal Facilities

The only method used to dispose of solid waste within the Southeast Tennessee Development District is landfilling. Although there is currently enough landfill space available to dispose of all the solid waste generated, capacity short falls will occur in some counties within one year. The total capacity available in the District, however, is adequate to accommodate all waste projected for the next ten years.

There are eight publicly owned municipal solid waste landfills in the district; one owned by a private company and at least two industrial landfills that are dedicated for the particular use of one industry.

McMinn County Facilities

McMinn County has the only landfill in the Development District that meets the regulatory requirements promulgated under Rule 1200-1-7, Solid Waste Processing and Disposal, as revised. The McMinn facility is actually an expansion of the existing landfill, which was engineered at meet new regulations (a liner, leachate collection system, gas migration control, etc.)

The facility is owned and operated by the county, but it functions as a regional landfill since all waste generated in Meigs and Polk Counties is accepted for disposal. A higher tipping fee is charged for this service to help defray the high cost of landfill construction and operation. Nevertheless, tipping fees do not cover all landfill costs and the county general fund is the source for additional funding.

With an projected life of 40 years at current fill rates, capacity is assured for this three-county area. In addition, the Mine Road Landfill could accept municipal solid waste. This is a privately-owned facility which accepts special wastes, but there are no indication that municipal waste disposal would be considered by the owners.

Bradley County

The Bradley County Landfill is owned by the county and operated by a private company, SANTEK. Many improvements have been made to this facility, such as a peripheral leachate collection system, but capacity is limited to about one year. To date, the county has not filed a permit request with the Division of Solid Waste Management (DSWM) for a new site or a landfill expansion.

Bradley County (Continued)

Since permitting a landfill is generally a two year process, Bradley County could be without a disposal site for at least one year. Currently, there are no indications of how county officials intend to address the problem. There is adequate capacity in contiguous counties (McMinn and Hamilton) or private waste collection companies may wish to accept responsibility for waste disposal.

Hamilton County

Hamilton County is in the unique position of having two municipal solid waste landfills, one owned by the county and one by the City of Chattanooga. Both facilities can be expanded, and landfill operators expect to meet the requirements of new regulations. The county also has the only medical waste incinerator, located in the Erlanger Medical Center, there are no permitted medical waste incinerators in the District.

Between the two landfills, Hamilton County has enough landfill space to dispose of all solid waste for the next ten years. With a population of over 285,000, there is an adequate tax base to support both facilities, which have combined capacity of at least 1,650 tons per day.

From a regional viewpoint, the county waste disposal system is currently less efficient than is possible due to the duplication of services. The county has the resources and population to operate as a separate region if county and city cooperate.

Rhea County

Capacity will be exhausted at the Rhea County Landfill by the end of the year, and DSWM has not received permit applications for a proposed expansion. Rhea County will therefore ship waste outside the county for disposal. There are no indications that the county will be able to develop additional landfill capacity within the next two years.

County officials have not indicated what approach will be taken to transfer waste elsewhere. One possible solution would be to ship waste from the southern section of the county to the Soddy-Daisy transfer station (Hamilton County), and waste from the northern section to the Roane County Landfill (East Tennessee Development District). This appears to be the most rational approach due to geographic barriers and transportation network limitations.

Marion County

Approximately 28 years of life remains at the Marion County Landfill at current fill rates (-60 tons per day). The county expects to upgrade the facility to meet new regulations. There are currently no plans to provide any regional service.

Grundy County

The Grundy County Landfill will close before March 1994 when new regulatory requirements become effective for existing landfills. About 20 tons per day received at the current facility will be diverted elsewhere. County officials are actively engaged in locating alternative disposal options with neighboring counties.

Bledsoe and Sequatchie

The Bledsoe-Sequatchie Landfill is located in southern Bledsoe County. It is jointed operated by both counties and the cities of Pikeville and Dunlap. Consequently, it is functioning as a regional facility for the Sequatchie Valley, excluding Marion County.

There are plans to upgrade the current facility to meet new regulations. With a daily capacity of 60 tons, the landfill has approximately 11 years of life remaining.

General

All landfills in the District have adequate equipment and personnel to operate effectively under current regulations. However, landfill operators will likely need training to implement new regulations, and most likely need training to implement new regulations, and most will need to hire contractors to perform some functions (e.g. leachate control system installation).

Five counties in the Southeast Tennessee Development District are involved in regional solutions to solid waste disposal: Bledsoe, McMinn, Meigs, Polk and Sequatchie. Bradley, Grundy and Rhea Counties have a strong motivation to assess alternative options that may include regional alliances.

Integrated solid waste management systems seem to be developing as a matter of necessity. Several rural counties with low population densities are incapable of funding the development of waste disposal facilities. Meanwhile, counties with the financial capability are finding that landfills can be operated more economically by charging a higher tipping fee for out-of-county waste, or by simply sharing the burden equally with several jurisdictions. This reduces the local tax burden required to operate the landfill while mollifying citizens who are opposed to accepting out-of-county waste. Consequently, economic considerations are the primary motivating factors in developing disposal options.

Each operating Class I municipal solid waste landfill was visited in the Region to gather basic operational information. The site visits were conducted to observe general operational methods, they do not represent a comprehensive evaluation nor acceptance of existing disposal practices. Background information was obtained from the operators, County Executives, consultants, and the Needs Assessment. Summary reports were prepared on each facility. The landfills included were:

Grundy County Landfill
Marion County Landfill
Hamilton County Landfill
City of Chattanooga Landfill, Summit and the City
Air Curtain Destructor/Chipper Operation
Bledsoe/Sequatchie Landfill
Rhea County Landfill
McMinn County Landfill (accepts Meigs and Polk Counties' waste)
Mine Road Industrial Landfill (private landfill in McMinn County)
Bradley County Landfill (privately operated by Santek)

The reports outlined the brief history of the site, waste types, existing operations, plans for future operations, budget information as available, and other known disposal facilities in the County. Recommendations regarding the operations were also recorded and will be presented to the Counties individually.

Each landfill operator, with the exception of Grundy, indicated a possibility of continuing operations subsequent to Subtitle "D" deadlines, in compliance with new regulations. The landfill summary reports did not conclude with recommendations for continuing operations. The regional waste disposal needs, transportation networks, and general site suitability with access to the site's hydrogeologic/environmental/engineering evaluations for the facilities are needed to make conclusive recommendations for continuing operation.

The operational landfills in Georgia were also visited with brief reports prepared for Walker and Catoosa County Landfills. Dade County Landfill intends to close within the next year, so a site visit was not conducted, and only a brief report was generated.

Tables II-8 through II-11

8. Existing Municipal Solid Waste Landfills in the Region

Table II-8

County	Name of Landfill	Location	Permitted Capacity (acres)	Current Rate of Waste Accepted (tons/day)	Remaining Capacity (acres)	Remaining Air Space (yard ³)
Bledsoe	Bledsoe-Sequatchie	Pikeville	24	50	20	1,000,000
Bradley	Bradley	Cleveland	70	200	15	100,000
Grundy	Grundy	Coalmont	35	20	20	15,000
Hamilton	Hamilton	Birchwood Pike	37	200-250	16	350,000
Hamilton ¹	Summitt	Summitt	160	1,200-1,500	160	3,000,000
McMinn ²	McMinn	Athens	25-40	150	66	200,000
Marion	Marion	Jasper	81	60	15	500,000
Rhea	Rhea	Evensville	45	60	<1	10,000
Regional Total	n/a	n/a	n/a	1,940-2,290	n/a	5,175,000

¹Summitt plans to upgrade permitted area, will give 2,000,000 yd add'l space

²McMinn plans to upgrade permitted area, will give 2,500,000 add'l space

9. Existing Landfills Expected to Close Before 2003

Table II-9

County	Location	Current Use Tons/Day	Current Annual Use (Tons/Year)	Anticipated Date of Closure
Grundy	Coalmont	20	5,800	9/94
Rhea ¹	Evensville	60	18,000	11/93
Regional Total		80	23,800	

¹Rhea is currently designing a transfer station; also considering a Class I landfill for the future.

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

Table II-10

County	Proposed Facility Expan. New	Location	When Will Capacity be Available	Permitted Capacity Sought (acre)	Design Rate of Waste (tpd) Disposed	Potential Expansion Yes/No
Hamilton	x	Birchwood Pike	10/96	30	200-250	yes
Bledsoe/Seq	x	Pikeville	10/96	80	50	yes
Bradley	x	Cleveland	3/94-6/94	120	200	yes
Hamilton	x	Summitt	10/95-10/96	209	1200-1500	yes
McMinn	x	Athens	?	120	150	yes
Marion	x	Jasper	10/96	66	60	yes
Rhea	x	Rhea Co	?	80	60	yes
Planned New Regional Capacity	n/a	n/a	n/a	705	1,920-2,970	n/a

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

Existing figures from the needs assessment. Updated figures being compiled.
 Planned figures to be developed as part of the plan.

Table II-11

TONS

Year	Existing*	Planned*	Total*
FY 1993			
FY 1994			
FY 1995			
FY 1996			
FY 1997			
FY 1998			
FY 1999			
FY 2000			
FY 2001			
FY 2002			
FY 2003			

* Please refer to Individual County Reports

F. Costs of the Current System

Reference Individual Reports

G. Revenues

Reference Individual Reports

H. Public Information and Education Programs

County	No. Staff County/City Recycling Education	County Recycling Coordinator	County/City Sponsored Recycling Program	Educational Publications Material	County/City Recycling Coalition	Industry Sponsored Programs
Bledsoe	none	none	none	none	none	none
Bradley	none	none	none	yes, minimal	none	none
Grundy	none	none	none	none	none	none
Hamilton	none	none	yes, Chattanooga	yes	Chattanooga, Audubon Society	none
McMinn	none	none	none	none	none	yes
Marion	none	none	none	yes, brochures	Marion County Recycling Group	none
Meigs	none	none	none	none	none	none
Polk	none	none	none	none	none	none
Rhea	none	none	none	none	none	none
Sequatchie	none	none	none	none	none	none

Summary of MSW Recycling Public Information and Education Programs for the Region:

None of the counties or municipalities within the Region are currently sponsoring educational or informational programs. The few activities that exist are promoted by Keep America Beautiful (KAB), the Chattanooga Recycling Network and other ad hoc efforts.

The current efforts include clean-up programs, educational material and curricula. Education on environment and solid waste issues requires stronger focus and attention in both the near and long term for the Region.

Enclosed is the "Estimated Number of People Affected" by educational programs (1991 from "Needs Assessment").

I. Problem Wastes (Reference Chapter X and the Individual Reports)

J. System Base Map 1993

See Attached

K. Strengths and Weaknesses of the Existing System

Reference Individual Reports

DISTRICT SUMMARY & SYNTHESIS

ESTIMATED NUMBER OF PEOPLE AFFECTED (1991)

County	Government Sponsored Adult Waste Education Programs	Estimated Number School-Based Waste Education Programs*	Non-Profit Sponsored Waste Education Programs
Bledsoe	0	0	0
Bradley	0	9,000	5,000
Grundy	0	0	0
Hamilton	0	40,000	20,000
McMinn	0	6,000	10,000
Marion	0	4,000	10,000
Meigs	0	0	0
Polk	0	0	0
Rhea	0	0	5,000
Sequatchie	0	0	0
District Total	0	59,000	50,000

*Includes temporary, "one-time" classes:

CHAPTER III

**GROWTH TRENDS, WASTE PROJECTIONS &
PRELIMINARY SYSTEM STRUCTURE**

CHAPTER III

GROWTH TRENDS, WASTE PROJECTIONS & PRELIMINARY SYSTEM STRUCTURE

A. Projections of Solid Waste Stream Quantity

Refer to Tables III-1, III-2, III-3, III-4 and III-8 herein.

B. Preliminary System Design

The ten county Southeast Tennessee Planning Region presents an ideal set of conditions and circumstances to allow optimization of a long term waste management plan which includes all elements of a truly integrated program. Because of the geographic area, waste quantities, cooperative culture, markets for materials & composts, markets for energy, proximity of the TVA Watts Barr (and Kingston) Power Plants, --"Companion Boiler Program," cooperative energetic political environment and extensive diversity of the region virtually all solid waste management technologies can be evaluated and compared individually and collectively. The result will allow the Region to establish the most economical solution(s) its the solid waste management requirements.

The alternatives which will be reviewed technically and economically for the regional plan include:

- landfills
- composting-yard waste and sludge
- waste-to-energy
- TVA companion boiler (separate study)
- materials recovery facilities (recycling & refuse derived fuel)
- recycling systems including drop-off and curbside
- volume reduction techniques (baling)
- technology review
- transportation

It is anticipated that the most economical solid waste program for the region will include a combination of most or all of the previously described elements with an integrated plan.

C. Evaluation Criteria

The solid waste management system options will be carefully evaluated and presented in the next seven chapters. Final determination of the system elements, location, configuration, cost, etc. will be presented upon completion of the evaluation. The criteria for evaluation will include:

- capital & annual operating cost (economics)
- technology(s) technical experience
- institutional/political compatibility
- environmental impacts including transportation
- implementation (time & complexity)
- acceptability by individual participating counties/governments
- other criteria as may be selected by the Board

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/Persons/Year
Bledsoe	5,200	9,806	0.5303
Bradley	58,427	75,508	0.7738
Grundy	5,700	13,178	0.4325
Hamilton	451,110	284,018	1.5883
McMinn	40,080	42,385	0.9456
Marion	20,220	25,006	0.8086
Meigs	2,628	8,208	0.3202
Polk	5,844	13,612	0.4293
Rhea	17,884	24,351	0.7344
Sequatchie	4,800	8,958	0.5358
Total	611,893	505,030	1.2116

* Bradley County figures from Needs Assessment; remaining population figures from Needs Assessment, all other waste figures from 1993 scale data.

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
Bledsoe	5,224	5,244	5,274	5,298	5,323	5,348	5,373	5,382	5,408	5,433
Bradley	58,897	59,370	59,847	60,327	60,812	61,300	61,788	62,120	62,617	63,117
Grundy	5,674	5,648	5,622	5,596	5,570	5,545	5,500	5,488	5,514	5,540
Hamilton ¹	450,223	596,426	598,571	600,776	603,042	605,371	607,772	609,240	613,349	617,527
McMinn	40,079	40,080	40,081	40,081	40,082	40,082	40,083	40,007	40,008	40,008
Marion	20,260	20,299	20,340	20,378	20,418	20,458	20,497	20,498	20,539	20,580
Meigs	2,647	2,666	2,685	2,704	2,724	2,743	2,763	2,776	2,796	2,816
Polk	5,845	5,840	5,836	5,831	5,827	5,823	5,818	5,814	5,796	5,801
Rhea	17,884	17,887	17,888	17,890	17,891	17,894	17,895	17,861	17,864	17,866
Sequatchie	4,817	4,834	4,840	4,868	4,886	4,903	4,920	4,926	4,944	4,961
Total	611,550	758,294	760,984	763,749	766,575	769,467	772,409	774,112	778,835	783,649

* Quantities derived from per capita information in Table III-1 and population projections from Needs Assessment.

¹ Includes industrial sand waste starting in 1995.

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	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Bledsoe	5,389	5,404	5,440	5,465	5,490	5,516	5,542	5,552	5,578	5,604
Bradley	60,782	61,270	61,762	62,257	62,758	63,262	63,765	64,108	64,621	65,137
Grundy	5,821	5,794	5,767	5,741	5,714	5,688	5,662	5,630	5,657	5,684
Hamilton ¹	464,631	610,808	612,927	615,106	617,348	619,652	622,027	623,438	627,573	631,776
McMinn	41,362	41,363	41,364	41,364	41,365	41,365	41,366	41,287	41,288	41,288
Marion	21,577	21,619	21,662	21,704	21,745	21,788	21,831	21,874	21,918	21,960
Meigs	2,732	2,751	2,771	2,791	2,811	2,831	2,851	2,865	2,885	2,906
Polk	6,032	6,027	6,023	6,018	6,013	6,009	6,004	6,000	5,981	5,987
Rhea	18,457	18,459	18,461	18,462	18,464	18,466	18,468	18,433	18,435	18,437
Sequatchie	4,917	4,934	4,952	4,969	4,987	5,005	5,022	5,028	5,046	5,059
Total	631,700	778,429	781,129	783,877	786,695	789,582	792,538	794,215	798,982	803,838

* Quantity derived from Table III-2 plus economic growth factor of 3.2%.

¹ Includes industrial sand waste starting in 1995.

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

County	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Bledsoe	5,389	5,404	5,440	5,465	5,490	5,516	5,542	5,552	5,578	5,604
Bradley	53,063	47,010	47,387	47,766	48,148	48,531	48,910	48,764	49,149	49,535
Grundy	5,821	5,794	5,767	5,741	5,714	5,688	5,662	5,630	5,657	5,684
Hamilton	376,625	380,652	379,726	378,787	377,848	376,910	375,979	374,115	374,618	375,202
McMinn	49,625	41,116	41,129	41,141	41,155	41,168	41,181	41,124	41,126	41,148
Marion	21,577	20,502	20,543	20,583	20,621	20,662	20,703	20,742	20,783	20,824
Meigs	included	with	McMinn							
Polk	included	with	McMinn							
Rhea	17,617	14,267	14,238	14,208	14,177	14,145	14,111	14,047	14,011	13,974
Sequatchie	4,917	4,934	4,952	4,969	4,987	5,005	5,022	5,028	5,046	5,059
Total	534,634	519,679	519,182	518,660	518,140	517,625	517,110	515,002	515,968	517,030

* Quantity derived from Table III-3 less waste diversion estimates.

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)**

County	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Bledsoe	5,389	5,404	5,440	5,465	5,490	5,516	5,542	5,552	5,578	5,604
Bradley	53,063	47,010	47,387	47,766	48,148	48,531	48,910	48,764	49,149	49,535
Grundy	5,821	5,794	5,767	5,741	5,714	5,688	5,662	5,630	5,657	5,684
Hamilton	376,625	380,652	379,726	378,787	377,848	376,910	375,979	374,115	374,618	375,202
McMinn	49,625	41,116	41,129	41,141	41,155	41,168	41,181	41,124	41,126	41,148
Marion	21,577	20,502	20,543	20,583	20,621	20,662	20,703	20,742	20,783	20,824
Meigs	included	with	McMinn							
Polk	included	with	McMinn							
Rhea	17,617	14,267	14,238	14,208	14,177	14,145	14,111	14,047	14,011	13,974
Sequatchie	4,917	4,934	4,952	4,969	4,987	5,005	5,022	5,028	5,046	5,059
Total	534,634	519,679	519,182	518,660	518,140	517,625	517,110	515,002	515,968	517,030

* Quantity derived from Table III-3 less waste diversion estimates.

CHAPTER IV

WASTE REDUCTION

CHAPTER IV

WASTE REDUCTION

A. Introduction

The Solid Waste Management Act of 1991 states:

"The goal of the state is to reduce by twenty-five percent (25%) the amount of solid waste disposed of at municipal solid waste disposal facilities and incinerators, measured on a per capita basis within Tennessee by weight, by December 31, 1995." [T.C.A. Section 68-31-861(a)]

"... [E]ach plan submitted by a municipal solid waste region shall include ... a description of waste reduction activities designed to attain the twenty-five percent (25%) reduction required by Section 25(a)" [T.C.A. Section 68-31-861(a)]; and Section 14(b)10. [T.C.A. Section 68-31-815(b)(10)].

In order to comply with the Act, first a baseline regarding waste disposal quantity and population must be established. Once this is done, a 25% reduction goal can be calculated. Having established the 25% goal, a plan can be formulated to meet the reduction requirement.

B. Baseline Disposal Per Capita

In order to establish a baseline waste disposal quantity, 1989 waste disposal quantities and 1989 population estimates were used by the State of Tennessee. From these values, a waste disposal quantity per person was calculated for each county. Unless variances were requested based on more accurate information than that used by the State, these per capita numbers were then multiplied by 0.75 in order to establish the disposal per person required in order to meet the 25% reduction. This reduced per capita quantity is then multiplied by the 1995 projected population in order to establish the total disposal required to meet the diversion goal. These numbers are then compared with the actual projected waste requiring disposal in 1995. The difference between these numbers represents the additional diversion required (shortfall) or the surplus diversion achieved. This procedure and its result is summarized in Tables IV-1 and IV-2 and in Figures IV-1 and IV-2.

TABLE IV-1

Population & Quantities of Waste Disposed of at Municipal Solid Waste Disposal Facilities and Incineration in 1989

County	1989 Population	1989 Total Waste Disposed (tons)
Bledsoe	9,950	7,862
Bradley	75,400	65,520
Grundy	14,350	12,556
Hamilton	294,100	357,214
Marion	25,825	26,000
McMinn	43,700	38,454
Meigs	8,600	4,555
Polk	13,950	11,678
Rhea	25,500	14,742
Sequatchie	9,000	11,794
Regional Total	520,375	550,375

NOTE: Quantities based on UT's waste generation report

TABLE IV-2
Summary of Waste Diversion

Variance Requested	Tons	Population	Baseline Per Capita	Per Capita Goal (x 0.75)	Projected 1995 Population	Disposal Req'd. to meet	1995 Waste		Projected 1995 Per Capita
							Projected 1995 Population	Projected Waste Generation	
						Diversion Goal	Generation	Goal (Difference)	
Yes	7,862	9,650	0.81	0.61	9,889	6,102	5,404	(698)	0.55
Yes	65,520	72,800	0.90	0.68	76,726	52,174	61,270	9,096	0.80
Yes	12,556	13,404	0.94	0.70	13,057	9,140	5,794	(3,346)	0.44
Yes	451,110	284,081	1.59	1.19	283,014	458,106	610,808	152,702	2.16
Projected '95	610,808	283,014	2.16	1.62					
Yes	26,000	24,816	1.05	0.79	25,104	19,832	20,949	1,117	0.83
Yes	38,454	42,383	0.91	0.68	42,386	28,822	41,363	12,541	0.98
No	4,555	8,600	0.53	0.40	8,326	3,580	2,751	(829)	0.33
Yes	11,678	13,639	0.86	0.64	13,591	8,834	6,027	(2,807)	0.44
Yes	19,259	24,351	0.79	0.59	24,356	14,370	18,461	4,091	0.76
Yes	11,794	8,837	1.33	1.00	9,021	9,021	4,934	(4,087)	0.55
Total	808,486	501,494	1.61	1.21	505,470	609,981	777,761	167,780	1.54

- NOTE:**
- 1) Hamilton and Rhea County waste quantities are from scale data, other counties from UT waste generation study; Population based on UT study or waiver request based on census information.
 - 2) Hamilton County's 1995 wastestream is projected to include an industrial sand waste; based on this, Hamilton County will request a variance in 1995 in order to account for, and reflect these changes.

**Figure IV-1: Southeast Tennessee Region
Per Capita Class I Waste Disposal**

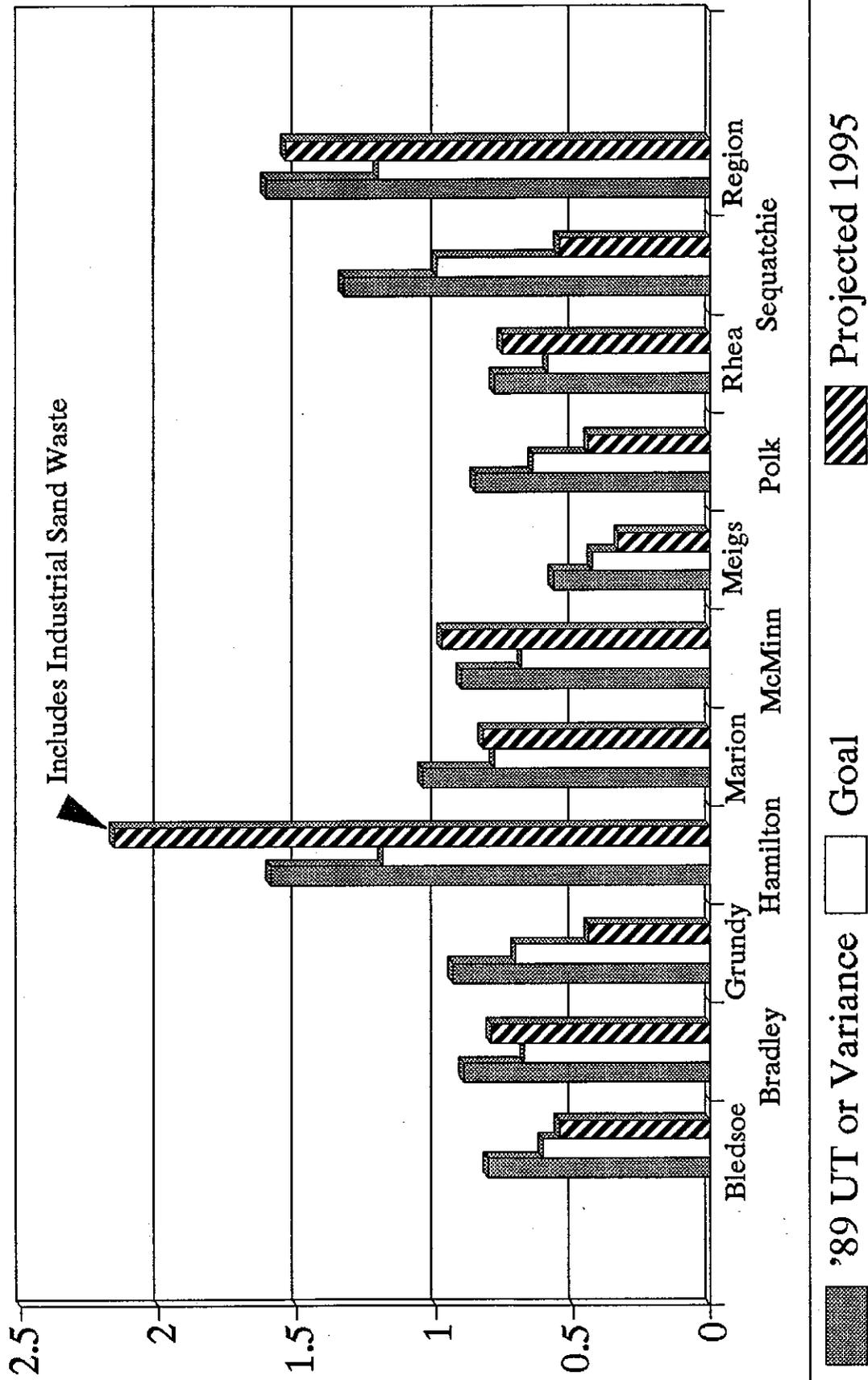
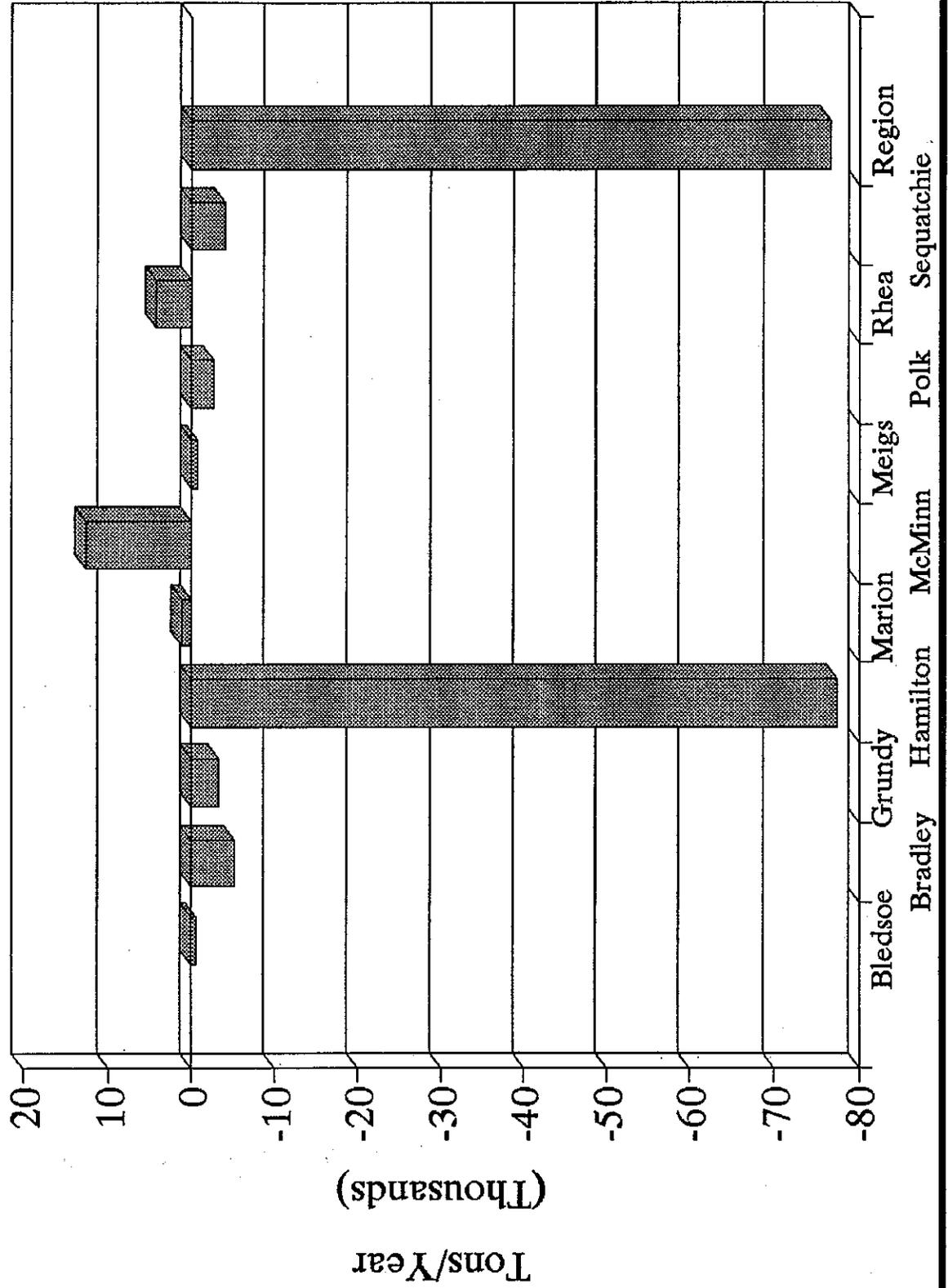


Figure IV-2: Projected 1995 Shortfall to Meet Diversion Requirements



C. Implementation

Having established the diversion shortfall or surplus, a plan must then be developed in order to either achieve additional diversion, or maintain the existing diversion. The following list summarizes the waste reduction recommendations:

- **Bledsoe/Sequatchie Counties**
 - Bledsoe and Sequatchie Counties have met the 25% diversion/reduction goal based on requested variances.
 - Institute 4 recyclable drop-off locations in each county at convenience centers to be constructed.
 - Adapt the recycling collection and processing system to allow business participation.
 - Establish a recyclable collection program to any industry which generates more than 100 tons of recyclables per year.
 - Establish a program to research industrial waste products within the region for potential reduction/markets.
 - Negotiate for the disposal of Class III/IV waste at Marion County's Class III/IV landfill (to be constructed).

- **Bradley County**
 - Bradley County has not yet met the 25% diversion/reduction goal based on the requested variance.
 - Maintain drop-off recycling at convenience center locations.
 - Design/permit/construct a Class III/IV disposal facility at existing Class I facility.
 - Maintain the yard waste composting facility for the City of Cleveland.
 - Encourage/support/implement industrial and residential source reduction.
 - Continue curbside collection program in the City of Cleveland.

- KAB drop-off facility and landfill drop-off in Cleveland to be maintained.
 - Adapt the recycling collection and processing system to allow business participation.
 - Establish a program to research industrial waste products within the region for potential reduction/markets.
- **Grundy County**
 - Grundy County has met the 25% reduction/diversion goal based on the requested variance.
 - Maintain existing private drop-off locations; if these facilities become unavailable in the future, Grundy County will provide drop-off locations to replace them.
 - Institute 5 additional recyclable drop-off locations at convenience centers to be constructed.
 - Adapt the recycling collection and processing system to allow business participation.
 - Adapt a recyclable collection program to any industry which generates more than 100 tons of recyclables per year.
 - Establish a program to research industrial waste products within the region for potential reduction/markets.
 - Negotiate for the disposal of Class III/IV waste at Marion County's Class III/IV landfill (to be constructed).
- **Hamilton County**
 - Hamilton County has not yet met the 25% diversion/reduction goal based on the requested variance.
 - Implement drop-off recycling in areas outside of Chattanooga.
 - Chattanooga to expand its curbside recycling programs to all households.
 - Design/permit/construct a Class III/IV landfill.

- Establish a "beneficial use" for the projected industrial sand waste.
 - Maintain operations of air curtain destructor by the City of Chattanooga.
 - Encourage/support/implement an industrial/commercial source reduction program.
 - Expand existing municipal recycling programs where customers can separate their commingled recyclables.
 - Establish a recyclable collection program to any industry which generates more than 100 tons of recyclables per year.
 - Establish a program to research industrial waste products within the region for potential reduction/markets.
 - Maintain all established drop-off and curbside recycling programs.
- **Marion County**
 - Marion County has not yet met the 25% diversion/reduction goal based on the requested variance.
 - Institute 5 recyclables drop-off locations at convenience centers to be constructed.
 - Design/permit/construct a Class III/IV disposal facility at the existing landfill.
 - Design/permit/construct/implement a yard waste composting facility.
 - Establish a recyclable collection program to any industry which generates more than 50 tons per year of recyclables.
 - Establish a program to research industrial waste products for diversion/markets.
 - Establish a yard waste composting program.
 - Encourage/support/implement an industrial/commercial source reduction program.
 - Maintain existing curbside recycling program.

- **McMinn, Meigs and Polk Counties**

- As a "sub-region", McMinn, Meigs and Polk Counties have not yet met the 25% diversion/reduction goal based on variances requested.
- Meigs and Polk Counties, as individual entities, have met the 25% diversion/reduction goal based on variance request (Polk County only).
- McMinn County to provide drop-off recycling at the landfill's residential drop-off facility plus two other locations.
- Meigs and Polk Counties implement drop-off recycling at two of nine existing convenience centers.
- McMinn County to design/permit/construct a Class III/IV disposal facility at the existing Class I landfill.
- Encourage/support/implement an industrial/commercial source reduction program.
- Design/permit/construct/implement a yard waste composting facility at the McMinn County landfill (optional).
- Establish a program to research industrial waste products for diversion/markets.

- **Rhea County**

- Rhea County has not yet met the 25% diversion/reduction goal based on the requested variance.
- Implement drop-off recycling at each of 4 (2 existing, 2 to be constructed) convenience centers.
- Negotiate for the disposal of Class III/IV waste at the City of Chattanooga's Summit landfill.
- Encourage/support/implement industrial/commercial source reduction program.
- Continue existing curbside recycling programs.
- Establish a program to research industrial waste products for diversion/markets.

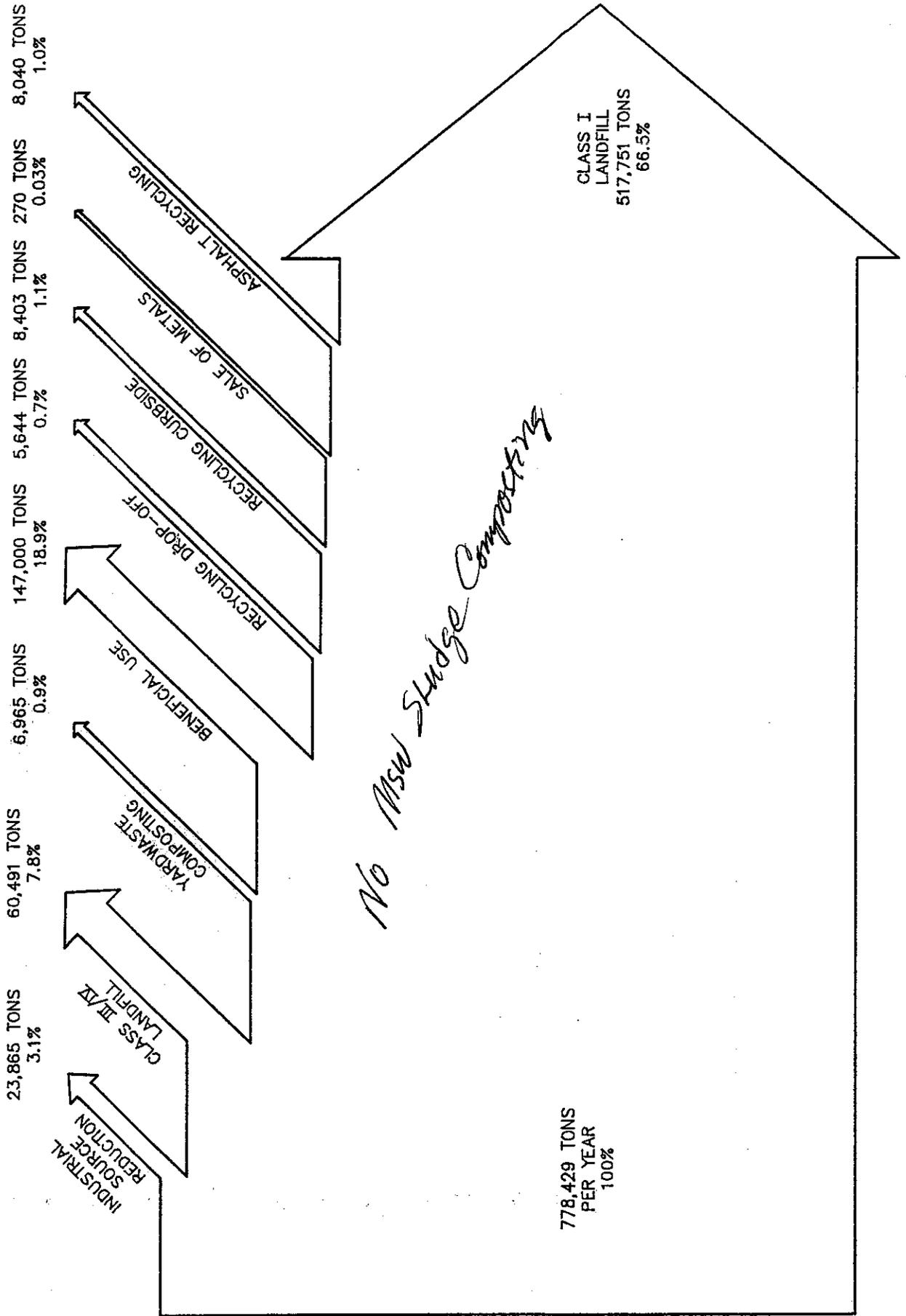
Tabular and graphic summaries follow in Table IV-3 and Figure IV-3.

TABLE IV-3:
Southeast Tennessee Planning Region
1995 Regional Waste Diversion Summary, Tons/Year

	Industrial Class											Total Diversion	
	Waste Generated	Source Reduction	III/IV Landfill	Yardwaste Composting	Beneficial Use	Recycling Drop-Off	Recycling Curbside	Sale of Metals	Asphalt Recycling	Class I Landfill	Total Diversion		
											Proposed	Goal	
Bledsoe	5,404	0	1,180	0	0	242	0	0	0	8,916	1,422	(4,785)	
Sequatchie (Sub-region)	4,934	613	5,475	6,714	0	349	995	0	0	47,124	14,146	9,096	
Bradley	61,270	0	673	0	0	120	0	0	0	5,001	793	(3,346)	
Grundy	5,794	67	595	251	0	239	0	0	0	20,467	1,152	1,117	
Marion	21,619	20,335	22,554	0	147,000	4,153	6,551	270	8,040	401,905	230,157	152,702	
Hamilton	610,808		21,254										
McMinn	41,363												
Meigs	2,751	2,740	5,840	0	0	331	0	0	0	41,230	8,911	8,905	
Polk (Sub-region)	6,027												
(Sub-region)	50,141												
Rhea	18,459	110	2,920	0	0	210	857	0	0	14,362	4,097	4,089	
Total	778,429	23,865	60,491	6,965	147,000	5,644	8,403	270	8,040	517,751	260,678	167,778	
Percentage	100.00%	3.07%	7.77%	0.89%	18.88%	0.73%	1.08%	0.03%	1.03%	66.51%	33.49%		

NOTE: Hamilton County Class III/IV landfill quantity includes 21,217 tons/yr to an air curtain destructor

**Figure IV-3: PROPORTIONAL FLOW DIAGRAM
SOUTHEAST TENNESSEE PLANNING REGION**



For further details regarding the information given in these summary tables and figures, please refer to the individual county reports.

It is recommended that for coordination and implementation purposes, the region form an office with accompanying staff to implement the programs relating to public information, education, waste reduction, source reduction and recycling. This office will also be responsible for required data collection and reporting to the state. This office is discussed in more detail in Chapter XI of this plan and the individual reports. Also, please refer to Chapter XI and the individual reports for further information relating to scheduling, implementation and milestones.

CHAPTER V
WASTE COLLECTION AND TRANSPORTATION

CHAPTER V
WASTE COLLECTION AND TRANSPORTATION

A. Introduction

The Solid Waste Management Act of 1991 states:

"... [E]ach plan submitted by a municipal solid waste region shall include ... collection capability, including data detailing the different types of collection systems and the population and areas which receive and do not receive such services ..." [T.C.A. 68-31-815(b)(2)(B)]; and "... as part of the local plan required by Section 13 of the Act, each county or multi-county municipal solid waste disposal region shall submit a plan for the adequate provision of collection services to the State Planning Office. Such plan shall identify unmet needs and shall be updated annually." [T.C.A. 68-31-851(b)]

This chapter documents the existing collection systems within the region and compares these systems with minimum guidelines established by the State. Any areas which do not meet State guidelines are then addressed in order to establish minimum service levels.

B. Implementation

The region's existing collection/transportation systems range from green boxes (unmanned drop-offs) in rural areas to door-to-door (curbside) collection in urban areas. Minimal service requirements are established by the State on the basis of minimum required number of convenience centers. This minimum number of convenience centers is determined by population of the region served or by area (square miles) of the region served. The lesser quantity of the two is then established as the minimum requirement of the State. In certain instances the recommended number of convenience centers exceeds the minimum requirements. This is done in order to provide a higher level of service due to the area's geography or specific demographics. Additionally, it has been indicated by the State that the assured offering of a "higher level" of service than that of convenience centers (such as door-to-door collection) will possibly be approved by the State in lieu of convenience centers.

C. Summary/Recommendations

The following list summarizes the recommendations for collection and transportation:

- **Bledsoe/Sequatchie**
 - Provide 4 convenience centers in each county.
 - Phase out existing green box clusters.
 - Maintain existing curbside collection within Pikeville and Dunlap.

- **Bradley County**
 - Provide 1 additional convenience center (total of 2).
 - Maintain existing curbside/door-to-door collection in Cleveland and Charleston.

- **Grundy County**
 - Provide 5 additional convenience centers (total of 7).
 - Phase out existing green box clusters.

- **Hamilton County**
 - Maintain existing collection programs.
 - Develop contracts with private haulers to guarantee that service is available to 90% of county.

- **Marion County**
 - Provide 5 convenience centers.
 - Phase out existing green box clusters.
 - Maintain existing curbside/door-to-door collection programs.

- **McMinn County**
 - Maintain existing convenience center.
 - Maintain existing collection programs.
 - Develop contracts with private haulers to guarantee that service is available to 90% of county.

- **Meigs County**
 - Maintain existing convenience centers.
 - Maintain existing collection services/programs.

- **Polk County**
 - Maintain existing convenience centers.
 - Maintain existing collection services/programs.

- **Rhea County**
 - Provide 2 additional convenience centers (total of 4).
 - Maintain existing collection services/programs.
 - Weigh options involved concerning the installation of a transfer station.

Tables V-1 through V-4 along with Figures V-1 and V-2 summarize the existing services, the minimum State requirements, the recommendations and the associated costs.

TABLE V-1:

Summary of Existing Waste Collection and Transportation

	Existing Services:			
	Green Box	Curbside/ Door-to-Door	Convenience Centers, Qty	Transfer Station, Qty
Bledsoe	Y	Y	0	0
Bradley	N	Y	1	0
Grundy	Y	N	2	0
Hamilton	N	Y	0	2
Marion	Y	Y	0	0
McMinn	N	Y	1	0
Meigs	N	Y	3	0
Polk	N	Y	6	0
Rhea	Y	Y	2	0
Sequatchie	Y	Y	0	0
Total			15	2

**TABLE V-2:
Summary of Convenience Center Requirements**

	Convenience Center Requirements						
	Minimum State Mandated Qty of Convenience Centers based on:		Existing	Min. Add'l. Req'd.	Quantity Recommended	Add'l. Req'd. to meet Recommendation	
	Population	Area					
Bledsoe	1	3	0	1	4	4	
Bradley	4	2	1	1	2	1	
Grundy	2	2	2	0	7	5	
Hamilton	9	3	0	3	see note	see note	
Marion	3	3	0	3	5	5	
McMinn	2	3	1	1	see note	see note	
Meigs	1	2	3	0	0	0	
Polk	2	3	6	0	0	0	
Rhea	2	2	2	0	4	2	
Sequatchie	1	2	0	1	4	4	
Total	27	25	15	10	26	21	

NOTE: County investigating collection programs in lieu of convenience centers to meet state requirements

**TABLE V-3:
Summary of Waste Collection and Transportation Costs**

	Tons Served by Recommendation	1995 Projected Costs				Total	Cost/Ton
		Transportation	O & M	Annualized Capital			
Bledsoe	4,211	\$24,570	\$35,620	\$27,618	\$87,808	\$20.85	
Bradley	2,334	\$0	\$30,000	\$0	\$30,000	\$12.85	
Grundy	5,794	\$107,016	\$71,240	\$0	\$178,256	\$30.77	
Hamilton	463,808	incl.	incl.	incl.	\$3,131,503	\$6.75	
Marion	6,480	\$0	\$315,512	\$46,632	\$362,144	\$55.89	
McMinn	700	incl.	incl.	incl.	\$12,000	\$17.14	
Meigs	1,248	incl.	incl.	incl.	\$60,000	\$48.08	
Polk	3,500	incl.	incl.	incl.	\$171,000	\$48.86	
Rhea	6,645	incl.	incl.	incl.	\$147,013	\$22.12	
Sequatchie	3,512	\$24,570	\$35,620	\$27,618	\$87,808	\$25.00	
Total	498,232	\$156,156	\$487,992	\$101,868	\$4,267,532	\$8.57	

**TABLE V-4:
Summary of Recommendations**

	Summary of Recommendations			
	Green Box	Door-to-Door	Convenience Centers	Transfer Station
Bledsoe	A	B	C	D
Bradley	D	B	B	D
Grundy	A	D	C	E
Hamilton	D	B	E	B
Marion	A	B	C	D
McMinn	D	B	B,E	D
Meigs	D	B	B	D
Polk	D	B	B	D
Rhea	A	B	C	D
Sequatchie	A	B	C	D

LEGEND: A - Phase Out
 B - Maintain Existing
 C - Install/Implement
 D - Not Included
 E - To be determined

**Figure V-1: Projected 1995
Collection & Transportation Costs**

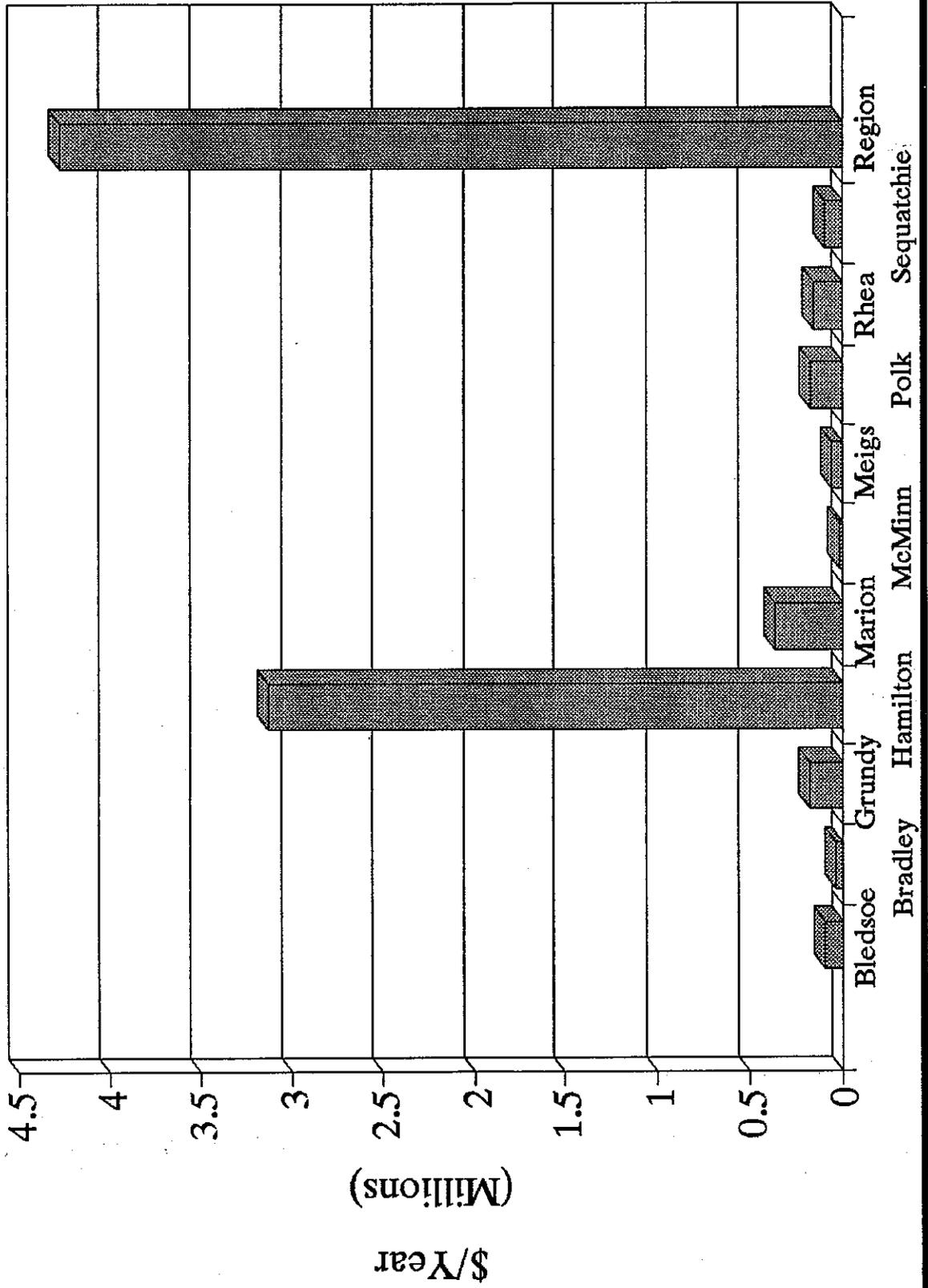
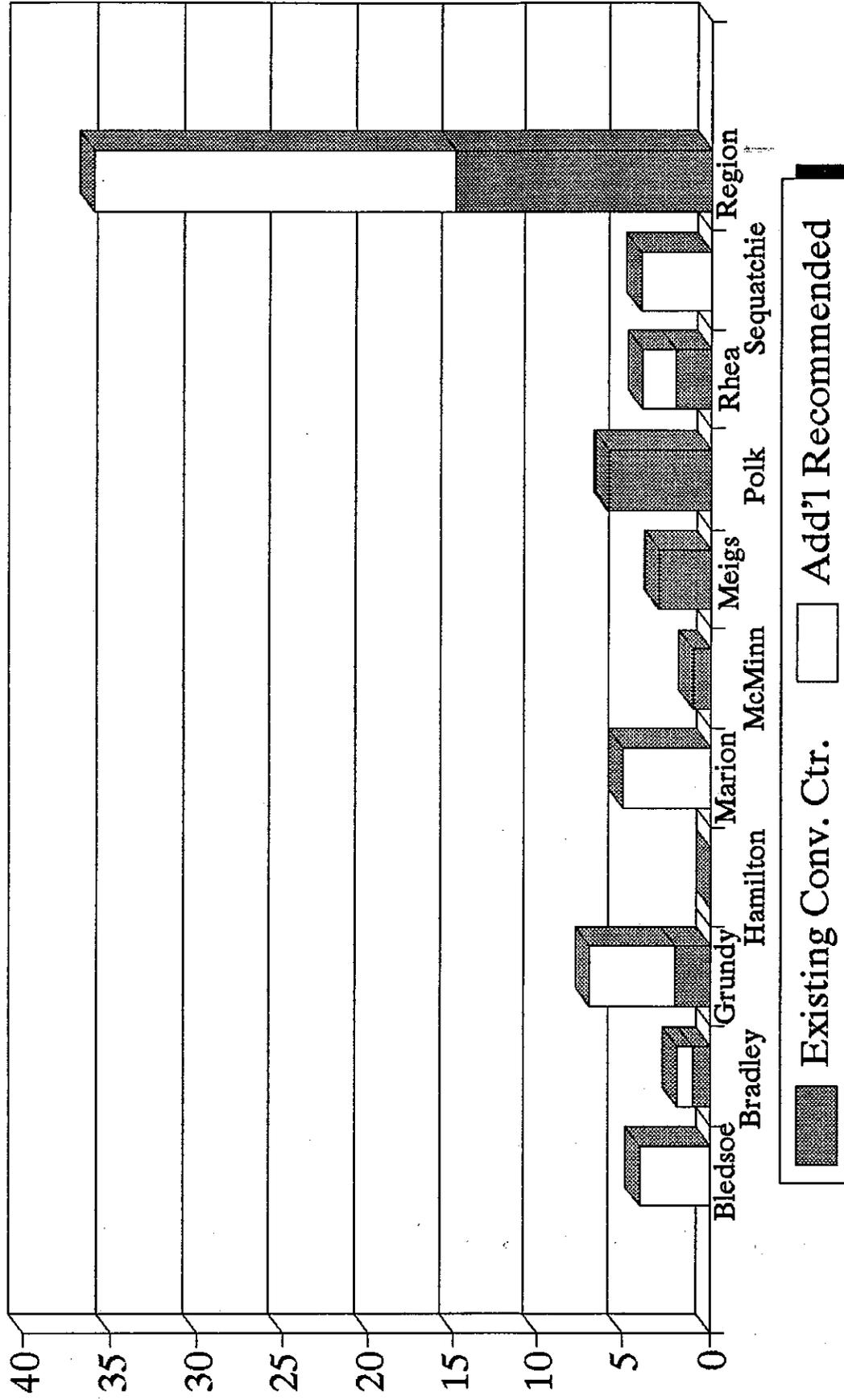


Figure V-2: Recommended Total Number of Convenience Centers



NOTE: Hamilton and McMinn Counties investigating collection programs in lieu of convenience centers to meet state requirements

For further details regarding the information given in these summary tables and figures, please refer to the individual county reports.

For information relating to staffing, please reference Section 7 of the individual reports. For information relating to scheduling, implementation, financing and funding, please refer to Chapter XI of this plan.

It is recommended that for coordination and implementation purposes, the region form an office with accompanying staff to implement the programs relating to public information, education, waste reduction, source reduction and recycling. This office should also be responsible for required data collection and reporting to the state. This office is discussed in more detail in Chapter XI of this plan and in the individual reports.

A map of the region, locating the existing and planned facilities can also be found as a part of Chapter XI of this plan.

CHAPTER VI

RECYCLING

CHAPTER VI

RECYCLING

138

A. Introduction

The Solid Waste Management Act of 1991 states:

"... Each plan submitted by a municipal solid waste region shall include ... a recycling plan, including a description of current public and private recycling efforts and planned efforts to enhance recycling within the county or region." [T.C.A. 68-31-815(b)(7)]

and "Effective January 1, 1996, each county shall provide ... one (1) or more sites for collection of recyclable materials ..." [T.C.A. 68-31-863(a)]

"Each person or entity operating a collection site for recyclable materials shall annually report the quantities of recyclable materials collected, by type of material, to the region which shall then report ... [this information] ... to the State Planning Office." [T.C.A. 68-31-863(b)]

This chapter documents the existing and planned recycling efforts within the region. This information is then compared with minimum State requirements concerning recycling and the availability of recycling centers to the public. If requirements have not been met, recommendations are then made to upgrade/institute minimum levels of service.

B. Implementation

The region's existing recycling services are summarized in Table VI-1. From this table it can be seen that only 3 of the 10 regional counties do not have any type of existing recycling program. The existing programs in the other 7 counties range from drop-off programs to extensive curbside systems and central processing facilities. In addition to these, several private businesses and industries have initiated their own recycling programs.

It is recommended that the region establish and maintain an office whose purpose, among other responsibilities, would be to coordinate recycling activities and education. Through this office, the recyclables recovered by the 10 counties could be pooled for sale

to end-users or brokers thus achieving substantial recyclable quantities and higher market pricing. This office will also act as the liaison between the counties and the State's office of cooperative marketing.

**TABLE VI-1:
Existing Recycling Programs**

	Curbside	Drop-Off	Buy Back	Co-Mingled Central Processing	Processing Facilities
Bledsoe	none	none	none	none	none
Bradley	Cleveland	yes	none	none	none
Grundy	none	Tracy City Coalmont	none	none	none
Hamilton	Chattanooga Look-Out Mtn. Red Bank East Ridge Signal Mtn.	Chattanooga Collegedale Orange Grove	none	none	Orange Grove BFI
Marion	South Pittsburgh	County South Pittsburgh	none	none	none
McMinn	none	Athens Etowah County	none	none	none
Meigs	none	none	none	none	none
Polk	none	none	none	none	none
Rhea	Dayton Spring City	yes	northern Rhea	none	none
Sequatchie	none	Dunlap	none	none	none

C. Recommendations/Comments

Based on information summarized in Table VI-1, recommendations were made regarding the maintenance of existing systems along with the initialization of additional services and systems. A summary of these recommendations follows:

- **Bledsoe/Sequatchie Counties**
 - Implement drop-off recycling at convenience centers.
 - Establish a recyclable collection program to any industry which generates more than 100 tons of recyclables/year.
 - Establish a program to research industrial waste products with regard to potential markets.

- **Bradley County**
 - Implement drop-off recycling at convenience centers.
 - Maintain drop-off recycling at the Keep America Beautiful facility.
 - Maintain curbside recycling program in Cleveland.
 - Establish a program to research industrial waste products with regard to potential markets.

- **Grundy County**
 - Maintain existing drop-off programs.
 - Establish a recyclable collection program to any industry which generates more than 100 tons of recyclables/year.
 - Establish a program to research industrial waste products with regard to potential markets.

- **Hamilton County**

- Establish a recyclable collection program to any industry which generates more than 100 tons of recyclables/year.
- Establish a program to research industrial waste products with regard to potential markets.
- Expand Chattanooga's curbside collection program to include all Chattanooga households.
- Implement 3 drop-off recycling in areas outside of Chattanooga.
- Maintain existing curbside and drop-off recycling programs.
- Maintain existing materials recovery systems.

- **Marion County**

- Implement drop-off recycling at convenience centers.
- Establish a recyclable collection program to any industry which generates more than 50 tons of recyclables/year.
- Establish a program to research industrial waste products with regard to potential markets.
- Maintain existing recycling programs.

- **McMinn County**

- Establish a program to research industrial waste products with regard to potential markets.
- Provide drop-off recycling at the landfill.
- Maintain existing drop-off recycling programs.

- **Meigs County**
 - Establish a program to research industrial waste products with regard to potential markets.
 - Provide drop-off recycling at the existing convenience center near Decatur.
 - Provide drop-off recycling at other convenience centers (optional).

- **Polk County**
 - Establish a program to research industrial waste products with regard to potential markets.
 - Provide drop-off recycling at the existing convenience center near Benton.
 - Provide drop-off recycling at other convenience centers (optional).

- **Rhea County**
 - Implement drop-off recycling at convenience centers.
 - Maintain existing curbside and drop-off recycling programs.
 - Establish a program to research industrial waste products with regard to potential markets.

A tabular summary of these findings is presented in Tables VI-2 through VI-4. These tables summarize the type of systems to be utilized, the number of households served, the targeted recyclables along with estimated quantities recovered. Costs associated with the proposed drop-off programs are then summarized in Table VI-5.

**TABLE VI-2:
Recycling Summary**

	Recommendations				# of Households	
	Door-to-Door	Drop-Off	MRF	# of Drop-Offs	Door-to-Door	Drop-Off/Conv. Ctr.
Bledsoe	Maintain	Y	N	4	783	3,261
Bradley	Maintain	Y	N	2	11,285	3,500
Grundy	N	Maintain	N	2	0	3,261
Hamilton	Maintain	Y	Maintain	3	68,315	43,484
Marion	Maintain	Y	N	5	3,198	6,516
McMinn	N	Y	N	3	0	6,818
Meigs	N	Y	N	1	0	523
Polk	N	Y	N	1	0	382
Rhea	Maintain	Y	N	4	3,124	5,708
Sequatchie	Maintain	Y	N	4	1,700	3,287
Total				29	88,405	76,740

NOTE: Grundy County has already met its diversion goal; items/quantites shown are for information in the event Grundy County chooses to start a drop-off program.

TABLE VI-3:

Material Targetted for Recycling

	Recyclable Material to be Recovered												
	Other Paper			Glass			Alum.		Tin Cans	Other Ferrous	PET	HDPE	Other Plastic
	ONP	OCC		Clr	Grn	Brn	Cans	Alum.					
Bledsoe	X	X		X	X	X	X						
Bradley	X	X		X	X	X	X						
Grundy	X	X		X	X	X	X						
Hamilton	X	X		X	X	X	X		X		X	X	
Marion	X	X		X	X	X	X						
McMinn	X	X		X	X	X	X						
Meigs	X	X		X	X	X	X						
Polk	X	X		X	X	X	X						
Rhea	X	X		X	X	X	X						
Squatchie	X	X		X	X	X	X						

LEGEND: ONP - Old Newspapers

OCC - Old Corrugated Cardboard

Clr - Clear Glass Containers

Grn - Green Glass Containers

Brn - Brown or Amber Glass Containers

PET - Polyethylene Terephthalate (soft drink bottles)

HDPE - High Density Polyethylene (milk jugs)

NOTE: Grundy County has already achieved its diversion goal; items shown are for information in the event Grundy County chooses to start a drop-off program.

**TABLE VI-4:
Estimated 1995 Recovered Recyclable Quantities**

	Estimated Quantity Recovered, Tons				Estimated Total Recovery
	Drop-Off		Curbside		
	Proposed	Existing	Proposed	Existing	
Bledsoe	120	0	0	0	120
Bradley	0	349	0	995	1,344
Grundy	120	0	0	0	120
Hamilton	1940	3092	2472	2125	9,629
Marion	239	0	0	0	239
McMinn	25	274	0	0	299
Meigs	18	0	0	0	18
Polk	14	0	0	0	14
Rhea	210	0	0	857	1,067
Sequatchie	122	0	0	0	122
Total	2,808	3,715	2,472	3,977	12,972

NOTE:

- 1) Grundy County has already met its diversion goal; quantities shown are for information in the event the county chooses to start a drop-off program.
- 2) Hamilton County quantities exclude air curtain destructors, asphalt recycling,

**TABLE VI-5:
Estimated Drop-Off Recycling Costs**

	Recovered Recyclables Tons/Year	Estimated Revenue \$/Year	COSTS				Net Cost/ Year	Net Cost/ Ton
			Transportation & Operating	Capital	MRF "Tip Fee"	Total		
Bledsoe	120	\$1,942	\$4,095	\$8,246	\$4,200	\$16,541	\$14,599	\$122
Bradley	349	\$4,111	\$11,016	\$0	\$12,215	\$23,231	\$19,120	\$55
Grundy	120	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hamilton	1,930	\$27,065	\$68,712	\$26,203	\$67,550	\$162,465	\$135,400	\$70
Marion	239	\$4,045	\$7,560	\$10,308	\$8,365	\$26,233	\$22,188	\$93
McMinn	25	\$227	\$2,160	\$1,838	\$875	\$4,873	\$4,646	\$186
Meigs	18	\$440	\$2,160	\$1,838	\$630	\$4,628	\$4,188	\$233
Polk	14	\$319	\$2,160	\$1,838	\$490	\$4,488	\$4,169	\$298
Rhea	210	\$3,593	\$9,720	\$7,800	\$7,350	\$24,870	\$21,277	\$101
Sequatchie	122	\$1,947	\$1,944	\$8,246	\$4,270	\$14,460	\$12,513	\$103
Total	3,147	\$43,689	\$109,527	\$66,317	\$105,945	\$281,789	\$238,100	\$76

NOTE: Grundy County has already met its diversion goal; quantities shown are for information in the event Grundy County chooses to start a drop-off program.

A summary of the region's existing and proposed recycling programs and its relationship to the diversion goal is included in Table VI-6.

TABLE VI-6
Southeast Tennessee Planning Region
1995 Regional Waste Diversion Summary, Tons/Year

	Industrial Class											Total Diversion	
	Waste Generated	Source Reduction	III/IV Landfill	Yardwaste Composting	Beneficial Use	Recycling Drop-Off	Recycling Curbside	Sale of Metals	Asphalt Recycling	Class I Landfill	Proposed	Goal	
Bledsoe	5,404	0	1,180	0	0	242	0	0	0	8,916	1,422	(4,785)	
Sequatchie (Sub-region)	4,934												
Bradley	61,270	613	5,475	6,714	0	349	995	0	0	47,124	14,146	9,096	
Grundy	5,794	0	673	0	0	120	0	0	0	5,001	793	(3,346)	
Marion	21,619	67	595	251	0	239	0	0	0	20,467	1,152	1,117	
Hamilton	610,808	20,335	22,554	0	147,000	4,153	6,551	270	8,040	401,905	230,157	152,702	
McMinn	41,363												
Meigs	2,751	2,740	5,840	0	0	331	0	0	0	41,230	8,911	8,905	
Polk (Sub-region)	6,027												
Rhea	18,459	110	2,920	0	0	210	857	0	0	14,362	4,097	4,089	
Total	778,429	23,865	60,491	6,965	147,000	5,644	8,403	270	8,040	517,751	260,678	167,778	
Percentage	100.00%	3.07%	7.77%	0.89%	18.88%	0.73%	1.08%	0.03%	1.03%	66.51%	33.49%		

NOTE: Hamilton County Class III/IV landfill quantity includes 21,217 tons/yr to an air curtain destructor

121 PP

CHAPTER VII

**COMPOSTING, SOLID WASTE PROCESSING,
WASTE-TO-ENERGY AND INCINERATION CAPACITY**

CHAPTER VII

COMPOSTING, SOLID WASTE PROCESSING, WASTE-TO-ENERGY AND INCINERATION CAPACITY

1.0 General

1.1 Composting

Composting is addressed for specific counties within the 10-county region. Yardwaste composting programs are addressed for Bradley and Marion counties. Please refer to those individual county reports for information concerning these issues.

1.2 Incineration Capacity

The 10-county region does contain incineration capacity in the form of air curtain destructors in individual counties. Please refer to those individual reports for further information regarding this capacity.

1.3 Solid Waste Processing and Waste-to-Energy

The possibility of the construction and operation of a waste-to-energy facility was investigated for the Southeast Tennessee Region. There are several industries and companies within this region which use steam, chilled water or hot water in their manufacturing process and would therefore represent potential energy customers for a waste-to-energy facility.

The primary goals and objectives of implementing a waste-to-energy facility for this region include two main items. First, through the combustion of MSW the volume is reduced by approximately 90%. This results in a large savings in available landfill space, and thus cost savings. Secondly, a waste-to-energy facility offers an additional revenue source from the sale of energy. This additional revenue stream can be used to offset the disposal cost of the waste. If viable, a waste-to-energy project may offer a community an alternative which is, overall, less expensive than other options available to them.

2.0 Energy Market Survey

A survey of the available energy market within the region was conducted with primary focus on Hamilton, Bradley and McMinn counties. This involved the contact of several industries and manufacturing facilities to determine interest and energy needs/requirements. These energy needs include the use of steam, chilled water or hot water. The production of

electricity for sale to TVA (the region's utility) was not addressed as the primary source of revenue due to TVA's low production costs and thus, low electricity purchase price. A summary of the companies contacted is included in Table VII-1.

Energy market survey forms for all of the companies interviewed either in person or by telephone are also available, but are NOT included with in the appendix information. Most of this information is sensitive with regard to production costs relating to competition. This information can be made available upon request to governmental officials.

TABLE VII-1
Potential Energy Customers for a Waste-to-Energy Project
Southeast Development District

COMPANY	PRODUCT	# EMPLOYEES	COMMENTS
Buster Brown Apparel	Clothing	3500	Switchboard operator will not put calls thru w/out specific names; messages were left for someone familiar w/production/operations to call back; mailed letter to plant manager; no response.
Combustion Engineering	Boilers, Tanks	1300	Do not use steam.
DuPont	Yarn	1700	Sent ltr per their request; DuPont attempted similar project 3 - 4 yrs ago; very interested in prospect. Reference energy market survey form and report.
McKee Foods Corp	Cakes, Cookies	2700	Was referred to five individuals; have been told that chilled water is used; several attempts to contact resulted in no response.
SCT Yarns, Inc.	Yarn	1300	Left several messages; no response.
Seaboard Farms of Chattanooga	Poultry Processing	1020	Interviewed Bill Coates, maintenance manager on 3/26/93. Reference energy market survey form.
E'Con Mills, Inc.	Carpets	90	Unable to contact.
Chattem, Inc. Chemical Division	Aluminum Compounds	350	Interviewed Ray Smith, VP Operations and Ben Carter, Plant Engineer on 8/20/93; Reference energy market survey form.
Chattem, Inc. Consumer Products	Pharmaceuticals	180	See above.
Container Corp. of America	Shipping Containers	100	Left several messages; no response.
Dixie Yarns	Cotton Yarn	346	Interviewed Don Huffman on 8/23/93. Reference energy market survey form.
Durham Knitting Mills		230	Unable to make contact-out of business.
D.M. Steward Manufacturing Co.	Ceramics, Magnets	190	Spoke with Wayne Bishsop; don't use steam, chilled water or hot water.
Fibron Division Synthetic Industries	Fibrillated Yarn	200	Spoke with Richard Finney, maintenance supervisor; don't use steam, chilled water or hot water.

TABLE VII-1
 Potential Energy Customers for a Waste-to-Energy Project
 Southeast Development District

COMPANY	PRODUCT	# EMPLOYEES	COMMENTS
Hamilton Concrete Products	Concrete Block, Bricks	150	Left several messages; no response.
J.W. Bray Co., Inc.	Footwear	100	Contacted, do not use steam, chilled water or hot water.
Planters	Crackers, Chips	230	Contacted; do not use much steam, chilled water or hot water.
Quaker Oats	Grain Products	183	Contacted; distribution center no energy usage.
Rock-TN Company	Recycled Paperboard	180	Contacted; feels W-T-E would compete w/ business; not interested.
Signal Mountain Cement	Cement	200	Contacted Joe Zimmerman; do not use steam, chilled water or hot water; burn coal & petroleum coke for concrete drying; have used flyash and bottom ash in process.
Top Flight Paper Products	Paper products	250	Contacted Wejun Robinson, plant manager; no significant energy usage.
Tuftco Corporation	Textiles	300	Contacted; don't use steam, hot water or chilled water.
Velsicol Chemical Corporation	Agricultural Chemicals	117	Interviewed Mike Poe, environmental manager & Ron Burton, facilities engineer on 8/26/93. Reference energy market survey form.
W. R. Grace & Company	Chemicals	110	Contacted Ed Laughlin by letter, received response on 8/27/93 by mail. Reference energy market survey form.
Brock Candy Company	Confection Products	525	Interviewed Bob Davis 9/2/93; moderate interest; reference energy market survey form.
Astec Industries	Asphalt Mixers	500	Contacted George Francisco; don't use steam, chilled water or hot water.
Chattanooga Group	Wire Products	400	Contacted; don't use steam, hot water or chilled water.
Coors Electronic Packaging	Porcelain Electric Supply	450	Contacted; moderate interest; sent letter per Coors request; no response.
Mueller Company	Valves	630	Contacted Gary Phillips, plant environmental engineer; no steam or hot water usage, minimal cooling water.
The Woodbridge Group	Polyurethane Foam	160	Left several messages; no response.

TABLE VII-1
Potential Energy Customers for a Waste-to-Energy Project
Southeast Development District

COMPANY	PRODUCT	# EMPLOYEES	COMMENTS
Siskin Steel & Supply Co.		350	Contacted; warehouse facility, no energy usage.
Airco, Inc.	Acetylene, Oxygen	310	Contacted; do not use steam, hot water or chilled water.
Komatsu Dresser Co.	Heavy Construction Equipment	283	Interviewed Randy Ragan, manager, manufacturing engineering on 8/19/93. Currently, very minimal steam usage-future expansion (approx 3 yrs) might significantly increase usage.
Chattanooga Further Processing		300	Unable to contact.
BASF	Latex	220	Left several messages; no response.
U.S. Pipe & Foundry	Valves & Fittings	875	Contacted; don't use steam, hot water or chilled water.
U.S. Pipe & Foundry	Soil Pipe Div.	321	Out of business
Chattanooga News-Free Press	newspaper	700	Left several messages; no response.
Olin Corporation	chemicals	359	Spoke w/Steve Barnes; do use steam & chilled water; steam is produced by burning hydrogen which is a by-product of their process (zero fuel cost); Interviewed Dennis Odom on 9/22/93 (reference energy market survey form); Olin was to contact Draper Aden regarding interest - no response.
Southern Cellulose Products, Inc.	Cotton linter pulp	116	Interviewed Ben Painter, plant manager on 8/23/93. Reference energy market survey form.
Bunge Foods	cooking oil	180	Interviewed Ralf Misner on 9/20/93; reference energy market survey form.
Southern Foundry Supply	recycled metal	100	Interviewed Mike Trainer; do not use steam, chilled water or hot water.
United Knitting Company (Bradley County)	knit fabric	250	Interviewed Gary Biggs 9/3/93; moderate interest; reference energy market survey form.
Newly Wed Foods	food coatings	120	Mailed letter; no response.
Hardwood Frames of America	wood frames	140	Left messages, mailed letter; no response.

TABLE VII-1
Potential Energy Customers for a Waste-to-Energy Project
 Southeast Development District

COMPANY	PRODUCT	# EMPLOYEES	COMMENTS
Georgia Pacific	corrugated shipping cases	102	Mailed letter; uses small amount of steam; not enough to justify a WTE facility.
Allied Signal	brake lining	575	Left messages, mailed letter; no response.
Permna Color	garment dying	275	Left messages, mailed letter; no response.
Eaton Corp	disconnect switches	176	Left messages, mailed letter; no response.
American Uniform	industrial clothing	750	Mailed letter; no response.
Schering-Plough Health Care Products	foot care products	437	Mailed letter; no response.
Athens Products	electric motors	300	Mailed letter; no response.
The Heil Company	tanks, trailers	235	Mailed letter; no response.
Athens Furniture	furniture	550	Mailed letter; no response.
Johnson Controls/Hoover Automotive	auto seat frames	350	Mailed letter; no response.
Thomas & Betts Corp	electric components	500	Mailed letter; no response.
Hardwick Clothes, Inc.	clothing	650	Spoke w/ David Ramsey; very interested; reference energy market survey form.
Duracell, Inc.	batteries	650	Left several messages; no response.
Westvaco	folding boxes	154	Spoke w/ Franklin Rose; very little usage of steam, chilled water or hot water; doesn't think it would be economically feasible.
Magic Chef	electric & gas ranges	2600	Spoke w/ Don Lofly; interested, but small user; reference energy market survey form.
Con Agra Foodservice	foodservice	?	No significant energy usage.

TABLE VII-1
Potential Energy Customers for a Waste-to-Energy Project
Southeast Development District

COMPANY	PRODUCT	# EMPLOYEES	COMMENTS
Coppinger & Affiliates	printing, processing	1200	Left several messages; no response.
Cattnapper/Cleveland Chair	furniture	650	Left several messages; no response.
Peyton Southeast Corp.	distribution center	?	Does not use steam, hot water or chilled water.
Bowater, Inc.	newsprint	1600	Contacted B. Litzenberg; sent letter per Bowater request (reference energy market survey form); no response.
Johnston Coca-Cola	soft drink	200	Interviewed 10/4/93; Uses small quantity of steam, chilled water and hot water; not significant usage.
M & M Mars	candy	700	Left several messages; no response.
Frigidaire Company	ranges	600	Left several messages; no response.
P-I Inc.	plastic products	300	Left several messages; no response.
Alco Chemicals	industrial chemicals	125	Uses a small amount of steam and chilled water.
Signal Apparel	T-Shirts	105	Left several messages; no response.
Danube Carpet Mills	carpets	?	Contacted; not interested.
Wheland Foundry	iron castings	1225	Left several messages; no response.

The results of this survey identified six (6) areas/companies which could possibly result in a viable waste-to-energy project. The identification of these six areas was based on the amount and usage of energy by the company (in the form of steam, chilled water or hot water) or on the availability of several energy customers within the area. These six areas/companies are as follows:

- 1) E.I. DuPont De Nemours & Company; north of the downtown Chattanooga area.
- 2) Southern Chattanooga/Forest Hills Cemetery/Central Avenue Area; Primary companies: Bunge Foods, Velsicol Chemical and Southern Cellulose Products.
- 3) Bowater, Inc.; Calhoun, TN.
- 4) Old Tasso Road, Cleveland, TN.; Companies include Coppinger & Affiliates, Georgia-Pacific, Westvaco Folding Carton, Eaton Corporation, Hardwick Clothes, Permna Color and Allied Signal.
- 5) Bradley Industrial Park; Cleveland, TN.; Companies include United Knitting, Newly Wed Foods, Catnapper, Johnston Coca-Cola and Peyton's Southeast.
- 6) Olin Corporation; Charleston, TN.

Of these six (6) potential waste-to-energy projects, all but two were eliminated due to either the lack of a substantial energy market or the lack of response/interest of the companies involved. The two remaining companies/areas which were investigated are as follows:

- 1) E.I. DuPont De Nemours & Company; north of the downtown Chattanooga area.
- 2) Southern Chattanooga/Forest Hills Cemetery/Central Avenue Area; Primary companies: Bunge Foods, Velsicol Chemical and Southern Cellulose Products.

3.0 Evaluation Approach

3.1 General

The two alternates described above form the basis of the waste-to-energy evaluation for this region. These two alternates are discussed in detail in sections which follow, but first several additional aspects of a waste-to-energy option must be explored. Due to the state mandated 25% recycling/reduction goal, recyclables must be removed from the waste stream. Also, landfills must be provided to take any material which would not go to a waste-to-energy facility and to also accept the ash residue after the combustion process. Based on these conditions, a fully integrated approach will be taken in this waste-to-energy analysis. This approach will include the evaluation of not only the waste-to-energy facility(s), but also recycling/RDF facilities, transfer stations and landfills.

3.2 Design Philosophy

The Southeast Development District consists of 10 counties covering a total area of 3,780 square miles. Because of this vast area, the demographics and logistics mandate that the area be divided into smaller sections which would then collect the MSW, remove the recyclables, dispose of residues/construction/demolition waste (and other waste not suited for combustion at a waste-to-energy facility) and transport the refuse-derived fuel (RDF) to either of the two potential waste-to-energy sites.

From an examination of existing waste transportation/disposal practices already in place within the region, the ten county region was divided into four (4) areas in order to simplify the integrated waste-to-energy analysis. Figure VII-1 represents the 10 (ten) county region's and Figure VII-2 shows the division of the region into these four areas.

In order to simplify the processing and handling of the MSW and RDF, one location within each area had to be selected for that area's recycling/RDF facility. Based on existing transportation and waste disposal patterns and through discussions with the local authorities and governmental officials, the respective recycling/RDF facilities were located at existing landfill facilities. There are two major reasons for this selection; 1) the present transportation flows of the waste to these locations are already established and 2) there is going to be waste delivered to, and generated at, the recycling/RDF facilities which would not be transported to a waste-to-energy facility for combustion. These include construction and demolition materials, along with some residue material from the recycling/RDF process. For these reasons, the landfill locations were chosen for the recycling/RDF facilities.

Where necessary, the transfer of portions of the raw MSW stream is also evaluated. These transfer evaluations were included to facilitate the movement of the MSW within each area in order to remove recyclables and process the MSW into RDF. These evaluations are included in Section 4.4 to follow.

Figure VII-3 shows the flow patterns and facilities of each of the four areas and the region as a whole. A summary of the design concept for this integrated waste disposal evaluation is shown in Table VII-2. It should be noted that 1998 projected waste quantities are used throughout this chapter for sizing of facilities and transportation cost estimates. This is projected to be the first year of operation of a waste-to-energy facility.

↑
Waste-to-Energy Does Not Count for 25% Reduction

BASELINE MAP INCLUDING WASTE FLOW PATTERNS AND PROPOSED SOLID WASTE PROGRAMS SOUTHEAST TENNESSEE SOLID WASTE PLANNING REGION

Draper Aden Associates
CONSULTING ENGINEERS
Blackburg, Va. - Richmond, Va. - Nashville, Tenn.

LEGEND

- | | |
|------------------------------|---------------------------------------------|
| CLASS I LANDFILL | EXISTING DROP-OFF RECYCLING |
| EXISTING TRANSFER STATION | PROPOSED RECYCLING DROP-OFF |
| PROPOSED TRANSFER STATION | PROPOSED CLASS III/IV LANDFILL |
| INCINERATOR (BRUSH) | HOUSEHOLD HAZARDOUS WASTE COLLECTION CENTER |
| EXISTING CONVENIENCE CENTERS | PROPOSED SLUDGE COMPOSTING |
| PROPOSED CONVENIENCE CENTERS | PROPOSED YARDWASTE COMPOSTING |

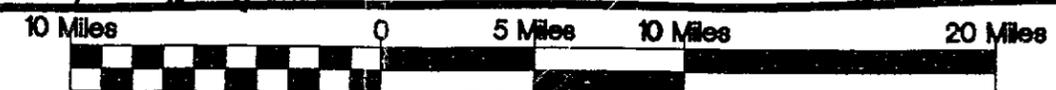
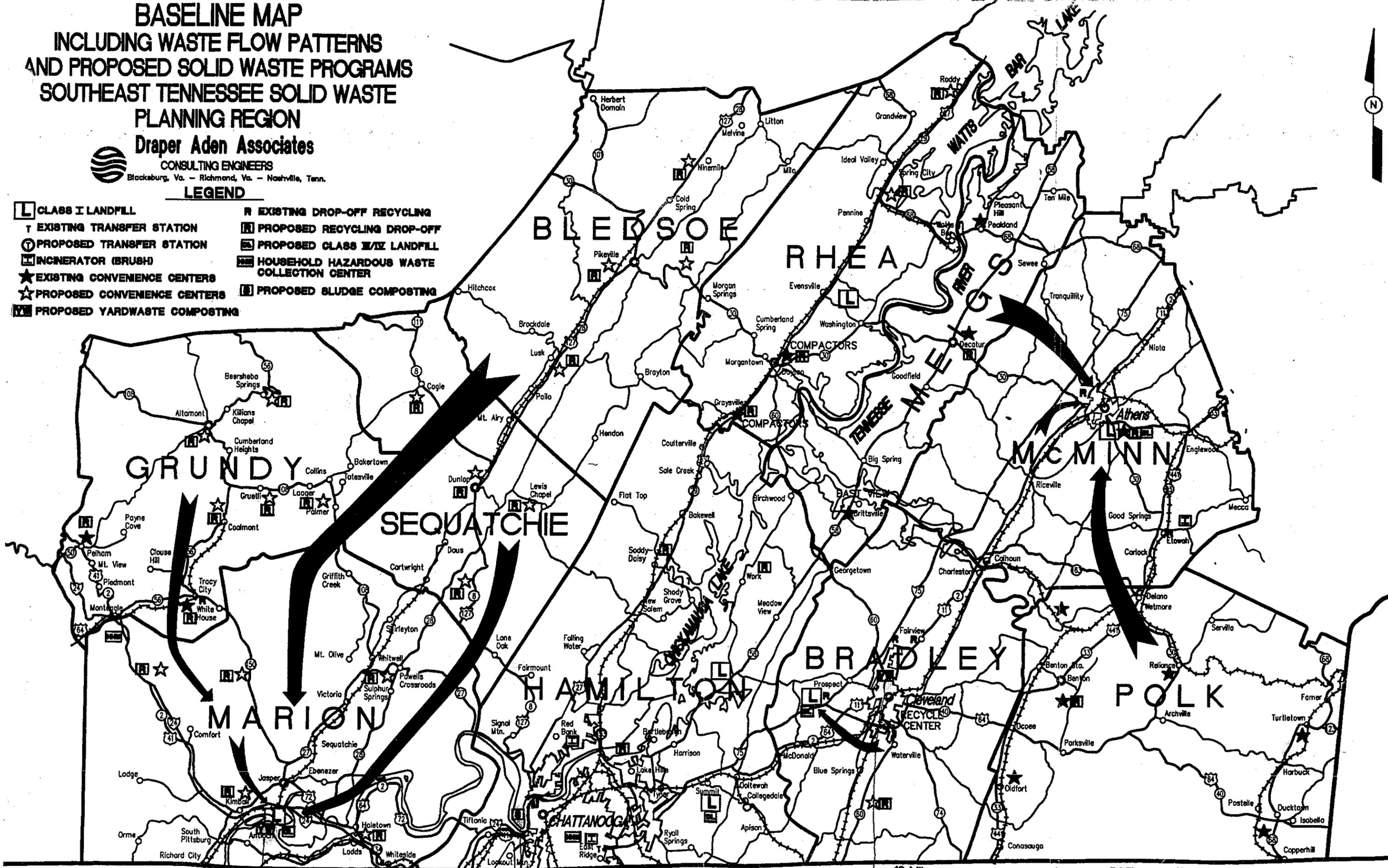
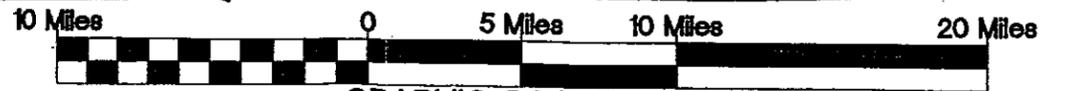
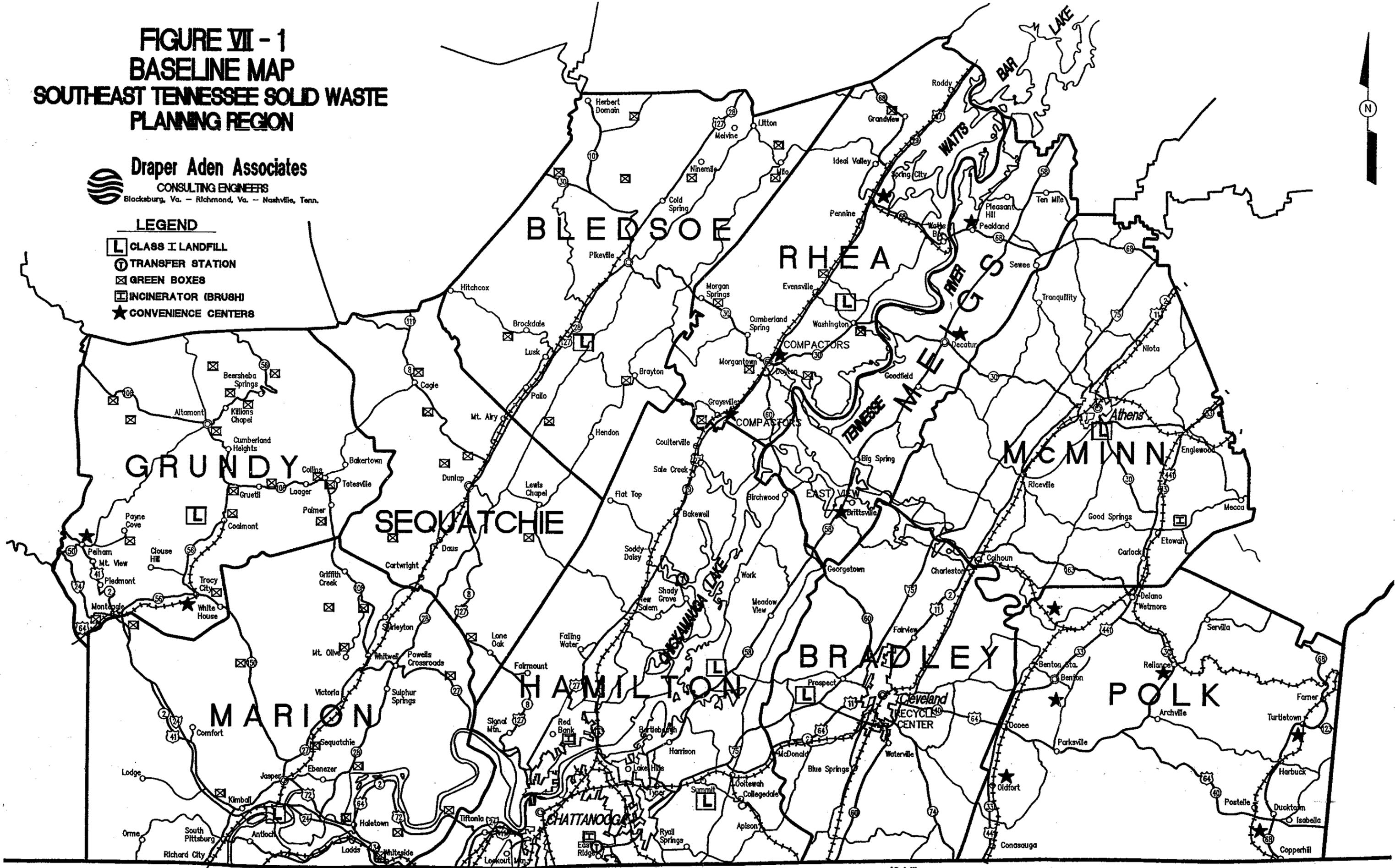


FIGURE VII - 1 BASELINE MAP SOUTHEAST TENNESSEE SOLID WASTE PLANNING REGION

Draper Aden Associates
CONSULTING ENGINEERS
Blacksburg, Va. - Richmond, Va. - Nashville, Tenn.

LEGEND

-  CLASS I LANDFILL
-  TRANSFER STATION
-  GREEN BOXES
-  INCINERATOR (BRUSH)
-  CONVENIENCE CENTERS



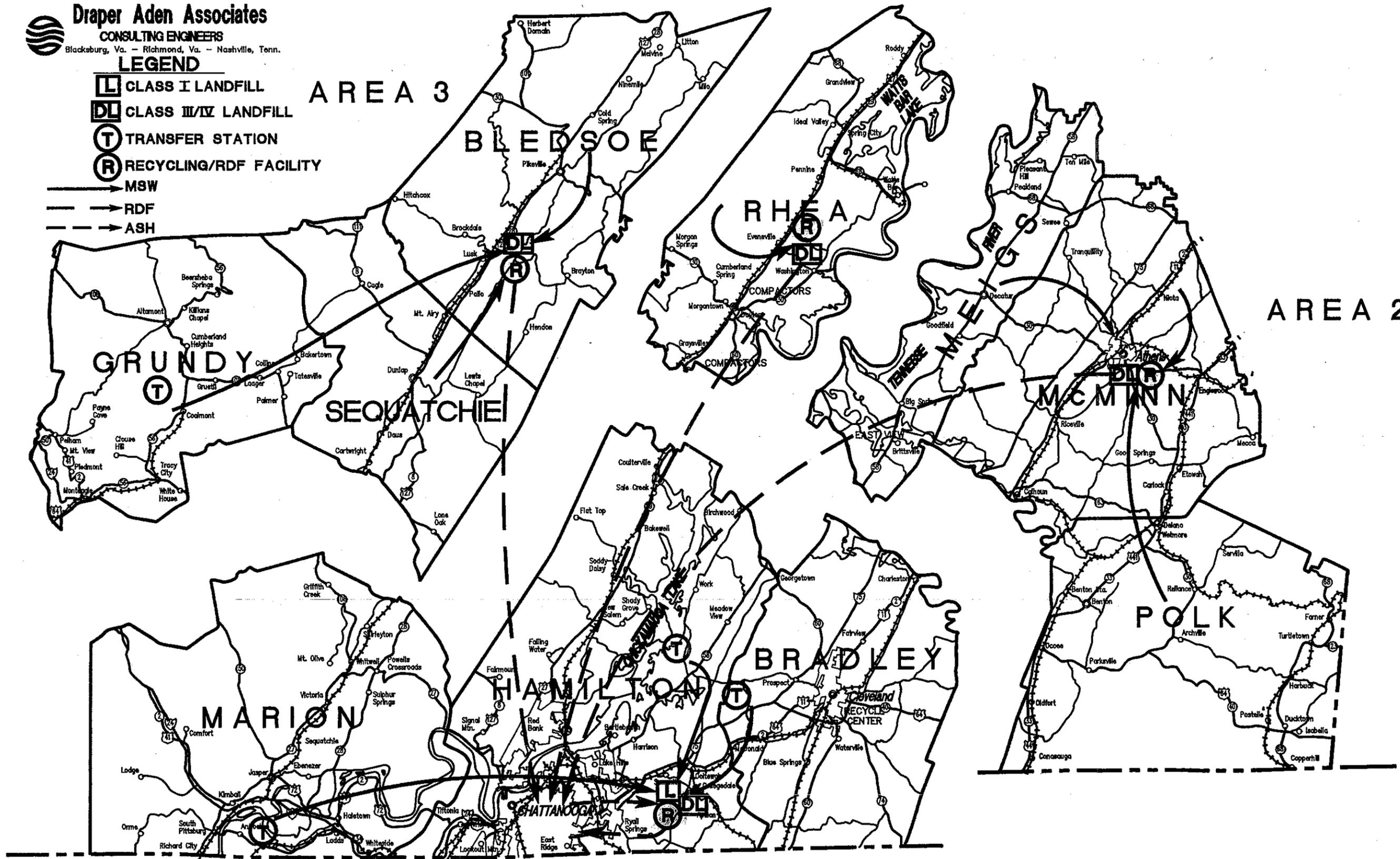
**FIGURE VI - 3
FLOW PATTERNS
SOUTHEAST TENNESSEE SOLID WASTE
PLANNING REGION**

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Blackburg, Va. - Richmond, Va. - Nashville, Tenn.

LEGEND

- [L]** CLASS I LANDFILL
- [DL]** CLASS III/IV LANDFILL
- (T)** TRANSFER STATION
- (R)** RECYCLING/RDF FACILITY

- MSW
- - -** RDF
- - -** ASH

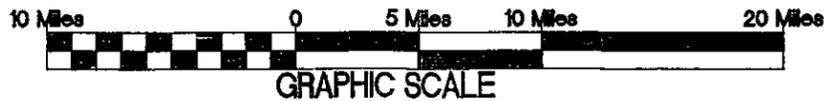


AREA 4

AREA 3

AREA 2

AREA 1



For Area 3:

MSW from Grundy County would be brought to the Grundy County Landfill site where the MSW would be transferred to trailer transport via a new transfer station. From here the MSW would be transferred to the area's recycling/RDF facility at the Bledsoe County landfill. Sequatchie and Bledsoe counties would also transport their MSW to the recycling/RDF facility located at the Bledsoe County Landfill. At this point, the recyclables would be removed from the wastestream and transported to market. The remaining RDF would then be transported to one of the two potential waste-to-energy sites in Chattanooga.

For Area 4:

MSW from Rhea County would be brought to the area's recycling/RDF facility located at the Rhea County landfill. After separating the recyclables from the wastestream, the remaining RDF would be transported to one of the two potential waste-to-energy sites in Chattanooga.

A simple flow diagram is presented in Figure VII-4 to further explain the waste handling/processing/transportation scenario.

4.0 Transportation

4.1 General

As stated earlier, the Southeast Development District consists of 10 counties covering a total area of 3,780 square miles. Due to this vast area, the transportation requirements and the associated costs play a critical role in any waste disposal plan. The transportation analysis is further complicated by the position of a facility based on criteria outside the needs of transport (i.e. availability of facility, willingness to host facility, geology, etc.). From an examination of existing waste transportation/disposal practices already in place within the region, the ten county region was divided into four (4) areas as described in the previous section. This was done in order to simplify the transport of the MSW to a recycling/RDF facility, the residuals to a landfill, the RDF to one of the two potential waste-to-energy sites and the ash to a landfill facility. Figure VII-1 shows the 10 (ten) county region and its major roadways, railways and waterways.

4.2 Alternates

The division of the ten county region into these four processing/transportation areas (as represented in Figure VII-2) simplifies the transportation evaluation. In viewing Figure VII-1, it is recognized that the ten county region offers some unique transportation alternates. Not only is the more common alternate of roadway transport available to the counties, but two other modes become evident; river transport (barging) and railway. In examining Figure VII-1, it is evident that all of the areas have access to roadways as well as railways and areas 2 and 4 also have access to the Tennessee River. Each of these modes of transport, 1)roadway 2) waterway and 3) railway were examined as to the viability and economics for each area and the region as a whole.

TABLE VII-2: Description of Areas and Respective Facilities

Area	Counties	Waste Quantity Tons/Year	Facilities
1	Hamilton Marion Bradley	461,350 21,745 <u>62,758</u> 545,853	Waste-to-Energy Recycling/RDF Transfer Stations Landfills
2	McMinn Meigs Polk	41,365 2,811 <u>6,013</u> 50,189	Recycling/RDF Landfill
3	Bledsoe Grundy Sequatchie	5,490 5,714 <u>4,987</u> 16,191	Recycling/RDF Landfill
4	Rhea	18,467	Recycling/RDF Landfill
Total		630,700	

Referring to Table VII-2, and Figure VII-3:

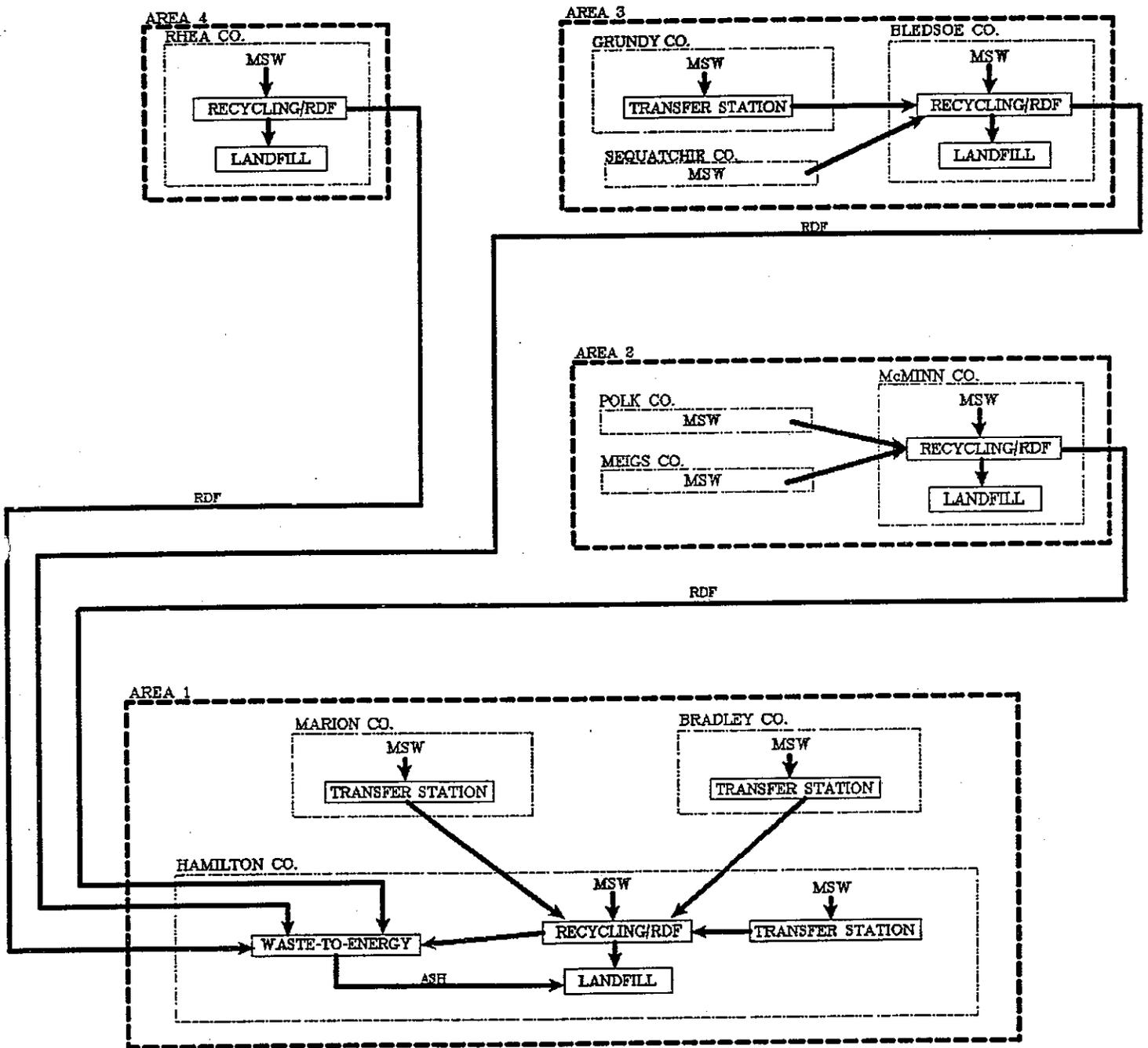
For Area 1:

MSW from Marion and Bradley counties will be delivered to each respective counties' landfill. At this point, the MSW will be loaded onto transfer trailers to be hauled to the area's recycling/RDF facility to be located at the City of Chattanooga's Summitt landfill. Waste presently being delivered to the Hamilton County landfill north of Chattanooga will also be transferred to the Summitt Landfill for recycling and RDF processing. The recyclables pulled from the waste stream at the recycling/RDF facility would be sold and transported to market; the RDF produced would then be transferred from the Summit Landfill location to either of the two potential waste-to-energy locations for combustion. After combustion, the ash residue would then be transferred back to the Summitt landfill for disposal.

For Area 2:

MSW from Polk, Meigs and McMinn counties would be delivered to the area's recycling/RDF facility in McMinn County at the McMinn County landfill. At this point the recyclables would be separated from the wastestream and sent to market. The remaining RDF would then be transported to one of the two potential waste-to-energy facility sites in Chattanooga.

Figure VII - 4 : MSW/RDF/Ash Flow Diagram



Please note, due to the close proximity of the two alternates identified as potential energy customers, for purposes of this evaluation, transportation distances to these sites are assumed to be the same.

4.3 Basis of Evaluation

A description of the four transportation areas and the associated transport/transfer/processing scenarios for each are described in the prior section in Table VII-2 and graphically shown in Figure VII-3. It is important to understand that the transportation alternates examined for this study do not include every waste disposal vehicle which picks-up, transfers or hauls waste within the ten county region. With the exception of some intra-area MSW transfer stations described in Section 4.4, this evaluation focuses primarily on the regional transport of two materials: the RDF and the ash residue. This evaluation examines the transport of these items in the following ways:

- 1) Transport of RDF from the recycling/RDF facilities to the waste-to-energy locations.
- 2) Transport of the residue ash from the waste-to-energy facility(s) to a landfill.

Figure VII-3 illustrates the basics of the transport needs for these alternates. Basically, from this figure, it can be seen that the counties must transport their waste to their respective area recycling/RDF facility and the subsequent RDF must then move to the one of the two potential waste-to-energy sites in Chattanooga. Discards from each of these recycling/RDF facilities must go to a landfill and the resulting ash from the combustion process must also be transported to a landfill facility. (It is assumed for this evaluation that the ash residue is transported to the City of Chattanooga's Summitt landfill for disposal.)

4.4 Transfer Stations

As mentioned in sections 3.2 and 4.3, this evaluation includes four (4) transfer stations to transfer the MSW from one location within an area to that same area's recycling/RDF facility for processing. These transfer station locations/descriptions are summarized as follows:

- 1) Marion County to transfer MSW from the Marion County landfill to Area 1's recycling/RDF facility at the Summitt Landfill in Hamilton County.
- 2) Bradley County to transfer MSW from the Bradley County landfill to Area 1's recycling/RDF facility at the Summitt Landfill in Hamilton County.
- 3) Hamilton County to transfer MSW from the Hamilton County (Harrison) landfill to Area 1's recycling/RDF facility at the Summitt Landfill in Hamilton County.

- 4) Grundy County to transfer MSW from the Grundy County landfill to Area 3's recycling/RDF facility at the Bledsoe County landfill.

Table VII-3 summarizes the quantities of MSW transferred, the estimated capital cost for the transfer station, the estimated annual operating costs and the distances/transportation costs associated with the transfers.

TABLE VII-3 : Transfer Station Summary

Station	Tons/Year	Capital Cost	Annual Operating Cost	Mileage Round Trip	Trips per Year	Cost/Mile	Total Mileage Cost
Marion	21,745	\$710,000	\$105,000	100	1360	\$1.82	\$247,520
Bradley	62,758	\$970,000	\$130,000	40	3923	\$1.82	\$285,594
Hamilton	52,594	\$800,000	\$110,000	50	3288	\$1.82	\$299,208
Grundy	5,714	\$370,000	\$50,000	90	358	\$1.82	\$58,640
		\$2,850,000	\$395,000				\$890,962

NOTE: The Hamilton County Harrison Station quantity is based on 11.4% of the total Hamilton County wastashed which is the same as the 1993 percentage.

(The transportation costs used in this analysis were developed by The University of Tennessee County Technical Assistance Service (CTAS). These costs/mile are based on 32,000 pounds/trip and include all capital and operating costs associated with tractor trailer hauling.)

4.5 RDF and Ash Transportation

Once the waste has been processed at one of these four facilities, the subsequent RDF must be transported to the potential waste-to-energy site(s) for combustion and subsequent energy generation. The following modes of transport were evaluated in order to arrive at the most cost effective method of transportation for each area and the region as a whole.

4.5.1 Roadway Transportation

Figure VII-1 shows that all of the ten (10) counties of the region are served by major interstates or highways. From this map, approximate distances were calculated in order to determine the roadway mileage from each of the four recycling/RDF facilities to either of the two potential waste-to-energy facility sites. Table VII-4 is the result of these mileage calculations.

TABLE VII-4 : Roadway Transportation Costs

Routing	Mileage Round Trip	RDF or Ash Tons/Yr	Trips per Year	Cost/Mile	Total Cost	Cost/Ton
Area 1 to WTE	50	328,604	20,538	\$1.82	\$1,868,958	\$5.69
Area 2 to WTE	120	30,214	1,889	\$1.82	\$412,558	\$13.65
Area 3 to WTE	100	9,747	610	\$1.82	\$111,020	\$11.39
Area 4 to WTE	80	11,117	695	\$1.82	\$101,192	\$9.10
WTE Ash to Area 1	50	39,107	2,445	\$1.82	\$222,495	\$5.69
Total		418,789			\$2,716,223	\$6.49

(The transportation costs used in this analysis were developed by The University of Tennessee County Technical Assistance Service (CTAS). These costs/mile/ton include all capital and operating costs associated with tractor trailer hauling.)

4.5.2 Waterway Transportation

As can be seen in viewing Figure VII-1, the ten county region does have access to waterway transportation by way of the Tennessee River. The river could serve as a transport method for Areas 2 and 4 if proper barge loading facilities were constructed for these areas and for unloading purposes in Hamilton County. Area 3 does not have access to the Tennessee River and although Area 1 does access the river, since Hamilton County is the host to the potential waste-to-energy sites, it would not be economically viable to have RDF transported by river for this area.

From Table VII-2, it can be calculated that Areas 2 and 4 generate approximately 52,000 tons per year of MSW. Recognizing that only a portion of the MSW actually becomes RDF, the two areas combined would generate less than 1,000 tons per week. Based on this quantity, it would not be economically viable to transport the RDF by waterway for these areas.

4.5.3 Railway Transportation

The ten county region is well served by railways. Referring back to Figure VII-1, it can be seen that railways serve every county within the region. In order to research the possibility of transfer of the waste by rail, the Norfolk Southern railway was contacted. Through discussions with Norfolk Southern, it was determined that even though every county is served by rail, the volume of RDF being transferred by the individual areas is not enough to make rail transportation economically viable.

4.5.4 Summary

Based on the review of the three transportation modes available to this region, (roadway, waterway and railway), along with the region's demographics, the economics dictate that roadway transportation is the most cost effective. This is primarily due to the fact that the majority of the waste shed is in close proximity to the two potential waste-to-energy sites. If this were not the case, the waterway or railway transport would probably be the most economical.

5.0 Recycling/RDF Facilities

5.1 Location and Quantity of Facilities

For an RDF/combustion alternative, solid waste disposal is an intense material handling process including the transportation of the waste from central collection points to the processing or disposal facility. As described earlier, the 10-county region was divided into four distinct processing/transportation areas in order to simplify the processing and transportation of the MSW and RDF. Each of these four areas would be served by its own recycling/RDF facility in order to separate recyclables from the waste stream and to transfer the remaining RDF to the waste-to-energy facility.

5.2 General Description of Facilities

Most all recycling programs require some type of central facility to receive, sort, store and ship the recyclables collected. The step beyond this scenario involves the separation of the recyclables from the waste stream at a central facility. These facilities are referred to as Materials Recovery Facility (MRF). These facilities are normally classified in two categories, a "clean" MRF or a "dirty" MRF. The "clean" MRF is an offspring of a source separation or curbside program. Under this classification, recyclables are collected in a "commingled" state; the recyclables are separated from the waste stream, but are not individually separated. These commingled recyclables are received at a "clean" MRF for further individual separation.

The second category is a "dirty" MRF. This central facility receives the municipal solid waste in an "as-collected" state. Then through the use of technology and/or manual labor, the recyclables are removed from the waste stream. Because a waste-to-energy facility is going to be using a portion of the wastestream as refuse-derived fuel (RDF), this is the type of facility which has been selected for this evaluation. Additional reasons for selecting this type of facility include, first, recovery rates of the recyclables in the waste stream are normally higher with this method. This is primarily due to the fact that there is close to a 100% participation rate; the facility receives all of the MSW produced in the given area. The facility is not relying on citizen participation. Secondly, even with a curbside or commingled recyclables approach, some type of central facility is still required. And finally, with a "dirty" MRF, the added cost of compartmentalized collection vehicles along with the associated operating expenses is avoided. The existing operation of collection vehicles is not disrupted.

5.2 Size of Facility(s)

The ten Tennessee counties involved in this study include: Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie. From the waste projections, the 1998 waste stream associated with these counties is shown in Table VII-5 below.

TABLE VII-5: Projected 1998 Regional Waste Generation

	County	Annual Waste Generation, Tons
1	Bledsoe	5,490
2	Bradley	62,758
3	Grundy	5,714
4	Hamilton	461,350
5	Marion	21,745
6	McMinn	41,365
7	Meigs	2,811
8	Polk	6,013
9	Rhea	18,467
10	Sequatchie	4,987
TOTAL		630,700

From this table, the total 1998 projected waste generated on an annual basis is 630,700 tons. Referencing Figure VII-2, the four transportation areas include the following counties: Area 1 - Hamilton, Marion and Bradley Counties, Area 2 - McMinn, Meigs, and Polk Counties, Area 3 - Bledsoe, Grundy and Sequatchie Counties and Area 4 - Rhea County. Based on this grouping, the quantity of waste generated for each of the four areas is shown in Table VII-6 below:

TABLE VII - 6: Regional Division into Transportation Areas

AREA 1		AREA 2		AREA 3		AREA 4	
Hamilton	461,350	McMinn	41,365	Bledsoe	5,490	Rhea	18,467
Marion	21,745	Meigs	2,811	Grundy	5,714		
Bradley	62,758	Polk	6,013	Sequatchie	4,987		
TOTAL	545,853	TOTAL	50,189	TOTAL	16,191	TOTAL	18,467

Based on a 5 day/week operating schedule, these 4 areas would have recycling/RDF facilities sized at the following capacities:

Area 1 -	2099 TPD
Area 2 -	193 TPD
Area 3 -	62 TPD
Area 4 -	71 TPD

5.3 Conceptual Design

There is a wide array of different methods to remove the recyclable material from the waste stream. These methods vary from very low tech, labor intensive "hand picking" approach to the automated/mechanized methods, some of which are extremely high tech. This report will look at 1) low tech, labor intensive, component systems in which pricing for individual components was obtained, a conceptual design was done and construction/installation costs were estimated and 2) automated vendor systems in which pricing was obtained for the system and construction/installation costs were added.

5.3.1 Low Tech Systems

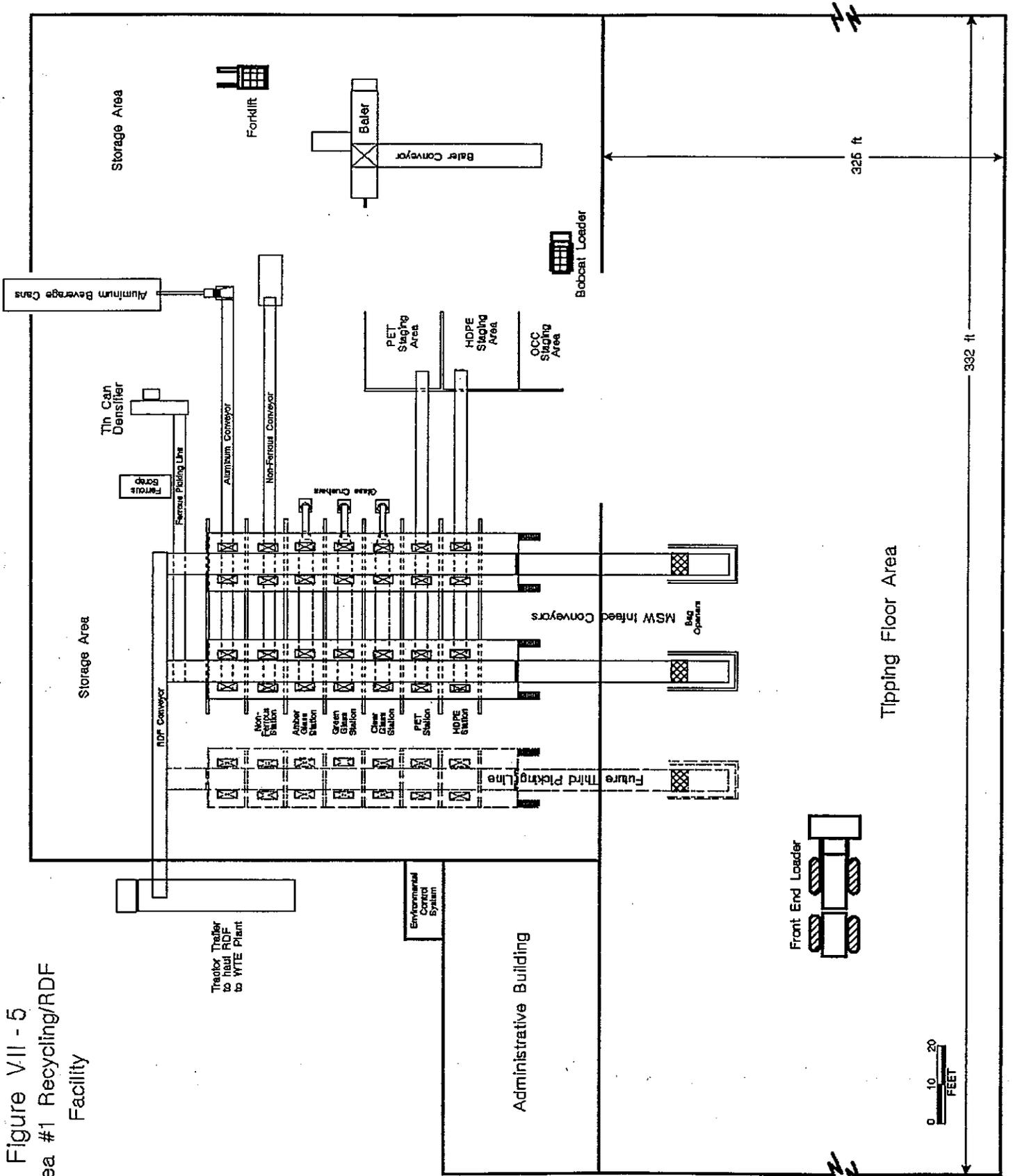
Figures VII-5 through VII-8 show conceptual floor plans for low tech facilities corresponding to the four sizes discussed in Section 5.2. A description of these facilities is as follows:

5.3.1.1 Area 1 Recycling/RDF Facility

Referring to Figure VII-5, the collection trucks enter the tipping floor area and dump the MSW. The MSW is then moved with a front end loader either to a storage area of the tipping floor to await processing, or to one of the two infeed conveyors. While the MSW is on the tipping floor and when the MSW is loaded onto the infeed conveyor, any non-contaminated corrugated cardboard and paper products are pulled out of the waste stream to be baled and marketed. Once the MSW is on one of the infeed conveyors, it is conveyed through a bag opening device. This piece of machinery opens the plastic "garbage" bags so that the recyclables are more easily retrieved.

Once the bags have been opened, the MSW is conveyed up an inclined conveyor to an elevated picking conveyor. The picking conveyor consists of individual stations in which workers will sort through the MSW and remove whatever particular item that their station is responsible for removing. The first picking station is for the removal of HDPE plastic; or in its most common form, plastic milk jugs. The picker will remove the HDPE from the conveyor and drop it into a chute. The HDPE will fall through the chute to a conveyor below. This conveyor transports the HDPE to a "staging area" to await baling. The HDPE will collect in this location until there is enough material to make a full bale. Once there is enough HDPE to make a bale, a Bobcat loader will move the HDPE from this area onto

Figure VII - 5
 Area #1 Recycling/RDF
 Facility



a recessed conveyor which will feed the HDPE into a baler. Once a bale is complete and banded by the baling machine, a forklift will pick the bale up and put it in a storage area until there is enough bales for a full tractor trailer load to be transported to an end-user.

The second picking station removes the PET plastic in the same manner and procedure in which the HDPE is removed. PET in its most common form is soft drink bottles.

The next 3 picking stations remove glass containers. The first station removes the clear glass containers, the second removes the green glass and the third station removes the amber or brown glass. The glass containers are removed from the conveyor and deposited in the chutes at the picking station in the same manner in which the HDPE and PET are removed. However, these containers pass through the chute to a small conveyor belt (one per picking station - clear, green & amber). This belt conveys the containers to a glass crusher which crushes the containers and deposits the crushed glass in a gaylord box. Once full, this box is then picked up by the forklift and moved to a storage area, and an empty gaylord is put in its place. Once there are enough gaylord boxes full of glass, they will be loaded onto a truck to be transported to an end-user.

The next picking station will be used for nonferrous metals such as copper, brass, scrap aluminum (not beverage cans), etc. These items are simply removed from the picking conveyor and deposited in the chutes at the picking station. The nonferrous materials will fall onto a conveyor which carries the material to a roll-off container. Once full, this roll-off container is transported by a truck to a local scrap yard. If, after operations begin, it is found that there is a large amount of one particular type of nonferrous material (such as copper), that item could be segregated to be marketed separately at a higher price.

The next station is for removal of aluminum beverage cans. Once again the cans are removed from the picking conveyor and placed into the chute at this station. The aluminum cans then fall onto a small conveyor belt which transports the cans to a can crusher and blower. This device crushes the cans (in order to reduce the volume) which are then blown into a 40 foot trailer. The can crusher, blower and trailer is provided by the aluminum end-user. When the trailer is full, the end-user, or purchaser, removes the trailer and replaces it with an empty one.

After passing through this series of picking stations, the remaining MSW passes over a magnetic head pulley. This pulley removes the ferrous materials and transfers it to a separate ferrous picking conveyor. On this picking conveyor, all ferrous material except the "tin" cans are removed from the conveyor and stored in dumping carts/roll-off containers. The remaining "tin" cans are conveyed into a can densifier. The densifier compacts the cans into small bales or biscuits which then are banded together to form a large bale. These bales are then stored and shipped to an end-user.

The remaining MSW from the main picking conveyor falls to another conveying belt. At this point the MSW is referred to as Refuse-Derived Fuel or RDF. This material is conveyed into a tractor trailer truck to be transported to the waste-to-energy plant.

All of the arriving collection trucks and the departing RDF and recyclables trucks are

weighed on a truck scale near the entrance to the facility. This enables the plant management to keep records for billing purposes and waste stream management. Also, on the facility's grounds, an area is included to receive yard and wood waste to be mulched. This mulch could then be sold at a minimal cost to be used by area residents or nurseries.

5.3.1.2 Area 2 Recycling/RDF Facility

Referring to Figure VII-6, the recycling/RDF facility for Area 2 operates identically in concept to that of Area 1. The area 2 facility however, is much smaller with regard to throughput capacity. Other differences include: 1) the Area 2 facility only has one (1) picking line instead of two, and 2) the Area 2 facility has fewer pickers than Area 1.

5.3.1.3 Area 3 Recycling/RDF Facility

The recycling/RDF facility for Area 3 is much smaller than the facilities for Areas 1 and 2. Referring to Figure VII-7, the collection trucks enter the tipping floor area and dump the MSW. The MSW is then moved with a bobcat loader either to a storage area of the tipping floor to await processing, or to one of the infeed conveyors. The infeed conveyor is above floor level and has a small hopper in which the MSW is dumped into with the use of the bobcat loader. While the MSW is on the tipping floor and when the MSW is loaded into the feed hopper, any non-contaminated corrugated cardboard and paper products are pulled out of the waste stream to be baled and marketed. Once the MSW is on one of the infeed conveyors, it is conveyed up a slight slope to be deposited onto a flat picking conveyor. Before the MSW drops from this conveyor onto the picking conveyor, it passes over a magnetic pulley. The ferrous items, such as tin cans, etc. are pulled out of the waste stream with this magnet and then "scraped" off of the conveyor belt and deposited into a storage bin.

The picking conveyor consists of individual stations in which workers will sort through the MSW and extract the particular item that their station is responsible for removing. The first picking station is for the removal of HDPE plastic; or in its most common form, plastic milk jugs. The picker will remove the HDPE from the conveyor and drop it into a self dumping storage bin. Once this bin is full, it will be replaced with an empty one and the collected HDPE will be dumped into a "holding" area. Once there is enough HDPE to make a bale, a Bobcat loader will move the HDPE from this area onto a conveyor which will feed the HDPE into a baler. Once a bale is complete and banded, a forklift will pick the bale up and put it in a storage area until there is enough bales for a full tractor trailer load to be transported to a market.

The next picking station is for PET plastic and it is handled in the same manner as the HDPE.

The next series of picking stations are for the glasses (clear, green and amber) and the non-ferrous and aluminum items. The glasses are hand sorted by color (clear, green and amber) and deposited into self dumping storage bins. When these bins are full, they are dumped into one of three glass crushers. This device crushes the glass and drops it into a gaylord box placed under the outlet of the machine. Once these gaylord boxes are full, they are

Figure VII - 6
 Area #2 Recycling/RDF
 Facility

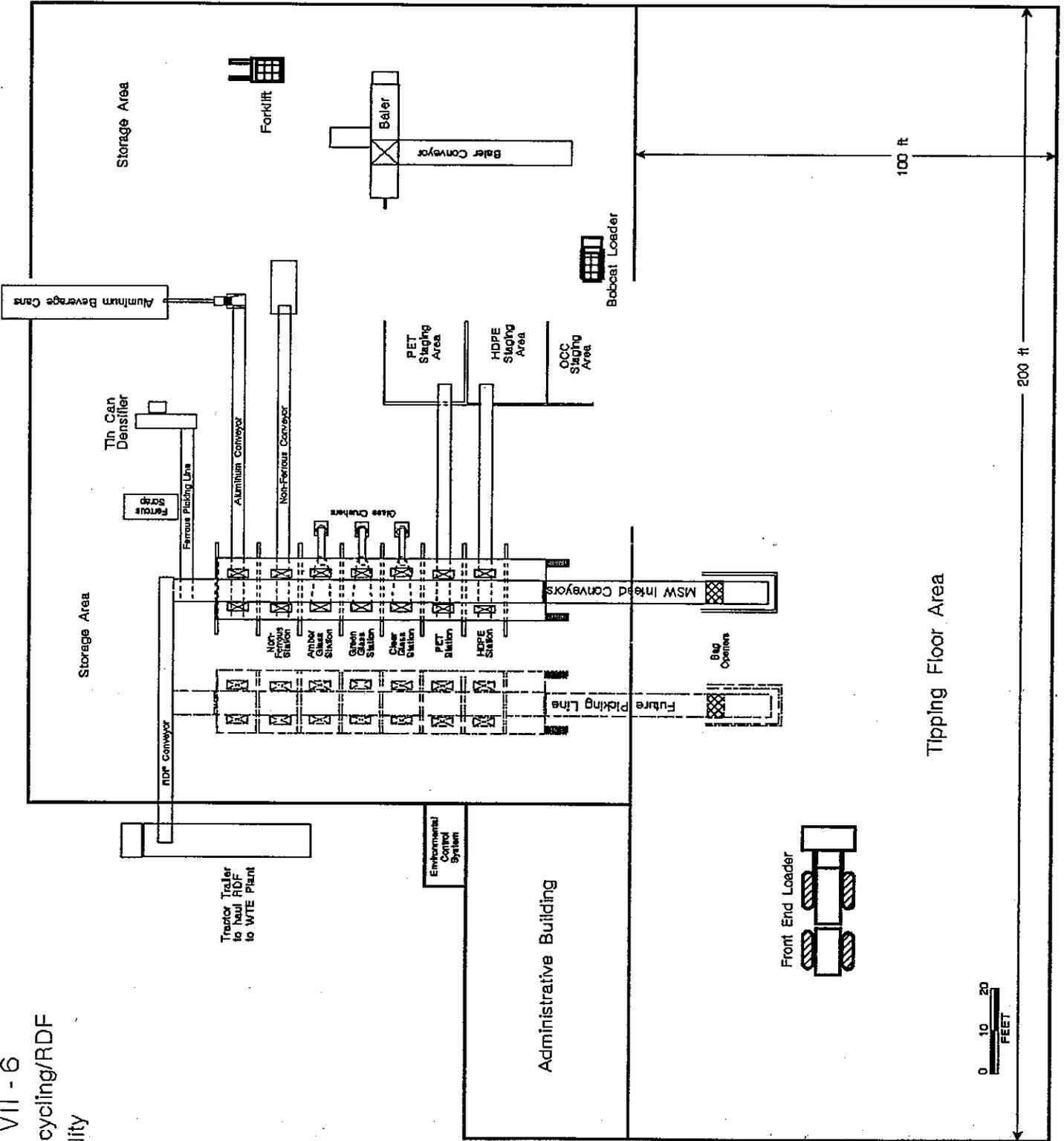
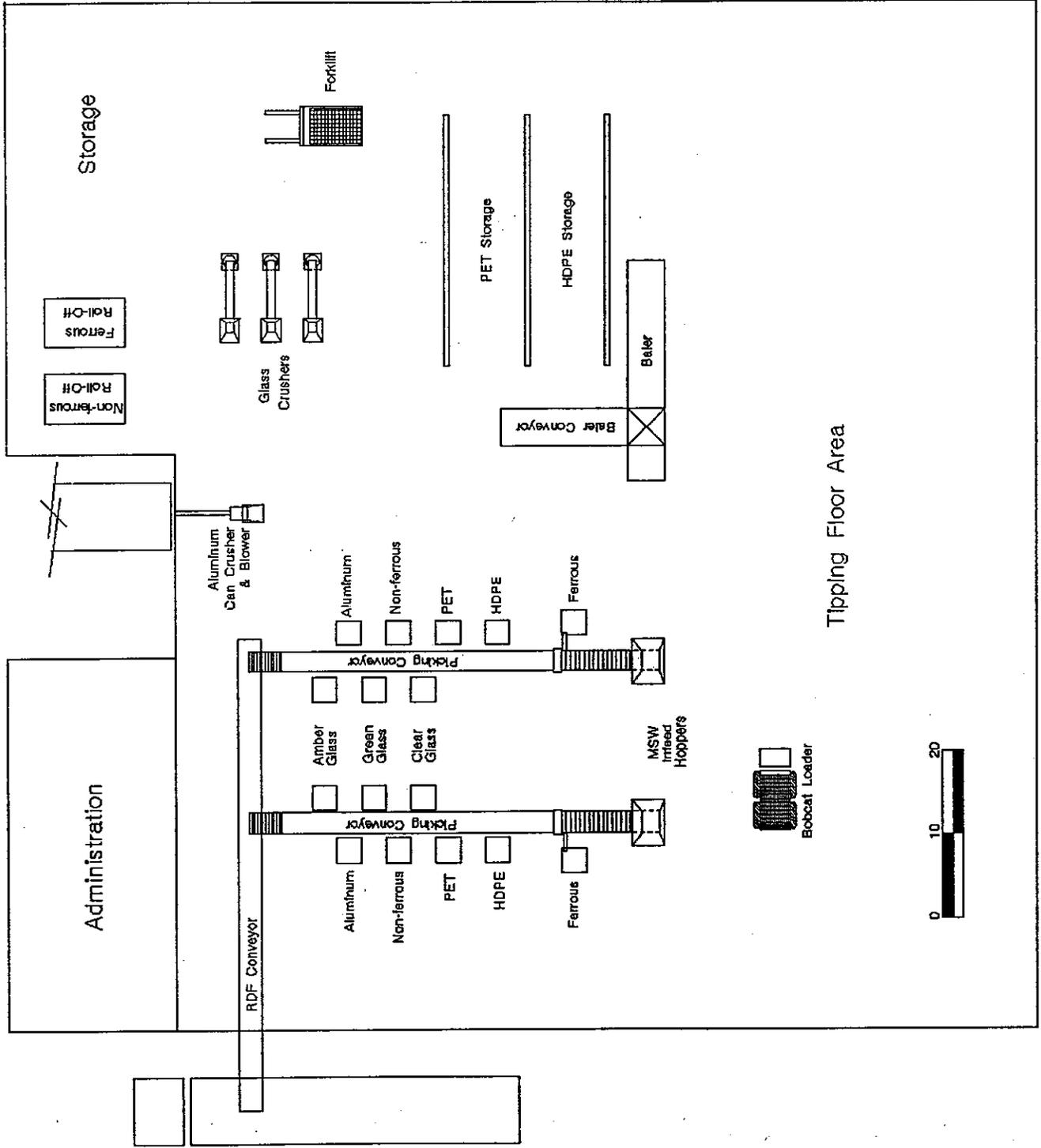


Figure VII - 7
 Area 3 Recycling/RDF Facility



replaced and put into a storage area until there is enough glass to make a full truck load to be transported to market.

The non-ferrous metals are stored in a roll-off container until full and the aluminum cans are dumped into a can crusher and blower which flattens the cans and blows them into the back of a 40 foot trailer. The crusher/blower and trailer are provided by the aluminum end-user. Once the trailer is full, the end-user will replace it with an empty.

The remaining waste, which is now in the form of a refuse-derived fuel, is conveyed into an awaiting tractor trailer truck to be transported to the waste-to-energy facility. All incoming MSW loads and outgoing recyclable and RDF loads are weighed on a truck scale in order to keep tracking of billings and revenues.

5.3.1.4 Area 4 Recycling/RDF Facility

The Area 4 recycling/RDF facility (Figure VII-8), is identical to the Area 3 facility. The only difference is that the Area 4 facility has a few less pickers.

5.3.2 Automated/Mechanized Systems

These systems typically consist of several pieces of equipment which size and classify the different components of the MSW stream and for the most part, automatically segregates the different recyclables. They are some very elaborate and sophisticated systems, however, it appears all of the systems offered still require a certain amount of manual labor in the separation process.

5.4 Capital Cost Estimate

There are several different approaches which can be used in the development of cost estimates. The two extremes are 1) the conventional design/bid/construct approach and 2) the full service/turn-key approach. The cost estimates contained herein are based on the conventional public works, design/bid/construct, procurement approach. Turn-Key/Full Service budgetary pricing was solicited from ten (10) automated/mechanized system vendors, however, only three (3) responded. One major reason for this was that the majority of these vendors only supply systems for a "clean" MRF and subsequently, their systems were not designed for "as collected" MSW. In addition to these three responses, budgetary pricing was solicited from component vendors in order to estimate costs for a low tech "component system". The following section summarizes the results of the budgetary pricing/design.

5.4.1 Low Tech Component System

Capital costs have been developed for the low tech component systems described in Section 5.3 and shown in Figures VII-5 through VII-8. A breakdown of these cost estimates are given in Tables VII-7 through VII-10 for areas 1, 2, 3 and 4 respectively.

Figure VII - 8
Area 4 Recycling/RDF Facility

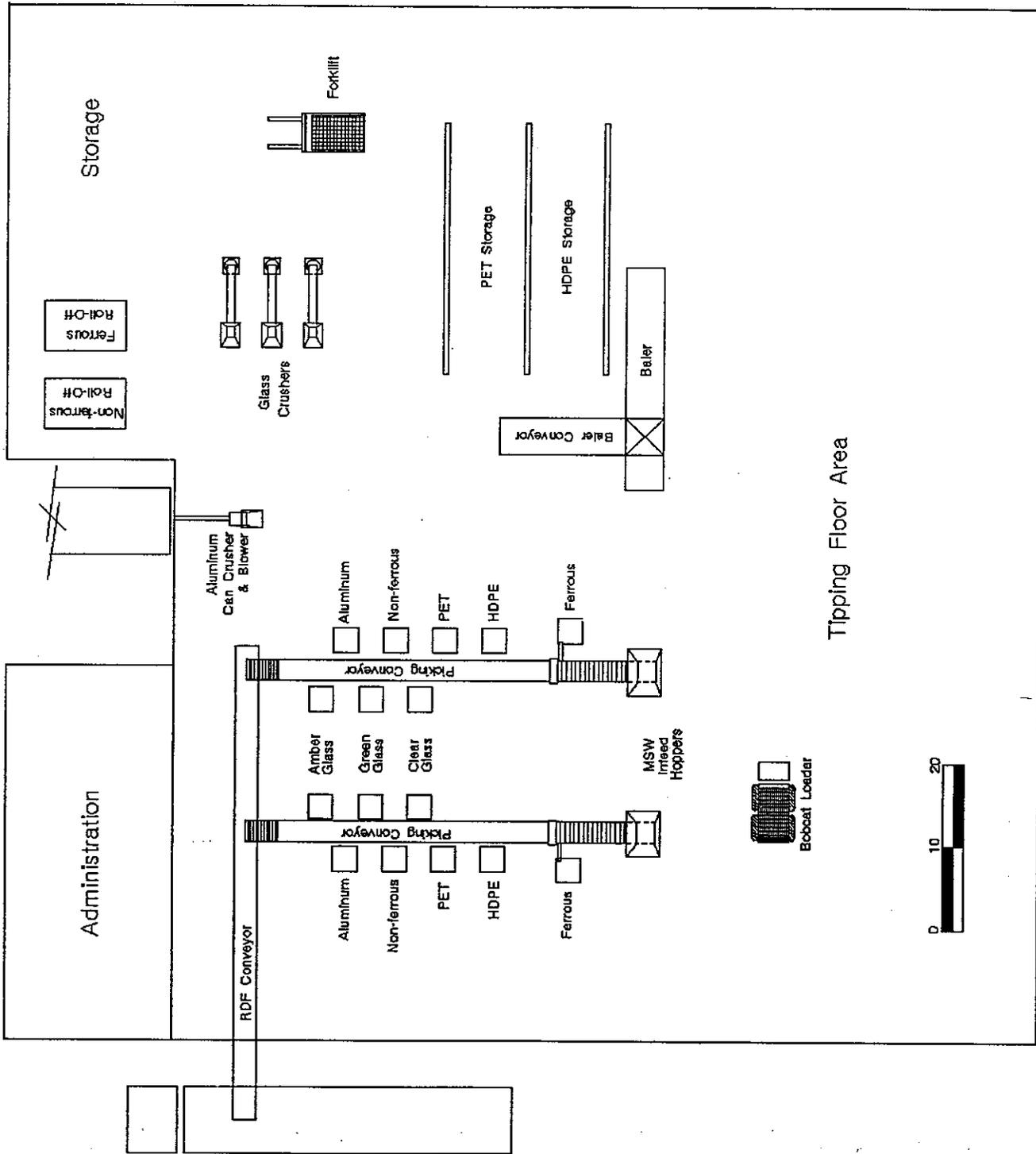


TABLE VII - 7
 AREA 1 Recycling/RDF Facility
 Component System
 Capital Cost Estimate

<u>Major Equipment</u>	<u>QTY</u>	<u>Unit Price</u>	<u>Total Price</u>
1. Front End Loader	1	\$120,000	\$120,000
2. Bobcat Loader	1	\$20,000	\$20,000
3. Forklift	1	\$20,000	\$20,000
3. Bag Opener	2	\$95,000	\$190,000
4. Infeed/Incline Conveyor	2	\$67,000	\$134,000
6. Picking Conveyor w/Mezzanine	2	\$128,000	\$256,000
8. Magnetic Separator	2	incl.	\$0
9. HDPE Conveyor	1	\$32,000	\$32,000
10. PET Conveyor	1	\$32,000	\$32,000
11. Glass Conveyor	3	\$8,000	\$24,000
12. Non-ferrous Conveyor	1	\$32,000	\$32,000
13. Aluminum Conveyor	1	\$32,000	\$32,000
14. Ferrous Conveyor	1	\$32,000	\$32,000
15. RDF Conveyor	1	\$32,000	\$32,000
16. Baler	1	\$150,000	\$150,000
17. Baler Conveyor	1	\$45,000	\$45,000
16. Glass Crusher	3	\$4,500	\$13,500
17. Aluminum Can Crusher & Blower	1	n.a.	\$0
19. Tin Can Densifier	1	\$40,000	\$40,000
20. Non-ferrous 13 yd roll-off container	2	\$3,200	\$6,400
21. Ferrous Scrap 13 yd roll-off container	2	\$3,200	\$6,400
22. Mulcher/Shredder	1	\$150,000	\$150,000
23. Truck Scales w/ Mgmnt System & Hook-Up	1	\$40,000	\$40,000
24. Truck Scale Pit	1	\$17,500	\$17,500
25. Environmental Control System & Baghouse	1	\$150,000	\$150,000
26. Instrumentation	1	\$50,000	\$50,000
27. Electrical Switchgear	1	\$35,000	\$35,000
28. Pick-Up Truck	1	\$20,000	\$20,000
29. RDF Tractor Trailer	0	incl. w/Trans.	\$0
Sub-Total Major Equipmnet incl. Freight			\$1,679,800

<u>Installation & Construction</u>	<u>Unit</u>	<u>Amount</u>	<u>Unit Cost</u>	<u>Total Price</u>
Setting Equipment	lot	1	\$57,600	\$57,600
Mechanical Work	lot	1	\$96,000	\$96,000
Electrical Work	lot	1	\$26,000	\$26,000
Land Acquisition (to be located @ existing landfill)			n.a.	\$0
Site Prep., Excav., Grading, etc.	lot	1	\$150,000	\$150,000
Fencing	lf	2,200	\$12.00	\$26,400
Utilities	lot	1	\$60,000	\$60,000
Asphalt Paving	sy	4,000	\$11.50	\$46,000
Concrete Paving	sy	2,000	\$22.50	\$45,000
Pre-Fab Building with Footers	sf	142,500	\$10.00	\$1,425,000
6" Concrete Slab	sf	142,500	\$4.50	\$641,250
Lighting	sf	139,500	\$4.00	\$558,000
HVAC (standard)	sf	139,500	\$3.00	\$418,500
Plumbing & Bath	fixtures	14	\$4,000	\$56,000
Sprinkler System	sf	142,500	\$2.00	\$285,000
Equipment Foundations	sf	3,900	\$18.00	\$70,200
Office Area	sf	3,000	\$25.00	<u>\$75,000</u>
Sub-Total Installation & Construction				\$4,035,950
Sub-Total, Major Equipment, Installation & Construction				\$5,715,750
Engineering & Construction Management			17.5%	\$1,000,256
Contingency			10.0%	<u>\$571,575</u>
				\$7,287,581

TABLE VII - 8
 AREA 2 Recycling/RDF Facility
 Component System
 Capital Cost Estimate

<u>Major Equipment</u>	<u>QTY</u>	<u>Unit Price</u>	<u>Total Price</u>
1. Front End Loader	1	\$120,000	\$120,000
2. Bobcat Loader	1	\$20,000	\$20,000
3. Forklift	1	\$20,000	\$20,000
3. Bag Opener	1	\$95,000	\$95,000
4. Infeed/Incline Conveyor	1	\$55,000	\$55,000
6. Picking Conveyor w/Mezzanine	1	\$105,000	\$105,000
8. Magnetic Separator	1	incl.	\$0
9. HDPE Conveyor	1	\$22,400	\$22,400
10. PET Conveyor	1	\$22,400	\$22,400
11. Glass Conveyor	3	\$8,000	\$24,000
12. Non-ferrous Conveyor	1	\$22,400	\$22,400
13. Aluminum Conveyor	1	\$22,400	\$22,400
14. Ferrous Conveyor	1	\$22,400	\$22,400
15. RDF Conveyor	1	\$22,400	\$22,400
16. Baler	1	\$150,000	\$150,000
17. Baler Conveyor	1	\$45,000	\$45,000
16. Glass Crusher	3	\$4,500	\$13,500
17. Aluminum Can Crusher & Blower	1	n.a.	\$0
19. Tin Can Densifier	1	\$40,000	\$40,000
20. Non-ferrous 13 yd roll-off container	2	\$3,200	\$6,400
21. Ferrous Scrap 13 yd roll-off container	2	\$3,200	\$6,400
22. Mulcher/Shredder	1	\$150,000	\$150,000
23. Truck Scales w/ Mgmnt System & Hook-Up	1	\$40,000	\$40,000
24. Truck Scale Pit	1	\$17,500	\$17,500
25. Environmental Control System & Baghouse	1	\$75,000	\$75,000
26. Instrumentation	1	\$25,000	\$25,000
27. Electrical Switchgear	1	\$25,000	\$25,000
28. Pick-Up Truck	1	\$20,000	\$20,000
29. RDF Tractor Trailer	0	incl. w/Trans.	\$0
Sub-Total Major Equipmnet incl. Freight			\$1,187,200

<u>Installation & Construction</u>	<u>Unit</u>	<u>Amount</u>	<u>Unit Cost</u>	<u>Total Price</u>
Setting Equipment	lot	1	\$38,400	\$38,400
Mechanical Work	lot	1	\$76,800	\$76,800
Electrical Work	lot	1	\$19,000	\$19,000
Land Acquisition (to be located @ existing landfill)			n.a.	\$0
Site Prep., Excav., Grading, etc.	lot	1	\$75,000	\$75,000
Fencing	lf	1,800	\$12.00	\$21,600
Utilities	lot	1	\$40,000	\$40,000
Asphalt Paving	sy	3,000	\$11.50	\$34,500
Concrete Paving	sy	1,000	\$22.50	\$22,500
Pre-Fab Building with Footers	sf	52,200	\$10.00	\$522,000
6" Concrete Slab	sf	52,200	\$4.50	\$234,900
Lighting	sf	49,200	\$4.00	\$196,800
HVAC (standard)	sf	49,200	\$3.00	\$147,600
Plumbing & Bath	fixtures	10	\$4,000	\$40,000
Sprinkler System	sf	52,200	\$2.00	\$104,400
Equipment Foundations	sf	1,850	\$18.00	\$33,300
Office Area	sf	3,000	\$25.00	<u>\$75,000</u>
Sub-Total Installation & Construction				\$1,681,800
Sub-Total, Major Equipment, Installation & Construction				\$2,869,000
Engineering & Construction Management			17.5%	\$502,075
Contingency			10.0%	<u>\$286,900</u>
				\$3,657,975

TABLE VII - 9
 AREA 3 Recycling/RDF Facility
 Component System
 Capital Cost Estimate

<u>Major Equipment</u>	<u>QTY</u>	<u>Unit Price</u>	<u>Total Price</u>
1. Front End Loader	0	\$120,000	\$0
2. Bobcat Loader	1	\$20,000	\$20,000
3. Forklift	1	\$20,000	\$20,000
3. Bag Opener	0	\$95,000	\$0
4. Infeed/Incline Conveyor	2	\$23,500	\$47,000
6. Picking Conveyor	2	incl.	\$0
8. Magnetic Separator	2	incl.	\$0
9. HDPE Conveyor	0	\$22,400	\$0
10. PET Conveyor	0	\$22,400	\$0
11. Glass Conveyor	0	\$8,000	\$0
12. Non-ferrous Conveyor	0	\$22,400	\$0
13. Aluminum Conveyor	0	\$22,400	\$0
14. Ferrous Conveyor	0	\$22,400	\$0
15. RDF Conveyor	1	\$22,400	\$22,400
16. Baler	1	\$38,500	\$38,500
17. Baler Conveyor	1	\$15,000	\$15,000
16. Glass Crusher	3	\$4,500	\$13,500
17. Aluminum Can Crusher & Blower	1	n.a.	\$0
19. Tin Can Densifier	0	\$40,000	\$0
20. Non-ferrous 13 yd roll-off container	2	\$3,200	\$6,400
21. Ferrous Scrap 13 yd roll-off container	2	\$3,200	\$6,400
22. 3 Cu. Yd. Self-Dumping Containers	32	\$625	\$20,000
23. Mulcher/Shredder	1	\$75,000	\$75,000
24. Truck Scales w/ Mgmnt System & Hook-Up	1	\$40,000	\$40,000
25. Truck Scale Pit	1	\$17,500	\$17,500
26. Environmental Control System & Baghouse	1	\$40,000	\$40,000
27. Instrumentation	1	\$10,000	\$10,000
28. Electrical Switchgear	1	\$10,000	\$10,000
29. Pick-Up Truck	1	\$20,000	\$20,000
30. RDF Tractor Trailer	0	incl. w/Trans.	\$0
Sub-Total Major Equipmnet incl. Freight			\$421,700

<u>Installation & Construction</u>	<u>Unit</u>	<u>Amount</u>	<u>Unit Cost</u>	<u>Total Price</u>
Setting Equipment	lot	1	\$12,800	\$12,800
Mechanical Work	lot	1	\$25,600	\$25,600
Electrical Work	lot	1	\$8,000	\$8,000
Land Acquisition (to be located @ existing landfill)			n.a.	\$0
Site Prep., Excav., Grading, etc.	lot	1	\$25,000	\$25,000
Fencing	lf	1,350	\$12.00	\$16,200
Utilities	lot	1	\$20,000	\$20,000
Asphalt Paving	sy	1,500	\$11.50	\$17,250
Concrete Paving	sy	750	\$22.50	\$16,875
Pre-Fab Building with Footers	sf	15,200	\$10.00	\$152,000
6" Concrete Slab	sf	15,200	\$4.50	\$68,400
Lighting	sf	14,300	\$4.00	\$57,200
HVAC (standard)	sf	14,300	\$3.00	\$42,900
Plumbing & Bath	fixtures	6	\$4,000	\$24,000
Sprinkler System	sf	15,200	\$2.00	\$30,400
Equipment Foundations	sf	750	\$18.00	\$13,500
Office Area	sf	900	\$25.00	<u>\$22,500</u>
Sub-Total Installation & Construction				\$552,625
Sub-Total, Major Equipment, Installation & Construction				\$974,325
Engineering & Construction Management			17.5%	\$170,507
Contingency			10.0%	<u>\$97,433</u>
				\$1,242,264

TABLE VII - 10
 AREA 4 Recycling/RDF Facility
 Component System
 Capital Cost Estimate

<u>Major Equipment</u>	<u>QTY</u>	<u>Unit Price</u>	<u>Total Price</u>
1. Front End Loader	0	\$120,000	\$0
2. Bobcat Loader	1	\$20,000	\$20,000
3. Forklift	1	\$20,000	\$20,000
3. Bag Opener	0	\$95,000	\$0
4. Infeed/Incline Conveyor	2	\$23,500	\$47,000
6. Picking Conveyor	2	incl.	\$0
8. Magnetic Separator	2	incl.	\$0
9. HDPE Conveyor	0	\$22,400	\$0
10. PET Conveyor	0	\$22,400	\$0
11. Glass Conveyor	0	\$8,000	\$0
12. Non-ferrous Conveyor	0	\$22,400	\$0
13. Aluminum Conveyor	0	\$22,400	\$0
14. Ferrous Conveyor	0	\$22,400	\$0
15. RDF Conveyor	1	\$22,400	\$22,400
16. Baler	1	\$38,500	\$38,500
17. Baler Conveyor	1	\$15,000	\$15,000
16. Glass Crusher	3	\$4,500	\$13,500
17. Aluminum Can Crusher & Blower	1	n.a.	\$0
19. Tin Can Densifier	0	\$40,000	\$0
20. Non-ferrous 13 yd roll-off container	2	\$3,200	\$6,400
21. Ferrous Scrap 13 yd roll-off container	2	\$3,200	\$6,400
22. 3 Cu. Yd. Self Dumping Containers	32	\$625	\$20,000
23. Mulcher/Shredder	1	\$75,000	\$75,000
24. Truck Scales w/ Mgmt System & Hook-Up	1	\$40,000	\$40,000
25. Truck Scale Pit	1	\$17,500	\$17,500
26. Environmental Control System & Baghouse	1	\$40,000	\$40,000
27. Instrumentation	1	\$10,000	\$10,000
28. Electrical Switchgear	1	\$10,000	\$10,000
29. Pick-Up Truck	1	\$20,000	\$20,000
30. RDF Tractor Trailer	0	incl. w/Trans.	\$0
Sub-Total Major Equipmnet incl. Freight			\$421,700

<u>Installation & Construction</u>	<u>Unit</u>	<u>Amount</u>	<u>Unit Cost</u>	<u>Total Price</u>
Setting Equipment	lot	1	\$12,800	\$12,800
Mechanical Work	lot	1	\$25,600	\$25,600
Electrical Work	lot	1	\$8,000	\$8,000
Land Acquisition (to be located @ existing landfill)			n.a.	\$0
Site Prep., Excav., Grading, etc.	lot	1	\$25,000	\$25,000
Fencing	lf	1,350	\$12.00	\$16,200
Utilities	lot	1	\$20,000	\$20,000
Asphalt Paving	sy	1,500	\$11.50	\$17,250
Concrete Paving	sy	750	\$22.50	\$16,875
Pre-Fab Building with Footers	sf	15,200	\$10.00	\$152,000
6" Concrete Slab	sf	15,200	\$4.50	\$68,400
Lighting	sf	14,300	\$4.00	\$57,200
HVAC (standard)	sf	14,300	\$3.00	\$42,900
Plumbing & Bath	fixtures	6	\$4,000	\$24,000
Sprinkler System	sf	15,200	\$2.00	\$30,400
Equipment Foundations	sf	750	\$18.00	\$13,500
Office Area	sf	900	\$25.00	<u>\$22,500</u>
Sub-Total Installation & Construction				\$552,625
Sub-Total, Major Equipment, Installation & Construction				\$974,325
Engineering & Construction Management			17.5%	\$170,507
Contingency			10.0%	<u>\$97,433</u>
				\$1,242,264

TABLE VII - 11
Vendor System
AREA 1 Recycling/RDF Facility
Capital Cost Estimate

	<u>Unit</u>	<u>Unit Cost</u>	<u>Vendor A</u>	<u>Vendor B</u>	<u>Vendor C</u>	<u>Component System</u>
Major Equipment			\$22,000,000	\$9,750,000	\$10,000,000	\$5,715,750
ADDITIONS:						
<u>Major Equipment</u>						
1. Front End Loader	1	\$120,000	\$120,000	\$120,000	\$120,000	incl.
2. Bobcat Loader	1	\$20,000	\$20,000	\$20,000	\$20,000	incl.
3. Forklift	1	\$20,000	\$20,000	\$20,000	\$20,000	incl.
4. 13 yd Roll-Off Containers	2	\$3,200	\$6,400	\$6,400	\$6,400	incl.
5. Mulcher/Shredder	1	\$150,000	\$150,000	\$150,000	\$150,000	incl.
6. Truck Scales w/ Mgmt System & Hook-Up	1	\$40,000	\$40,000	\$40,000	\$40,000	incl.
7. Truck Scale Pit	1	\$17,500	\$17,500	\$17,500	\$17,500	incl.
8. Environmental Control System & Baghouse	1	\$150,000	\$150,000	\$150,000	\$150,000	incl.
9. Electrical Switchgear	1	\$35,000	\$35,000	\$35,000	\$35,000	incl.
10. Pick-Up Truck	1	\$20,000	\$20,000	\$20,000	\$20,000	incl.
11. RDF Tractor Trailer	0	\$120,000	<u>incl. w/Trans.</u>	<u>incl. w/Trans.</u>	<u>incl. w/Trans.</u>	<u>incl.</u>
Sub-Total Major Equipmnet incl. Freight			\$22,578,900	\$10,328,900	\$10,578,900	\$5,715,750
<u>Installation & Construction</u>						
Setting Equipment	1	\$57,600	\$57,600	\$57,600	\$2,500,000	incl.
Mechanical Work	1	\$96,000	\$96,000	\$96,000	\$96,000	incl.
Electrical Work	1	\$26,000	\$26,000	\$26,000	\$26,000	incl.
Land Acquisition (to be located @ existing landfill)		n.a.	\$0	\$0	\$0	\$0
Site Prep., Excav., Grading, etc.	1	\$150,000	\$150,000	\$150,000	\$150,000	incl.
Fencing	2,200	\$12.00	\$26,400	\$26,400	\$26,400	incl.
Utilities	1	\$40,000	\$40,000	\$40,000	\$40,000	incl.
Asphalt Paving	4,000	\$11.50	\$46,000	\$46,000	\$46,000	incl.
Concrete Paving	2,000	\$22.50	\$45,000	\$45,000	\$45,000	incl.
Pre-Fab Building with Footers		\$10.00	\$2,100,000	\$1,150,000	\$1,100,000	incl.
6" Concrete Slab		\$4.50	\$945,000	\$517,500	\$495,000	incl.
Lighting		\$4.00	\$840,000	\$460,000	\$440,000	incl.
HVAC (standard)		\$3.00	\$630,000	\$345,000	\$330,000	incl.
Plumbing & Bath	14	\$4,000	\$56,000	\$56,000	\$56,000	incl.
Sprinkler System		\$2.00	\$420,000	\$230,000	\$220,000	incl.
Equipment Foundations	3,900	\$18.00	\$70,200	\$70,200	\$70,200	incl.
Office Area	3,000	\$25.00	<u>\$75,000</u>	<u>\$75,000</u>	<u>\$75,000</u>	<u>incl.</u>
Sub-Total Installation & Construction			\$5,623,200	\$3,390,700	\$5,715,600	\$0
Sub-Total, Major Equipment, Installation & Construction			\$28,202,100	\$13,719,600	\$16,294,500	\$5,715,750
Engineering & Construction Management		17.5%	\$4,935,368	\$2,400,930	\$2,851,538	\$1,000,256
Contingency		10.0%	<u>\$2,820,210</u>	<u>\$1,371,960</u>	<u>\$1,629,450</u>	<u>\$571,575</u>
TOTAL			\$35,957,678	\$17,492,490	\$20,775,488	\$7,287,581

TABLE VII - 12
Vendor System
AREA 2 Recycling/RDF Facility
Capital Cost Estimate

	<u>Unit</u>	<u>Unit Cost</u>	<u>Vendor A</u>	<u>Vendor B</u>	<u>Vendor C</u>	<u>Component System</u>
Major Equipment			\$3,175,000	\$4,450,000	\$1,125,000	\$2,869,000
ADDITIONS:						
<u>Major Equipment</u>						
1. Front End Loader	1	\$120,000	\$120,000	\$120,000	\$120,000	incl.
2. Bobcat Loader	1	\$20,000	\$20,000	\$20,000	\$20,000	incl.
3. Forklift	1	\$20,000	\$20,000	\$20,000	\$20,000	incl.
4. 13 yd Roll-Off Containers	2	\$3,200	\$6,400	\$6,400	\$6,400	incl.
5. Mulcher/Shredder	1	\$150,000	\$150,000	\$150,000	\$150,000	incl.
6. Truck Scales w/ Mgmt System & Hook-Up	1	\$40,000	\$40,000	\$40,000	\$40,000	incl.
7. Truck Scale Pit	1	\$17,500	\$17,500	\$17,500	\$17,500	incl.
8. Environmental Control System & Baghouse	1	\$75,000	\$75,000	\$75,000	\$75,000	incl.
9. Electrical Switchgear	1	\$25,000	\$25,000	\$25,000	\$25,000	incl.
10. Pick-Up Truck	1	\$20,000	\$20,000	\$20,000	\$20,000	incl.
11. RDF Tractor Trailer	0	\$120,000	<u>incl. w/Trans.</u>	<u>incl. w/Trans.</u>	<u>incl. w/Trans.</u>	<u>incl.</u>
Sub-Total Major Equipmnet incl. Freight			\$3,668,900	\$4,943,900	\$1,618,900	\$2,869,000
<u>Installation & Construction</u>						
Setting Equipment	1	\$38,400	\$38,400	\$38,400	\$281,250	incl.
Mechanical Work	1	\$76,800	\$76,800	\$76,800	\$76,800	incl.
Electrical Work	1	\$19,000	\$19,000	\$19,000	\$19,000	incl.
Land Acquisition (to be located @ existing landfill)		n.a.	\$0	\$0	\$0	\$0
Site Prep., Excav., Grading, etc.	1	\$75,000	\$75,000	\$75,000	\$75,000	incl.
Fencing	1,800	\$12.00	\$21,600	\$21,600	\$21,600	incl.
Utilities	1	\$40,000	\$40,000	\$40,000	\$40,000	incl.
Asphalt Paving	3,000	\$11.50	\$34,500	\$34,500	\$34,500	incl.
Concrete Paving	1,000	\$22.50	\$22,500	\$22,500	\$22,500	incl.
Pre-Fab Building with Footers		\$10.00	\$350,000	\$300,000	\$375,000	incl.
6" Concrete Slab		\$4.50	\$157,500	\$135,000	\$168,750	incl.
Lighting		\$4.00	\$140,000	\$120,000	\$150,000	incl.
HVAC (standard)		\$3.00	\$105,000	\$90,000	\$112,500	incl.
Plumbing & Bath	10	\$4,000	\$40,000	\$40,000	\$40,000	incl.
Sprinkler System		\$2.00	\$70,000	\$60,000	\$75,000	incl.
Equipment Foundations	1,850	\$18.00	\$33,300	\$33,300	\$33,300	incl.
Office Area	3,000	\$25.00	<u>\$75,000</u>	<u>\$75,000</u>	<u>\$75,000</u>	<u>incl.</u>
Sub-Total Installation & Construction			\$1,298,600	\$1,181,100	\$1,600,200	\$0
Sub-Total, Major Equipment, Installation & Construction			\$4,967,500	\$6,125,000	\$3,219,100	\$2,869,000
Engineering & Construction Management		17.5%	\$869,313	\$1,071,875	\$563,343	\$502,075
Contingency		10.0%	<u>\$496,750</u>	<u>\$612,500</u>	<u>\$321,910</u>	<u>\$286,900</u>
TOTAL			\$6,333,563	\$7,809,375	\$4,104,353	\$3,657,975

TABLE VII - 13
Vendor System
AREA 3 Recycling/RDF Facility
Capital Cost Estimate

	<u>Unit</u>	<u>Unit Cost</u>	<u>Vendor A</u>	<u>Vendor B</u>	<u>Vendor C</u>	<u>Component System</u>
Major Equipment			\$1,500,000	\$1,200,000	\$745,000	\$974,325
ADDITIONS:						
<u>Major Equipment</u>						
1. Front End Loader	0	\$120,000	\$0	\$0	\$0	incl.
2. Bobcat Loader	1	\$20,000	\$20,000	\$20,000	\$20,000	incl.
3. Forklift	1	\$20,000	\$20,000	\$20,000	\$20,000	incl.
4. 13 yd Roll-Off Containers	2	\$3,200	\$6,400	\$6,400	\$6,400	incl.
5. Mulcher/Shredder	1	\$75,000	\$75,000	\$75,000	\$75,000	incl.
6. Truck Scales w/ Mgmt System & Hook-Up	1	\$40,000	\$40,000	\$40,000	\$40,000	incl.
7. Truck Scale Pit	1	\$17,500	\$17,500	\$17,500	\$17,500	incl.
8. Environmental Control System & Baghouse	1	\$40,000	\$40,000	\$40,000	\$40,000	incl.
9. Electrical Switchgear	1	\$10,000	\$10,000	\$10,000	\$10,000	incl.
10. Pick-Up Truck	1	\$20,000	\$20,000	\$20,000	\$20,000	incl.
11. RDF Tractor Trailer	0	\$120,000	<u>incl. w/Trans.</u>	<u>incl. w/Trans.</u>	<u>incl. w/Trans.</u>	<u>incl.</u>
Sub-Total Major Equipment incl. Freight			\$1,748,900	\$1,448,900	\$993,900	\$974,325
<u>Installation & Construction</u>						
Setting Equipment	1	\$12,800	\$12,800	\$12,800	\$186,250	incl.
Mechanical Work	1	\$25,600	\$25,600	\$25,600	\$25,600	incl.
Electrical Work	1	\$8,000	\$8,000	\$8,000	\$8,000	incl.
Land Acquisition (to be located @ existing landfill)		n.a.	\$0	\$0	\$0	\$0
Site Prep., Excav., Grading, etc.	1	\$25,000	\$25,000	\$25,000	\$25,000	incl.
Fencing	1,350	\$12.00	\$16,200	\$16,200	\$16,200	incl.
Utilities	1	\$20,000	\$20,000	\$20,000	\$20,000	incl.
Asphalt Paving	1,500	\$11.50	\$17,250	\$17,250	\$17,250	incl.
Concrete Paving	750	\$22.50	\$16,875	\$16,875	\$16,875	incl.
Pre-Fab Building with Footers		\$10.00	\$210,000	\$150,000	\$325,000	incl.
6" Concrete Slab		\$4.50	\$94,500	\$67,500	\$146,250	incl.
Lighting		\$4.00	\$84,000	\$60,000	\$130,000	incl.
HVAC (standard)		\$3.00	\$63,000	\$45,000	\$97,500	incl.
Plumbing & Bath	6	\$4,000	\$24,000	\$24,000	\$24,000	incl.
Sprinkler System		\$2.00	\$42,000	\$30,000	\$65,000	incl.
Equipment Foundations	750	\$18.00	\$13,500	\$13,500	\$13,500	incl.
Office Area	900	\$25.00	<u>\$22,500</u>	<u>\$22,500</u>	<u>\$22,500</u>	<u>incl.</u>
Sub-Total Installation & Construction			\$695,225	\$554,225	\$1,138,925	\$0
Sub-Total, Major Equipment, Installation & Construction			\$2,444,125	\$2,003,125	\$2,132,825	\$974,325
Engineering & Construction Management		17.5%	\$427,722	\$350,547	\$373,244	\$170,507
Contingency		10.0%	<u>\$244,413</u>	<u>\$200,313</u>	<u>\$213,283</u>	<u>\$97,433</u>
TOTAL			\$3,116,259	\$2,553,984	\$2,719,352	\$1,242,264

TABLE VII - 14
Vendor System
AREA 4 Recycling/RDF Facility
Capital Cost Estimate

	<u>Unit</u>	<u>Unit Cost</u>	<u>Vendor A</u>	<u>Vendor B</u>	<u>Vendor C</u>	<u>Component System</u>
Major Equipment			\$1,500,000	\$1,200,000	\$745,000	\$974,325
ADDITIONS:						
<u>Major Equipment</u>						
1. Front End Loader	0	\$120,000	\$0	\$0	\$0	incl.
2. Bobcat Loader	1	\$20,000	\$20,000	\$20,000	\$20,000	incl.
3. Forklift	1	\$20,000	\$20,000	\$20,000	\$20,000	incl.
4. 13 yd Roll-Off Containers	2	\$3,200	\$6,400	\$6,400	\$6,400	incl.
5. Mulcher/Shredder	1	\$75,000	\$75,000	\$75,000	\$75,000	incl.
6. Truck Scales w/ Mgmt System & Hook-Up	1	\$40,000	\$40,000	\$40,000	\$40,000	incl.
7. Truck Scale Pit	1	\$17,500	\$17,500	\$17,500	\$17,500	incl.
8. Environmental Control System & Baghouse	1	\$40,000	\$40,000	\$40,000	\$40,000	incl.
9. Electrical Switchgear	1	\$10,000	\$10,000	\$10,000	\$10,000	incl.
10. Pick-Up Truck	1	\$20,000	\$20,000	\$20,000	\$20,000	incl.
11. RDF Tractor Trailer	0	\$120,000	<u>incl. w/Trans.</u>	<u>incl. w/Trans.</u>	<u>incl. w/Trans.</u>	<u>incl.</u>
Sub-Total Major Equipmnet incl. Freight			\$1,748,900	\$1,448,900	\$993,900	\$974,325
<u>Installation & Construction</u>						
Setting Equipment	1	\$12,800	\$12,800	\$12,800	\$186,250	incl.
Mechanical Work	1	\$25,600	\$25,600	\$25,600	\$25,600	incl.
Electrical Work	1	\$8,000	\$8,000	\$8,000	\$8,000	incl.
Land Acquisition (to be located @ existing landfill)		n.a.	\$0	\$0	\$0	\$0
Site Prep., Excav., Grading, etc.	1	\$25,000	\$25,000	\$25,000	\$25,000	incl.
Fencing	1,350	\$12.00	\$16,200	\$16,200	\$16,200	incl.
Utilities	1	\$20,000	\$20,000	\$20,000	\$20,000	incl.
Asphalt Paving	1,500	\$11.50	\$17,250	\$17,250	\$17,250	incl.
Concrete Paving	750	\$22.50	\$16,875	\$16,875	\$16,875	incl.
Pre-Fab Building with Footers		\$10.00	\$210,000	\$150,000	\$325,000	incl.
6" Concrete Slab		\$4.50	\$94,500	\$67,500	\$146,250	incl.
Lighting		\$4.00	\$84,000	\$60,000	\$130,000	incl.
HVAC (standard)		\$3.00	\$63,000	\$45,000	\$97,500	incl.
Plumbing & Bath	6	\$4,000	\$24,000	\$24,000	\$24,000	incl.
Sprinkler System		\$2.00	\$42,000	\$30,000	\$65,000	incl.
Equipment Foundations	750	\$18.00	\$13,500	\$13,500	\$13,500	incl.
Office Area	900	\$25.00	<u>\$22,500</u>	<u>\$22,500</u>	<u>\$22,500</u>	<u>incl.</u>
Sub-Total Installation & Construction			\$695,225	\$554,225	\$1,138,925	\$0
Sub-Total, Major Equipment, Installation & Construction			\$2,444,125	\$2,003,125	\$2,132,825	\$974,325
Engineering & Construction Management		17.5%	\$427,722	\$350,547	\$373,244	\$170,507
Contingency		10.0%	<u>\$244,413</u>	<u>\$200,313</u>	<u>\$213,283</u>	<u>\$97,433</u>
TOTAL			\$3,116,259	\$2,553,984	\$2,719,352	\$1,242,264

5.4.2 Automated/Mechanized Systems

Budgetary quotations were solicited and received obtained from several suppliers of the automated/mechanized systems. The quotations are summarized in Tables VII-11 through VII-14.

5.4.3 Summary

A summary of the capital costs associated with the automated systems and the component systems are given in Table VII-15 . As can be seen, the component system cost estimates are substantially less than the vendor systems. This is not surprising in that the complete system is obtained from a single source and all warranties and guarantees cover the entire system. This is a good advantage, however it does not come without a premium.

TABLE VII-15: Summary of Recycling/RDF Facility Estimated Capital Costs

	Area 1	Area 2	Area 3	Area 4
Vendor A	\$31,727,738	\$5,625,938	\$3,269,259	\$3,269,259
Vendor B	\$16,131,300	\$6,751,125	\$2,706,984	\$2,706,984
Vendor C	\$18,776,798	\$3,874,853	\$2,872,352	\$2,872,352
Component System	\$7,529,066	\$3,861,975	\$1,420,764	\$1,420,764

5.5 Operating Cost Estimate

5.5.1 Low Tech System

Operating costs have been estimated for the low tech systems described in Section 5.3.1 and shown in Figures VII-5 through VII-8. A breakdown of these operating cost estimates are shown in Tables VII-16 through VII-19. More detailed information is given in the exhibits which accompany these tables.

5.5.2 Automated/Mechanized Systems

Operating contract price estimates were obtained for the automated systems referred to in this section. The estimates run from a low of \$11 per ton processed to a high of \$25 per ton processed. These costs are summarized in Table VII-20.

TABLE VII - 16
Operations & Maintenance Cost Estimate
Area 1 Recycling/RDF Facility
Component System
Summary

<u>Item</u>	<u>Total</u>	<u>Exhibit</u>
Labor	\$1,593,000	A
Utilities	\$118,505	B
Equipment Fuel	\$34,643	C
Maintenance	<u>\$60,900</u>	D
 TOTAL	 \$1,807,048	

Operations & Maintenance Cost Estimate
Area 1 Recycling/RDF Facility
Exhibit A: Labor

<u>Personnel</u>	<u>Shift 1</u>	<u>Shift 2</u>	<u>Total</u>	<u>Annual Salary</u>	<u>Total</u>
Plant Manager	1	0	1	\$40,000	\$40,000
Accountant/Secretary	1	0	1	\$25,000	\$25,000
Secretary	1	0	1	\$15,000	\$15,000
Shift Supervisor	1	1	2	\$25,000	\$50,000
Asst. Shift Supervisor	1	1	2	\$22,500	\$45,000
Equipment Operators:					
Front End Loader	1	1	2	\$20,000	\$40,000
Bobcat Loader	1	1	2	\$20,000	\$40,000
Forklift	1	1	2	\$20,000	\$40,000
Baler	1	1	2	\$20,000	\$40,000
Conveyor Pickers:					
HDPE	5	5	10	\$12,500	\$125,000
PET	5	5	10	\$12,500	\$125,000
Clear Glass	4	4	8	\$12,500	\$100,000
Green Glass	2	2	4	\$12,500	\$50,000
Brown Glass	1	1	2	\$12,500	\$25,000
Non-ferrous	2	2	4	\$12,500	\$50,000
Aluminum	5	5	10	\$12,500	\$125,000
Ferrous	3	3	6	\$12,500	\$75,000
Tipping Floor	2	2	4	\$12,500	\$50,000
Truck Driver	6	6	12	\$12,500	\$150,000
Laborers	2	2	4	\$12,500	\$50,000
Electrician	1	0	1	\$22,500	\$22,500
Mechanic/Maintenance	2	0	2	\$22,500	\$45,000
			92		\$1,327,500
				Benefits 20.0%	\$265,500
				TOTAL	\$1,593,000

Operations & Maintenance Cost Estimate
 Area 1 Recycling/RDF Facility
 Exhibit B: Utilities

Assumptions:

Electricity Cost/Kwh: \$0.055

<u>Equipment</u>	<u>HP</u>	<u>KW</u>	<u>Hrs/Yr</u>	<u>QTY</u>	<u>Total</u>
Bag Opener	25	18.65	4160	2	\$8,534
Infeed/Incline Conveyor	15	11.19	4160	2	\$5,121
Picking Conveyor w/Mag. Sep.	10	7.46	4160	2	\$3,414
HDPE Conveyor	5	3.73	4160	1	\$853
PET Conveyor	5	3.73	4160	1	\$853
Clear Glass Conveyor	3	2.238	4160	1	\$512
Green Glass Conveyor	3	2.238	4160	1	\$512
Amber Glass Conveyor	3	2.238	4160	1	\$512
Non-Ferrous Conveyor	5	3.73	4160	1	\$853
Aluminum Conveyor	5	3.73	4160	1	\$853
Ferrous Conveyor	5	3.73	4160	1	\$853
Ferrous Biscuit Baler Infeed Conveyor	1.5	1.119	4160	1	\$256
RDF Conveyor	5	3.73	4160	1	\$853
Glass Crusher	1	0.746	4160	3	\$512
Aluminum Can Crusher & Blower	5.5	4.103	4160	1	\$939
Baler	125	93.25	2080	1	\$10,668
Baler Conveyor	5	3.73	2080	1	\$427
Tin Can Densifier	20	14.92	4160	1	\$3,414
Environmental Control Sys. & Baghouse	40	29.84	4160	1	\$6,827
Truck Scales	n.a.	10	1040	1	\$572
Instrumentation	n.a.	15	4160	1	\$3,432
Lighting	n.a.	150	4160	1	\$34,320
Miscellaneous	20	14.92	4160	1	\$3,414
Water	<u>n.a.</u>	<u>n.a.</u>	n.a.	n.a.	<u>\$30,000</u>
TOTAL	307	404.0			\$118,505

Operations & Maintenance Cost Estimate
 Area 1 Recycling/RDF Facility
 Exhibit C: Equipment Fuel

<u>Equipment</u>	<u>Hrs/Yr</u>	<u>Gal/Hr</u>	<u>QTY</u>	<u>Unit Price</u>	<u>Total</u>
Front End Loader	4160	3.5	1	\$1.10	\$16,016
Bobcat Loader	4160	1	1	\$1.10	\$4,576
Forklift	4160	1	1	\$1.10	\$4,576
Mulcher/Shredder	2080	3.5	1	\$1.10	\$8,008
Pick-Up Truck	n.a.	n.a.	1	20k mi/yr @ 15 mpg	\$1,467
TOTAL					\$34,643

Operations & Maintenance Cost Estimate
 AREA 1 Recycling/RDF Facility
 Exhibit D: Maintenance

<u>Equipment</u>	<u>QTY</u>	<u>Unit Price</u>	<u>Total Price</u>
1. Front End Loader	1	\$6,000	\$6,000
2. Bobcat Loader	1	\$3,000	\$3,000
3. Forklift	1	\$3,000	\$3,000
3. Bag Opener	2	\$1,200	\$2,400
4. Infeed/Incline Conveyor	2	\$1,800	\$3,600
6. Picking Conveyor w/Mezzanine	2	\$2,400	\$4,800
8. Magnetic Separator	2	incl.	incl.
9. HDPE Conveyor	1	\$600	\$600
10. PET Conveyor	1	\$600	\$600
11. Glass Conveyor	3	\$600	\$1,800
12. Non-ferrous Conveyor	1	\$600	\$600
13. Aluminum Conveyor	1	\$600	\$600
14. Ferrous Conveyor	1	\$600	\$600
15. RDF Conveyor	1	\$600	\$600
16. Baler	1	\$3,600	\$3,600
17. Baler Conveyor	1	incl.	incl.
16. Glass Crusher	3	\$600	\$1,800
17. Aluminum Can Crusher & Blower	1	n.a.	n.a.
19. Tin Can Densifier	1	\$1,200	\$1,200
20. Non-ferrous 13 yd roll-off container	2	\$100	\$200
21. Ferrous Scrap 13 yd roll-off container	2	\$100	\$200
22. Mulcher/Shredder	1	\$3,000	\$3,000
23. Truck Scales w/ Mgmt System & Hook-	1	\$500	\$500
24. Truck Scale Pit	1	n.a.	n.a.
25. Environmental Control System & Baghou	1	\$2,400	\$2,400
26. Instrumentation	1	\$3,000	\$3,000
27. Electrical Switchgear	1	\$1,200	\$1,200
28. Pick-Up Truck	1	\$1,200	\$1,200
29. RDF Tractor Trailer w/extra Trailer	6	\$2,400	<u>\$14,400</u>
		TOTAL	\$60,900

TABLE VII - 17
Operations & Maintenance Cost Estimate
Area 2 Recycling/RDF Facility
Component System
Summary

<u>Item</u>	<u>Total</u>	<u>Exhibit</u>
Labor	\$1,113,000	A
Utilities	\$85,557	B
Equipment Fuel	\$34,643	C
Maintenance	<u>\$43,500</u>	D
 TOTAL	 \$1,276,700	

Operations & Maintenance Cost Estimate
Area 2 Recycling/RDF Facility
Exhibit A: Labor

<u>Personnel</u>	<u>Shift 1</u>	<u>Shift 2</u>	<u>Total</u>	<u>Annual Salary</u>	<u>Total</u>
Plant Manager	1	0	1	\$40,000	\$40,000
Accountant/Secretary	1	0	1	\$25,000	\$25,000
Secretary	1	0	1	\$15,000	\$15,000
Shift Supervisor	1	1	2	\$25,000	\$50,000
Asst. Shift Supervisor	1	1	2	\$22,500	\$45,000
Equipment Operators:					
Front End Loader	1	1	2	\$20,000	\$40,000
Bobcat Loader	1	1	2	\$20,000	\$40,000
Forklift	1	1	2	\$20,000	\$40,000
Baler	1	1	2	\$20,000	\$40,000
Conveyor Pickers:					
HDPE	3	3	6	\$12,500	\$75,000
PET	3	3	6	\$12,500	\$75,000
Clear Glass	2	2	4	\$12,500	\$50,000
Green Glass	1	1	2	\$12,500	\$25,000
Brown Glass	1	1	2	\$12,500	\$25,000
Non-ferrous	1	1	2	\$12,500	\$25,000
Aluminum	3	3	6	\$12,500	\$75,000
Ferrous	2	2	4	\$12,500	\$50,000
Tipping Floor	2	2	4	\$12,500	\$50,000
Truck Driver	1	1	2	\$12,500	\$25,000
Laborers	2	2	4	\$12,500	\$50,000
Electrician	1	0	1	\$22,500	\$22,500
Mechanic/Maintenance	2	0	<u>2</u>	\$22,500	<u>\$45,000</u>
			60		\$927,500
				Benefits 20.0%	<u>\$185,500</u>
				TOTAL	\$1,113,000

Operations & Maintenance Cost Estimate
Area 2 Recycling/RDF Facility
Exhibit B: Utilities

Assumptions:

Electricity Cost/Kwh: \$0.055

<u>Equipment</u>	<u>HP</u>	<u>KW</u>	<u>Hrs/Yr</u>	<u>QTY</u>	<u>Total</u>
Bag Opener	25	18.65	4160	1	\$4,267
Infeed/Incline Conveyor	10	7.46	4160	1	\$1,707
Picking Conveyor w/Mag. Sep.	7.5	5.595	4160	1	\$1,280
HDPE Conveyor	3.5	2.611	4160	1	\$597
PET Conveyor	3.5	2.611	4160	1	\$597
Clear Glass Conveyor	3	2.238	4160	1	\$512
Green Glass Conveyor	3	2.238	4160	1	\$512
Amber Glass Conveyor	3	2.238	4160	1	\$512
Non-Ferrous Conveyor	3.5	2.611	4160	1	\$597
Aluminum Conveyor	3.5	2.611	4160	1	\$597
Ferrous Conveyor	3.5	2.611	4160	1	\$597
Ferrous Biscuit Baler Infeed Conveyor	1.5	1.119	4160	1	\$256
RDF Conveyor	5	3.73	4160	1	\$853
Glass Crusher	1	0.746	4160	3	\$512
Aluminum Can Crusher & Blower	5.5	4.103	4160	1	\$939
Baler	100	74.6	2080	1	\$8,534
Baler Conveyor	5	3.73	2080	1	\$427
Tin Can Densifier	20	14.92	4160	1	\$3,414
Environmental Control Sys. & Baghouse	25	18.65	4160	1	\$4,267
Truck Scales	n.a.	10	1040	1	\$572
Instrumentation	n.a.	15	4160	1	\$3,432
Lighting	n.a.	75	4160	1	\$17,160
Miscellaneous	20	14.92	4160	1	\$3,414
Water	<u>n.a.</u>	<u>n.a.</u>	n.a.	n.a.	<u>\$30,000</u>
TOTAL	252	288.0			\$85,557

Operations & Maintenance Cost Estimate
 Area 2 Recycling/RDF Facility
 Exhibit C: Equipment Fuel

<u>Equipment</u>	<u>Hrs/Yr</u>	<u>Gal/Hr</u>	<u>QTY</u>	<u>Unit Price</u>	<u>Total</u>
Front End Loader	4160	3.5	1	\$1.10	\$16,016
Bobcat Loader	4160	1	1	\$1.10	\$4,576
Forklift	4160	1	1	\$1.10	\$4,576
Mulcher/Shredder	2080	3.5	1	\$1.10	\$8,008
Pick-Up Truck	n.a.	n.a.	1	20k mi/yr @ 15 mpg	\$1,467
TOTAL					\$34,643

Operations & Maintenance Cost Estimate
 AREA 2 Recycling/RDF Facility
 Exhibit D: Maintenance

<u>Equipment</u>	<u>QTY</u>	<u>Unit Price</u>	<u>Total Price</u>
1. Front End Loader	1	\$6,000	\$6,000
2. Bobcat Loader	1	\$3,000	\$3,000
3. Forklift	1	\$3,000	\$3,000
3. Bag Opener	1	\$1,200	\$1,200
4. Infeed/Incline Conveyor	1	\$1,800	\$1,800
6. Picking Conveyor w/Mezzanine	1	\$2,400	\$2,400
8. Magnetic Separator	1	incl.	incl.
9. HDPE Conveyor	1	\$600	\$600
10. PET Conveyor	1	\$600	\$600
11. Glass Conveyor	3	\$600	\$1,800
12. Non-ferrous Conveyor	1	\$600	\$600
13. Aluminum Conveyor	1	\$600	\$600
14. Ferrous Conveyor	1	\$600	\$600
15. RDF Conveyor	1	\$600	\$600
16. Baler	1	\$3,600	\$3,600
17. Baler Conveyor	1	incl.	incl.
16. Glass Crusher	3	\$600	\$1,800
17. Aluminum Can Crusher & Blower	1	n.a.	n.a.
19. Tin Can Densifier	1	\$1,200	\$1,200
20. Non-ferrous 13 yd roll-off container	2	\$100	\$200
21. Ferrous Scrap 13 yd roll-off container	2	\$100	\$200
22. Mulcher/Shredder	1	\$3,000	\$3,000
23. Truck Scales w/ Mgmt System & Hook-	1	\$500	\$500
24. Truck Scale Pit	1	n.a.	n.a.
25. Environmental Control System & Baghou	1	\$2,400	\$2,400
26. Instrumentation	1	\$3,000	\$3,000
27. Electrical Switchgear	1	\$1,200	\$1,200
28. Pick-Up Truck	1	\$1,200	\$1,200
29. RDF Tractor Trailer w/extra Trailer	1	\$2,400	\$2,400
		TOTAL	\$43,500

TABLE VII - 18
Operations & Maintenance Cost Estimate
Area 3 Recycling/RDF Facility
Component System
Summary

<u>Item</u>	<u>Total</u>	<u>Exhibit</u>
Labor	\$774,000	A
Utilities	\$31,738	B
Equipment Fuel	\$15,195	C
Maintenance	<u>\$20,100</u>	D
 TOTAL	 \$841,033	

Operations & Maintenance Cost Estimate
 Area 3 Recycling/RDF Facility
 Exhibit A: Labor

<u>Personnel</u>	<u>Shift 1</u>	<u>Shift 2</u>	<u>Total</u>	<u>Annual Salary</u>	<u>Total</u>
Plant Manager	1	0	1	\$40,000	\$40,000
Accountant/Secretary	1	0	1	\$25,000	\$25,000
Secretary	1	0	1	\$15,000	\$15,000
Shift Supervisor	1	1	2	\$25,000	\$50,000
Asst. Shift Supervisor	0	0	0	\$22,500	\$0
Equipment Operators:					
Front End Loader	0	0	0	\$20,000	\$0
Bobcat Loader	1	1	2	\$20,000	\$40,000
Forklift	1	1	2	\$20,000	\$40,000
Baler	1	1	2	\$20,000	\$40,000
Conveyor Pickers:					
HDPE	2	2	4	\$12,500	\$50,000
PET	2	2	4	\$12,500	\$50,000
Clear Glass	2	2	4	\$12,500	\$50,000
Green Glass	1	1	2	\$12,500	\$25,000
Brown Glass	1	1	2	\$12,500	\$25,000
Non-ferrous	1	1	2	\$12,500	\$25,000
Aluminum	2	2	4	\$12,500	\$50,000
Ferrous	0	0	0	\$12,500	\$0
Tipping Floor	1	1	2	\$12,500	\$25,000
Truck Driver	1	1	2	\$12,500	\$25,000
Laborers	1	1	2	\$12,500	\$25,000
Electrician	1	0	1	\$22,500	\$22,500
Mechanic/Maintenance	1	0	<u>1</u>	\$22,500	<u>\$22,500</u>
			41		\$645,000
				Benefits 20.0%	<u>\$129,000</u>
				TOTAL	\$774,000

Operations & Maintenance Cost Estimate
 Area 3 Recycling/RDF Facility
 Exhibit B: Utilities

Assumptions:

Electricity Cost/Kwh: \$0.055

<u>Equipment</u>	<u>HP</u>	<u>KW</u>	<u>Hrs/Yr</u>	<u>QTY</u>	<u>Total</u>
Bag Opener	0	0	4160	0	\$0
Infeed/Incline Conveyor w/Mag. Sep.	1.5	1.119	4160	2	\$512
Picking Conveyor	2	1.492	4160	2	\$683
HDPE Conveyor	3.5	2.611	4160	0	\$0
PET Conveyor	3.5	2.611	4160	0	\$0
Clear Glass Conveyor	3	2.238	4160	0	\$0
Green Glass Conveyor	3	2.238	4160	0	\$0
Amber Glass Conveyor	3	2.238	4160	0	\$0
Non-Ferrous Conveyor	3.5	2.611	4160	0	\$0
Aluminum Conveyor	3.5	2.611	4160	0	\$0
Ferrous Conveyor	3.5	2.611	4160	0	\$0
Ferrous Biscuit Baler Infeed Conveyor	1.5	1.119	4160	0	\$0
RDF Conveyor	5	3.73	4160	1	\$853
Glass Crusher	1	0.746	4160	3	\$512
Aluminum Can Crusher & Blower	5.5	4.103	4160	1	\$939
Baler	30	22.38	2080	1	\$2,560
Baler Conveyor	3	2.238	2080	1	\$256
Tin Can Densifier	20	14.92	4160	0	\$0
Environmental Control Sys. & Baghouse	7.5	5.595	4160	1	\$1,280
Truck Scales	n.a.	10	1040	1	\$572
Instrumentation	n.a.	10	4160	1	\$2,288
Lighting	n.a.	20	4160	1	\$4,576
Miscellaneous	10	7.46	4160	1	\$1,707
Water	<u>n.a.</u>	<u>n.a.</u>	n.a.	n.a.	<u>\$15,000</u>
TOTAL	113.5	124.7			\$31,738

Operations & Maintenance Cost Estimate
 Area 3 Recycling/RDF Facility
 Exhibit C: Equipment Fuel

<u>Equipment</u>	<u>Hrs/Yr</u>	<u>Gal/Hr</u>	<u>QTY</u>	<u>Unit Price</u>	<u>Total</u>
Front End Loader	4160	3.5	0	\$1.10	\$0
Bobcat Loader	4160	1	1	\$1.10	\$4,576
Forklift	4160	1	1	\$1.10	\$4,576
Mulcher/Shredder	2080	2	1	\$1.10	\$4,576
Pick-Up Truck	n.a.	n.a.	1	20k mi/yr @ 15 mpg	\$1,467
TOTAL					\$15,195

Operations & Maintenance Cost Estimate
 AREA 3 Recycling/RDF Facility
 Exhibit D: Maintenance

<u>Equipment</u>	<u>QTY</u>	<u>Unit Price</u>	<u>Total Price</u>
1. Front End Loader	0	\$6,000	\$0
2. Bobcat Loader	1	\$3,000	\$3,000
3. Forklift	1	\$3,000	\$3,000
3. Bag Opener	0	\$1,200	\$0
4. Infeed/Incline Conveyor	2	\$600	\$1,200
6. Picking Conveyor	2	\$600	\$1,200
8. Magnetic Separator	2	incl.	incl.
9. HDPE Conveyor	0	\$600	\$0
10. PET Conveyor	0	\$600	\$0
11. Glass Conveyor	0	\$600	\$0
12. Non-ferrous Conveyor	0	\$600	\$0
13. Aluminum Conveyor	0	\$600	\$0
14. Ferrous Conveyor	0	\$600	\$0
15. RDF Conveyor	1	\$600	\$600
16. Baler	1	\$1,800	\$1,800
17. Baler Conveyor	1	incl.	incl.
16. Glass Crusher	3	\$600	\$1,800
17. Aluminum Can Crusher & Blower	1	n.a.	n.a.
19. Tin Can Densifier	0	\$1,200	\$0
20. Non-ferrous 13 yd roll-off container	2	\$100	\$200
21. Ferrous Scrap 13 yd roll-off container	2	\$100	\$200
22. Mulcher/Shredder	1	\$1,200	\$1,200
23. Truck Scales w/ Mgmnt System & Hook-	1	\$500	\$500
24. Truck Scale Pit	1	incl.	incl.
25. Environmental Control System & Baghou	1	\$600	\$600
26. Instrumentation	1	\$600	\$600
27. Electrical Switchgear	1	\$600	\$600
28. Pick-Up Truck	1	\$1,200	\$1,200
29. RDF Tractor Trailer w/extra Trailer	1	\$2,400	\$2,400
		TOTAL	\$20,100

TABLE VII - 19
Operations & Maintenance Cost Estimate
Area 4 Recycling/RDF Facility
Component System
Summary

<u>Item</u>	<u>Total</u>	<u>Exhibit</u>
Labor	\$774,000	A
Utilities	\$31,738	B
Equipment Fuel	\$15,195	C
Maintenance	<u>\$20,100</u>	D
 TOTAL	 \$841,033	

Operations & Maintenance Cost Estimate
Area 4 Recycling/RDF Facility
Exhibit A: Labor

<u>Personnel</u>	<u>Shift 1</u>	<u>Shift 2</u>	<u>Total</u>	<u>Annual Salary</u>	<u>Total</u>
Plant Manager	1	0	1	\$40,000	\$40,000
Accountant/Secretary	1	0	1	\$25,000	\$25,000
Secretary	1	0	1	\$15,000	\$15,000
Shift Supervisor	1	1	2	\$25,000	\$50,000
Asst. Shift Supervisor	0	0	0	\$22,500	\$0
Equipment Operators:					
Front End Loader	0	0	0	\$20,000	\$0
Bobcat Loader	1	1	2	\$20,000	\$40,000
Forklift	1	1	2	\$20,000	\$40,000
Baler	1	1	2	\$20,000	\$40,000
Conveyor Pickers:					
HDPE	2	2	4	\$12,500	\$50,000
PET	2	2	4	\$12,500	\$50,000
Clear Glass	2	2	4	\$12,500	\$50,000
Green Glass	1	1	2	\$12,500	\$25,000
Brown Glass	1	1	2	\$12,500	\$25,000
Non-ferrous	1	1	2	\$12,500	\$25,000
Aluminum	2	2	4	\$12,500	\$50,000
Ferrous	0	0	0	\$12,500	\$0
Tipping Floor	1	1	2	\$12,500	\$25,000
Truck Driver	1	1	2	\$12,500	\$25,000
Laborers	1	1	2	\$12,500	\$25,000
Electrician	1	0	1	\$22,500	\$22,500
Mechanic/Maintenance	1	0	<u>1</u>	\$22,500	<u>\$22,500</u>
			41		\$645,000
				Benefits	20.0% \$129,000
				TOTAL	\$774,000

Operations & Maintenance Cost Estimate
 Area 4 Recycling/RDF Facility
 Exhibit B: Utilities

Assumptions:

Electricity Cost/Kwh: \$0.055

<u>Equipment</u>	<u>HP</u>	<u>KW</u>	<u>Hrs/Yr</u>	<u>QTY</u>	<u>Total</u>
Bag Opener	0	0	4160	0	\$0
Infeed/Incline Conveyor w/Mag. Sep.	1.5	1.119	4160	2	\$512
Picking Conveyor	2	1.492	4160	2	\$683
HDPE Conveyor	3.5	2.611	4160	0	\$0
PET Conveyor	3.5	2.611	4160	0	\$0
Clear Glass Conveyor	3	2.238	4160	0	\$0
Green Glass Conveyor	3	2.238	4160	0	\$0
Amber Glass Conveyor	3	2.238	4160	0	\$0
Non-Ferrous Conveyor	3.5	2.611	4160	0	\$0
Aluminum Conveyor	3.5	2.611	4160	0	\$0
Ferrous Conveyor	3.5	2.611	4160	0	\$0
Ferrous Biscuit Baler Infeed Conveyor	1.5	1.119	4160	0	\$0
RDF Conveyor	5	3.73	4160	1	\$853
Glass Crusher	1	0.746	4160	3	\$512
Aluminum Can Crusher & Blower	5.5	4.103	4160	1	\$939
Baler	30	22.38	2080	1	\$2,560
Baler Conveyor	3	2.238	2080	1	\$256
Tin Can Densifier	20	14.92	4160	0	\$0
Environmental Control Sys. & Baghouse	7.5	5.595	4160	1	\$1,280
Truck Scales	n.a.	10	1040	1	\$572
Instrumentation	n.a.	10	4160	1	\$2,288
Lighting	n.a.	20	4160	1	\$4,576
Miscellaneous	10	7.46	4160	1	\$1,707
Water	<u>n.a.</u>	<u>n.a.</u>	n.a.	n.a.	<u>\$15,000</u>
TOTAL	113.5	124.7			\$31,738

Operations & Maintenance Cost Estimate
 Area 4 Recycling/RDF Facility
 Exhibit C: Equipment Fuel

<u>Equipment</u>	<u>Hrs/Yr</u>	<u>Gal/Hr</u>	<u>QTY</u>	<u>Unit Price</u>	<u>Total</u>
Front End Loader	4160	3.5	0	\$1.10	\$0
Bobcat Loader	4160	1	1	\$1.10	\$4,576
Forklift	4160	1	1	\$1.10	\$4,576
Mulcher/Shredder	2080	2	1	\$1.10	\$4,576
Pick-Up Truck	n.a.	n.a.	1	20k mi/yr @ 15 mpg	\$1,467
TOTAL					\$15,195

Operations & Maintenance Cost Estimate
 AREA 4 Recycling/RDF Facility
 Exhibit D: Maintenance

<u>Equipment</u>	<u>QTY</u>	<u>Unit Price</u>	<u>Total Price</u>
1. Front End Loader	0	\$6,000	\$0
2. Bobcat Loader	1	\$3,000	\$3,000
3. Forklift	1	\$3,000	\$3,000
3. Bag Opener	0	\$1,200	\$0
4. Infeed/Incline Conveyor	2	\$600	\$1,200
6. Picking Conveyor	2	\$600	\$1,200
8. Magnetic Separator	2	incl.	incl.
9. HDPE Conveyor	0	\$600	\$0
10. PET Conveyor	0	\$600	\$0
11. Glass Conveyor	0	\$600	\$0
12. Non-ferrous Conveyor	0	\$600	\$0
13. Aluminum Conveyor	0	\$600	\$0
14. Ferrous Conveyor	0	\$600	\$0
15. RDF Conveyor	1	\$600	\$600
16. Baler	1	\$1,800	\$1,800
17. Baler Conveyor	1	incl.	incl.
16. Glass Crusher	3	\$600	\$1,800
17. Aluminum Can Crusher & Blower	1	n.a.	n.a.
19. Tin Can Densifier	0	\$1,200	\$0
20. Non-ferrous 13 yd roll-off container	2	\$100	\$200
21. Ferrous Scrap 13 yd roll-off container	2	\$100	\$200
22. Mulcher/Shredder	1	\$1,200	\$1,200
23. Truck Scales w/ Mgmnt System & Hook-	1	\$500	\$500
24. Truck Scale Pit	1	incl.	incl.
25. Environmental Control System & Baghou	1	\$600	\$600
26. Instrumentation	1	\$600	\$600
27. Electrical Switchgear	1	\$600	\$600
28. Pick-Up Truck	1	\$1,200	\$1,200
29. RDF Tractor Trailer w/extra Trailer	1	\$2,400	<u>\$2,400</u>
		TOTAL	\$20,100

TABLE VII - 20
Vendor System
AREA Recycling/RDF Facilities
Operations & Maintenance Cost Estimate

<u>Vendor</u>	<u>Unit Cost/Ton</u>	<u>Area 1</u>	<u>Area 2</u>	<u>Area 3</u>	<u>Area 4</u>
A	\$11.00	\$6,004,383			
	\$22.00		\$1,104,158		
	\$25.00			\$404,775	
	\$25.00				\$461,675
B	\$15.00	\$8,187,795			
	\$22.00		\$1,104,158		
	\$25.00			\$404,775	
	\$25.00				\$461,675
C (see Note below)	\$2.17	\$1,185,853			
	\$8.13		\$407,878		
	\$14.43			\$233,573	
	\$16.81				\$310,401

NOTE: Concise information was not provided regarding complete operations and maintenance costs. Based on information provided, costs per ton were estimated.

5.5.3 Summary

A comparison of all operating and maintenance costs quoted and developed for the component and automated/mechanized systems is shown in Table VII-21. From this table it is evident that the O&M costs of the automated/mechanized systems is higher for the larger facilities and lower for the smaller facilities.

TABLE VII-21: Summary of Recycling/RDF Facility Estimated O & M Costs

	Area 1	Area 2	Area 3	Area 4
Vendor A	\$4,938,868	\$869,000	\$414,750	\$312,500
Vendor B	\$6,734,820	\$869,000	\$414,750	\$312,500
Vendor C	\$1,031,488	\$329,000	\$234,770	\$222,500
Component System	\$1,682,781	\$1,156,700	\$841,033	\$841,033

5.6 Siting Analysis

Any scenario of waste management is going to require some type of landfill facility. There is going to be some material that will have to go to a landfill, whether it is construction debris, MSW or ash from the RDF steam plant. As described earlier, for this reason, and in order to prevent extra handling of the waste, landfills within the 10 county region were selected as the most obvious sites for the recycling/RDF facilities. These sites will enable the elimination of extra handling/hauling of materials. These four area recycling/RDF facilities are shown in Figure VII-3.

5.7 Quantity of Recyclables

Chapter II of this plan establishes the characterization of the waste for this region and Chapter III establishes the quantity of waste generated within the region. The following table summarizes this characterization and quantities. Once again, the quantities shown are projected for 1998.

TABLE VII-22: Region MSW Characterization and Quantities

ITEM	PERCENTAGE	QUANTITY, TONS
Paper & Paperboard	38.0%	239,666
Glass	7.0%	44,149
Ferrous	7.0%	44,149
Aluminum	1.5%	9,460
Non-Ferrous	0.5%	3,154
Plastics	9.0%	56,763
Rubber & Leather	3.0%	18,921
Textiles	4.0%	25,228
Wood	18.0%	113,526
Food Waste	9.0%	56,763
Yard Waste	incl. w/Wood	----
Miscellaneous Inorganics	incl. w/Other	----
Other	3.0%	18,921
TOTAL	100.0%	630,700

For purposes of determining the amount of recyclables in the waste stream and the subsequent amount which can be recovered through recycling, this characterization needs to be broken down even further. Therefore, using this characterization, along with results from a Department of Energy Study in which measurements were taken before and after a waste processing/recycling operation, Table VII-23 was developed. Also included in this table is the estimated quantity of recyclables which could potentially be removed from the wastestream. Once again, this information is based on actual data from Department of Energy tests and although it is fair to assume that all testing will differ, this should provide a reliable record of separation potential.

TABLE VII-23: Detailed MSW Characterization and Recyclables Quantity

ITEM	Percentage of MSW Stream	Pounds Removed/ 100 lbs of MSW	Pounds Remaining/ 100 lbs of MSW	Quantity Recovered Tons
Office Paper	6.5%	0.7	5.9	4,415
Newsprint	8.5%	0.9	7.7	5,676
Mixed Paper	18.0%	1.8	16.2	11,353
Clear Glass	5.0%	3.9	1.1	24,597
Amber Glass	0.9%	0.7	0.2	4,415
Green Glass	1.1%	0.9	0.2	5,676
Bi-Metal Cans	7.0%	5.7	1.3	35,950
Aluminum Cans	1.5%	0.9	0.6	5,676
HDPE Plastic	2.0%	1.3	0.7	8,199
PET Plastic	2.0%	1.3	0.7	8,199
Other Plastic	5.0%	0.0	5.0	0
Food Scraps	9.0%	4.2	4.8	26,489
Textiles	4.0%	0.4	3.6	2,523
Tires/Reusable	1.3%	1.1	0.2	6,938
Yard Waste	13.0%	9.8	3.3	61,809
Wood Debris	5.0%	3.8	1.3	23,967
Non-Ferrous	0.5%	0.5	0.0	3,154
Old Bulky Whitegoods (OBW)	1.0%	1.0	0.1	6,307
Old Corrugated Cardboard (OCC)	5.0%	0.5	4.5	3,154
Rubber	3.0%	0.4	2.6	2,523
Concrete	0.1%	0.1	0.0	631
Soil	0.5%	0.2	0.3	1,261
Ceramics	0.1%	0.0	0.1	0
TOTAL	100.0%	39.8	60.2	252,912

This table shows that approximately 253,000 tons per year of materials will be removed in the recycling process. Obviously, not all of these items end up being recycled. Some items fall off of the conveyors and will be swept up at the end of the day; some items end up in a recyclable material bin as a "contaminant"; and some items, such as food scraps, are contaminants on glass containers, tin cans, etc. Other items, such as the concrete and soil are classified as "construction/demolition" debris. These items will require disposal in a Class III/IV landfill facility. And finally, as noted in earlier sections, the yard waste and wood debris is mulched and sold/given away to the public.

Using these quantities and the current market value of the recyclables from Recycling Times, March 22, 1994 issue, Table VII-24 projects the possible revenue from the sale of these materials. This table also represents the final destination of some of the non-recyclable items which are removed during the recycling/RDF process as represented by Table VII-23.

TABLE VII-24: Potential Market Value of Recyclables

ITEM	Pounds Removed/ 100 lbs of MSW	Total Tons Removed	End-User Average Current Market Value, \$/Ton	Potential Gross Revenue
Office Paper	0.7	4,415	\$180.00	\$794,700
Newsprint	0.9	5,676	\$17.50	\$99,330
Mixed Paper	1.8	11,353	\$12.50	\$141,913
Clear Glass	3.9	24,597	\$60.00	\$1,475,820
Amber Glass	0.7	4,415	\$45.00	\$198,675
Green Glass	0.9	5,676	\$9.50	\$53,922
Bi-Metal Cans	5.7	35,950	\$71.78	\$2,580,491
Aluminum Cans	0.9	5,676	\$750.00	\$4,257,000
HDPE Plastic	1.3	8,199	\$160.00	\$1,311,840
PET Plastic	1.3	8,199	\$170.00	\$1,393,830
Other Plastic	0.0	0	----	----
Food Scraps	4.2	26,489	Contaminant in recyclable mat'l	----
Textiles	0.4	2,523	Contaminant in recyclable mat'l	----
Tires/Reusable	1.1	6,938	WTE/landfill	----
Yard Waste	9.8	61,809	mulched	----
Wood Debris	3.8	23,967	mulched	----
Non-Ferrous	0.5	3,154	\$25.00	\$78,850
Old Bulky Whitegoods (OBW)	1.0	6,307	\$20.00	\$126,140
Old Corrugated Cardboard (OCC)	0.5	3,154	\$42.50	\$134,045
Rubber	0.4	2,523	Contaminant in recyclable mat'l	----
Concrete	0.1	631	100% to landfill	----
Soil	0.2	1,261	100% to landfill	----
Ceramics	0.0	0	----	----
TOTAL	39.8	252,912		\$12,646,556

Please note that the value of the recyclables shown in Table VII-24 DO NOT account for the transportation charges to get the recyclables to market. Also, these prices are based on

current market conditions. History has shown that market pricing is volatile and can change quickly and abruptly.

The existence of a major pulp and paper plant within the 10 county region should offer a very good opportunity for the recycling of several paper products.

6.0 Refuse-Derived Fuel Quantity and Characteristics

Before a waste-to-energy facility size can be established, an analysis to determine the quantity and composition/characterization of the RDF being combusted must be performed. This is needed in order to determine the BTU and moisture content is in the RDF, and thus, how much energy can be generated from the RDF. Prior to combustion at the waste-to-energy facility, for this analysis, the waste would be processed for the recovery of recyclable materials (as discussed in the previous sections of this chapter). Therefore, an analysis of the remaining RDF (after recyclables recovery) is needed. First, using the information provided in Table VII-23, Figure VII-9 was developed. Figure VII-9 shows that of the wastestream, approximately 60.2% will become RDF, 19.1% can be recycled, 13.4% consists of yardwaste and compostable materials and 7.3% consists of items which would be landfilled such as construction and demolition materials. The information in Table VII-23 also gives the amount of material remaining after the recycling process. Using this and applying each component's BTU value, an overall BTU content of the RDF can be established. The results of such an analysis is presented in Table VII-25. From this table, the higher heating value of the RDF is established at approximately 6,300 BTU/lb.

Fig
VII-9
←

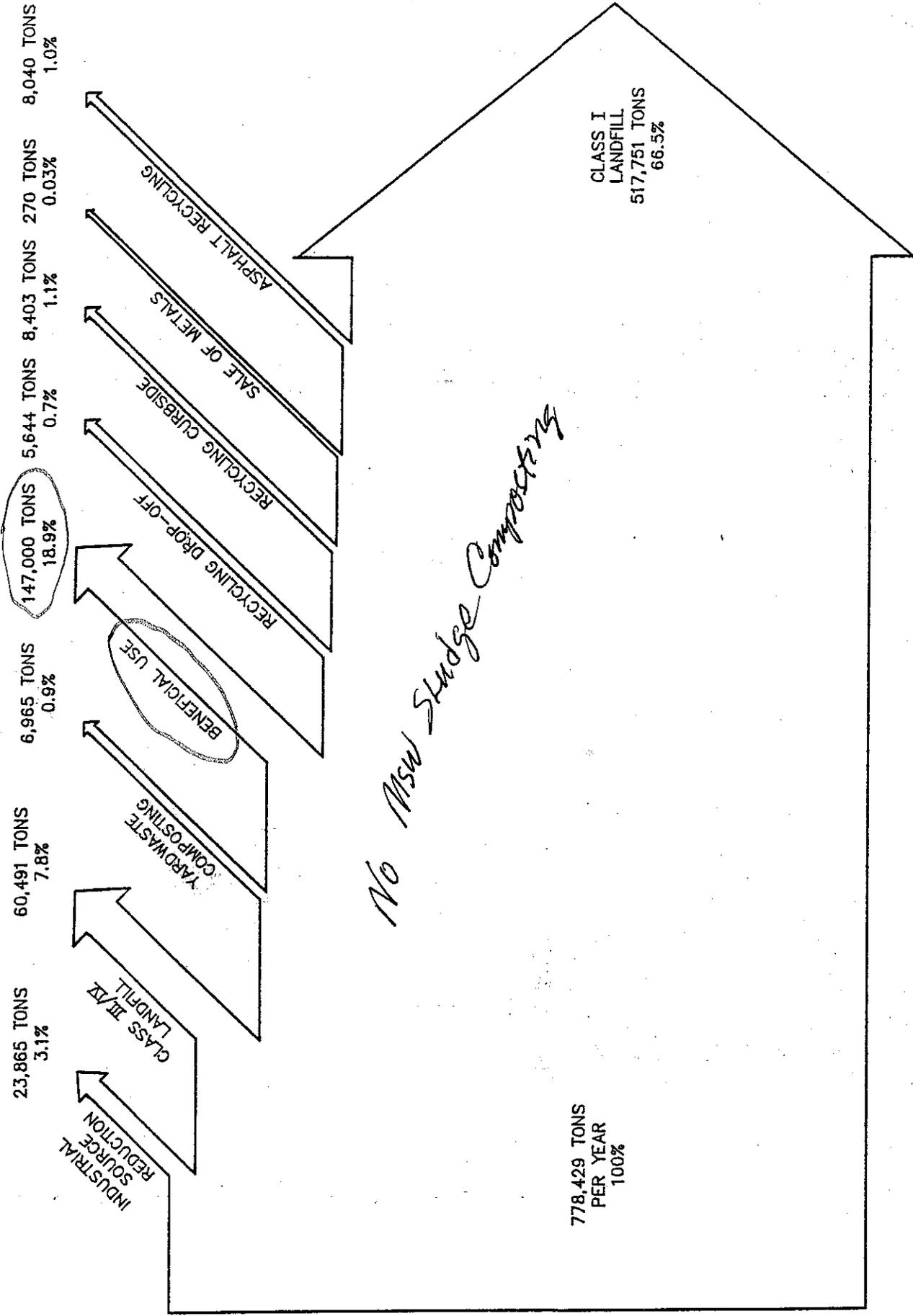
Table VII-25: RDF Characteristics and BTU Content

Southeast Tennessee Development District
RDF Content and Higher Heating Value Calculation

	% of		Pounds	Pounds	Moisture & Ash Free BTU/lb	BTU per lb RDF	Ash Content	Pounds Ash per lb RDF	
	Waste Stream	Percent Removed	Removed per 100 lbs of of MSW	Remaining per 100 lbs of of MSW					Percent
Office Paper	6.5%	10.0%	0.7	5.9	9.7%	7,860	764	8.2%	0.5
Newsprint	8.5%	10.0%	0.9	7.7	12.7%	8,600	1,093	1.4%	0.1
Mixed Paper	18.0%	10.0%	1.8	16.2	26.9%	8,055	2,168	5.4%	0.9
Clear Glass	5.0%	78.8%	3.9	1.1	1.8%	0	0	98.0%	1.0
Amber Glass	0.9%	78.8%	0.7	0.2	0.3%	0	0	98.0%	0.2
Green Glass	1.1%	78.8%	0.9	0.2	0.4%	0	0	98.0%	0.2
Bi-Metal Cans	7.0%	81.2%	5.7	1.3	2.2%	0	0	97.0%	1.3
Aluminum Cans	1.5%	57.1%	0.9	0.6	1.1%	0	0	98.0%	0.6
HDPE	2.0%	65.0%	1.3	0.7	1.2%	18,000	209	2.0%	0.0
PET	2.0%	65.0%	1.3	0.7	1.2%	18,000	209	2.0%	0.0
Other Plastic	5.0%	0.0%	0.0	5.0	8.3%	16,000	1,329	2.0%	0.1
Food Scraps	9.0%	46.2%	4.2	4.8	8.0%	10,100	813	4.5%	0.2
Textiles	4.0%	10.7%	0.4	3.6	5.9%	8,300	493	2.5%	0.1
Tires/Reusable	1.3%	85.0%	1.1	0.2	0.3%	14,900	48	6.5%	0.0
Yard Waste	13.0%	75.0%	9.8	3.3	5.4%	8,600	464	5.0%	0.2
Wood Debris	5.0%	75.0%	3.8	1.3	2.1%	8,000	166	1.0%	0.0
Nonferrous	0.5%	99.2%	0.5	0.0	0.0%	0	0	98.0%	0.0
OBW	1.0%	95.0%	1.0	0.1	0.1%	----	0		0.0
OCC	5.0%	10.0%	0.5	4.5	7.5%	7,850	587	5.0%	0.2
Rubber	3.0%	12.8%	0.4	2.6	4.3%	12,600	548	10.0%	0.3
Concrete	0.1%	90.0%	0.1	0.0	0.0%	----	0		0.0
Soil	0.5%	46.2%	0.2	0.3	0.4%	3,670	16	70.0%	0.2
Ceramics	0.1%	12.8%	0.0	0.1	0.1%	0	0	98.0%	0.1
	100.0%		39.8	60.2			8,908		6.2

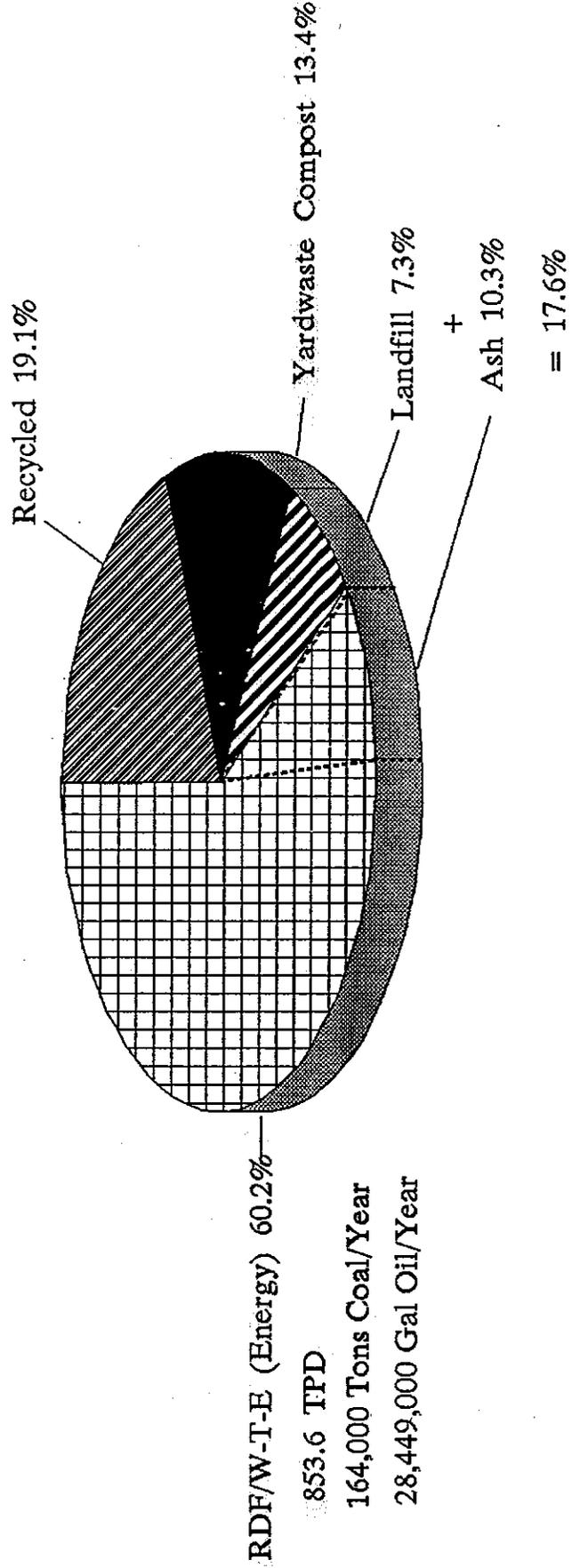
Average HHV BTU/lb, Dry Basis = 8,908
Ash = 10.3%
Moisture (estimate) = 19.0%
As-Rec'd HHV, BTU/lb = 6,296

**Figure IV-3: PROPORTIONAL FLOW DIAGRAM
SOUTHEAST TENNESSEE PLANNING REGION**



**Figure VII-9
Integrated Waste Processing System**

No MSW Sludge Composting



RDF/W-T-E (Energy) 60.2%
853.6 TPD
164,000 Tons Coal/Year
28,449,000 Gal Oil/Year

7.0 Waste-to-Energy Plant Sizing

Based on the projected annual wasteshed of the 10-county region in 1998 of 630,700 tons and from the prior section that 60.2% of the total wastestream will become RDF, this establishes the tons/year which would be combusted at a waste-to-energy facility at 379,681. This quantity divided by 365 days/year is 1040 tons/day. For purposes of sizing the waste-to-energy facility, time must be allowed for annual boiler inspections and unexpected downtime. The industry establishes this amount of time as an "availability factor" or the amount of time during the year which the facility is on-line. Most equipment manufacturers establish and guarantee this availability factor at 85%. Therefore, the 1040 tons/day figure is then divided by .85 to establish a facility size. Performing this calculation establishes the operational size of the facility at 1224 tons/day. In order to allow for some future growth in the waste stream, for purposes of this evaluation, a facility of 1300 tons/day will be used.

8.0 Waste-to-Energy Plant Criteria and Technology

There are several proven technologies for the combustion of MSW and RDF including:

- Fluidized bed combustion (circulating bed)
- Fluidized bed combustion (bubbling bed)
- Suspension and semi suspension fired combustion
- Traveling grate stokers
- Reciprocating grate stokers
- Rotary kiln combustors

All of these technologies have their advantages and disadvantages. For purposes of this evaluation we have selected a "mass-burn" type technology. This technology is designed to combust MSW in an "as-received" state as opposed to having to shred, pelletize or otherwise prepare the waste for combustion. The "mass-burn" technology provides the region with the flexibility of being able to combust processed or non-processed MSW and also is less expensive than RDF type technologies. Therefore, if for some reason it is decided not to remove certain recyclables from the waste stream, these recyclables can be processed through the waste-to-energy facility. Also, the size of this facility will allow this technology to be a "utility grade" quality.

Due to the size of this facility, the boiler plant would consist of a minimum of two (2) combustion trains accounting for 50% each of the total ton per day capacity. This would enable a high level of reliability for the supply of energy and for the combustion of waste.

9.0 Potential Energy Customers

9.1 DuPont De Nemours & Company

9.1.1 General

DuPont was initially contacted by telephone. Through this conversation it was learned that

DuPont had attempted to implement a waste-to-energy project in the 1989-1990 timeframe. According to phone conversations with DuPont, this project was abandoned after meeting public and governmental resistance.

Upon initial contact, DuPont was very interested in the possibility of a waste-to-energy project involving themselves as the primary energy customer. Based on this response and per DuPont's request, a letter was sent explaining the 10-Year Solid Waste Management Plan process and requesting information about their energy usage. This information was received and evaluated with regard to a potential waste-to-energy project to dispose of all of the 10-county region's waste while offering steam to DuPont at an amount less than what DuPont can produce the energy on their own. This evaluation is described in the following sections.

It should be noted that just prior to the completion of this evaluation, a DuPont representative contacted Draper Aden Associates in order to state that DuPont was no longer interested in pursuing such a project. Because the results of the evaluation were very close to completion, it has been included as part of this report.

9.1.2 Energy Requirements/Market

From the data provided by DuPont the following information was collected:

Steam

Conditions:	315 psig/saturated
Fuel:	Coal
Estimated Peak Steam Flow:	230,000 lb/hr
Estimated Low Steam Flow:	72,000 lb/hr
Estimated Avg Winter Flow:	190,000 lb/hr
Estimated Avg Summer Flow:	90,000 lb/hr
Operations:	24 hr/day; 365 day/yr
Loading:	2 to 3 months on peak and 2 to 3 months on low with gradual swing between the two seasons.
Estimated Annual Production:	1,189,900 mlbs
Est. Net Annual Steam Requirement ¹ :	1,011,415 mlbs

¹ Assuming 15% of Annual Production is used for feedwater heating.

Chilled Water

Conditions:	50 deg F Supply 60 deg F Return
Equipment:	6 x 1000 ton electric open drive chillers 2 x 1500 ton electric hermetic chillers
Estimated Peak Cooling:	7,800 tons
Estimated Low Cooling:	2,400 tons
Estimated Avg Winter Cooling:	3,000 tons
Estimated Avg Summer Cooling:	6,500 tons
Operations:	24 hr/day; 365 day/yr
Loading:	2 to 3 months on peak and 2 to 3 months on low with gradual swing between the two seasons.
Estimated Annual Production:	23,914,800 ton-hours (Based on highest peak and <u>assumed</u> load factor of 35%.)
Estimated Annual Steam Req'd. to drive open chillers with steam:	182,120 mlbs

This information forms the basis for the DuPont waste-to-energy analysis. The analysis assumes the supply of all of DuPont's present steam requirements. In addition to these existing steam requirements, the conversion of the six 1000 ton, open-drive chillers to steam turbine drive has also been included. Based on this, the waste-to-energy facility would supply the existing steam needs, plus the steam required to drive these chillers. Therefore, the total annual amount of steam to be sold to DuPont would be 1,193,535 mlbs.

9.1.3 In-House Production Cost

After establishing the steam load, the next step is to determine a fair market value for the steam which is to be sold. To do this, a steam production cost evaluation was completed in order to determine DuPont's present production costs. Once the production costs were determined, a discount was applied in order to give DuPont an incentive to purchase steam from a waste-to-energy facility and a credit was applied for the purchase/lease of a site from DuPont for the construction of the facility. This production cost evaluation was done as a part of this analysis, however it is NOT included with this report. This information is sensitive with regard to DuPont's competitors, therefore it was not included. The resulting steam sale price to DuPont used for this evaluation based on 1994 production costs is \$6.52 per 1000 pounds of steam.

9.1.4 Plant Location

It is assumed for purposes of this evaluation, that the waste-to-energy facility would be located on DuPont property. This enables the efficient transportation/delivery of steam to DuPont. Once again, this is the assumption for this evaluation, careful consideration must be given to a final plant location in order to minimize impact on DuPont.

9.1.5 Plant Conceptual Design

In order to take advantage of all possible revenue streams, a turbine generator has been included in the plant conceptual design. Steam will be produced by the waste-to-energy boilers at conditions of 600 psig/750 deg F, sent through a backpressure steam turbine to produce electricity for sale to TVA. The steam would then exit the turbine at conditions of 315 psig/saturated for delivery and sale to DuPont.

Figure VII-10 is a schematic mass and energy balance of the waste-to-energy plant based on the supply of steam to DuPont. This figure was developed in order to determine the steam production capabilities of the waste-to-energy facility and is a basis for O & M and sales information included in the tables and proformas addressing DuPont as an energy customer.

Figure VII-11 is a conceptual plant layout in both a plan and cross-sectional view. Referring to this figure, the RDF would be received in the tipping floor area of the plant. Then the RDF would be dumped into the storage pit. From here, an overhead crane is used to pick up the RDF and deposit it into the charging hopper. The RDF falls through the hopper and onto the grates. Here the RDF is ignited and progresses through the furnace portion of the combustion unit. The heat generated by the combustion of the RDF travels upward into the boiler section of the unit. It is at this point that the water is heated and turned into steam. The steam then exits the boiler. The remaining gases pass through the "back end" of the combustion unit and into a gas scrubbing unit. This unit is designed to remove acids from the flue gas. After passing through the scrubber, the gases enter a fabric filter baghouse. This device is made of hundreds of filter bags which the flue gases must pass through before exiting to the atmosphere. Through this filtering unit, usually over 99% of the particles in the flue gas stream are captured and removed. From this point the flue gas exits through a stack.

Once the RDF has been sufficiently combusted, the remaining ash (called bottom ash) falls into a device which quenches the hot material with a water bath. The ash is then removed from the unit to be disposed of in a landfill facility. Particulate captured by the scrubbing unit and fabric filter is usually combined with the bottom ash for disposal. The volume of the incoming RDF is reduced by 90%+ and the weight of the incoming RDF is reduced by 60% to 75%.

9.1.6 Capital Cost

Waste-to-Energy facilities' capital cost typically run in the \$100,000 to \$150,000 per installed ton of capacity depending upon the size of the facility, type of technology, and what form

Figure VII-10
 DuPont
 1224 TPD Waste-to-Energy
 Boiler Plant Heat Balance

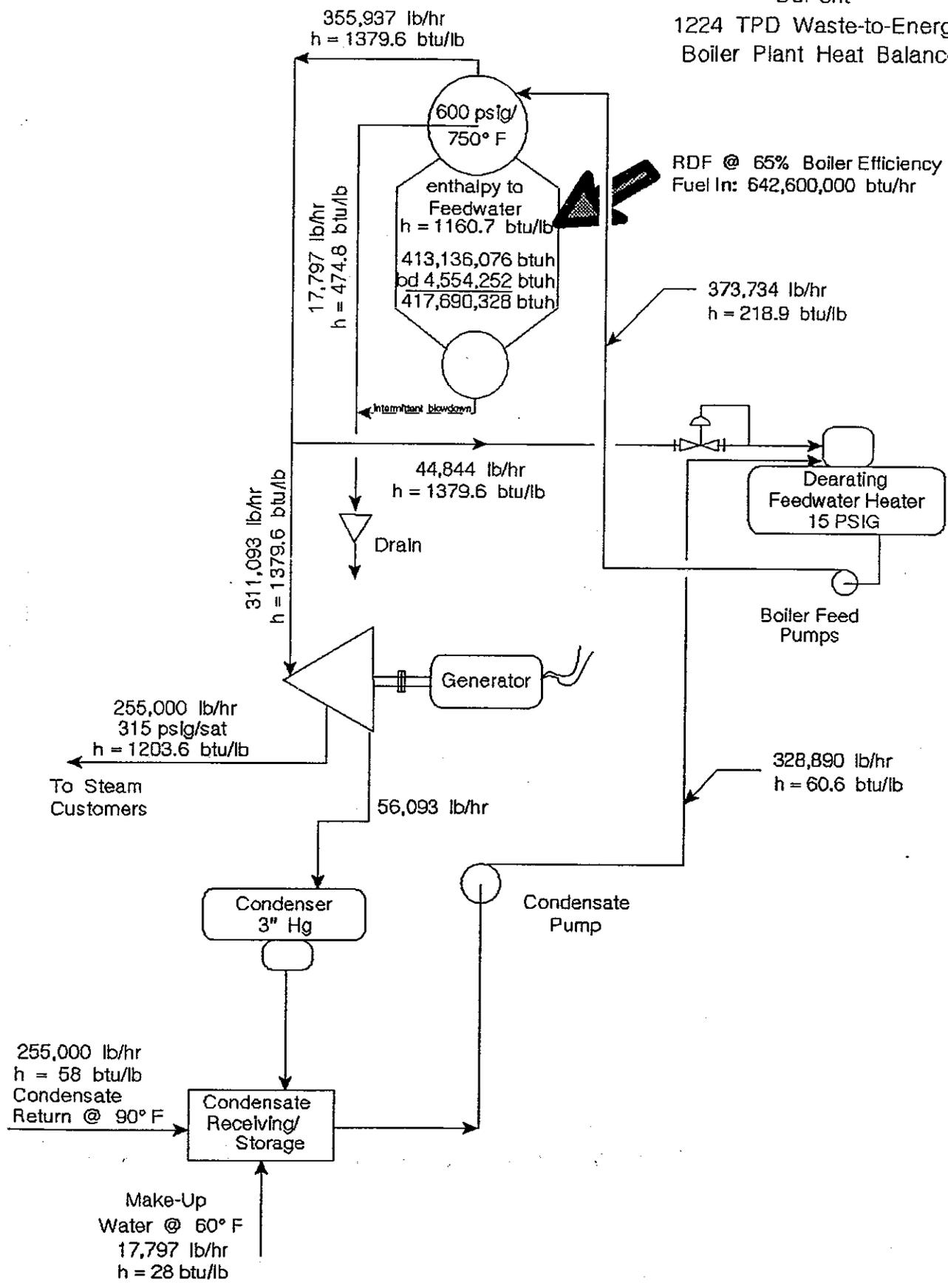


FIGURE VII -- 11A
SOLID WASTE FUELED BOILER PLANT
CROSS-SECTION

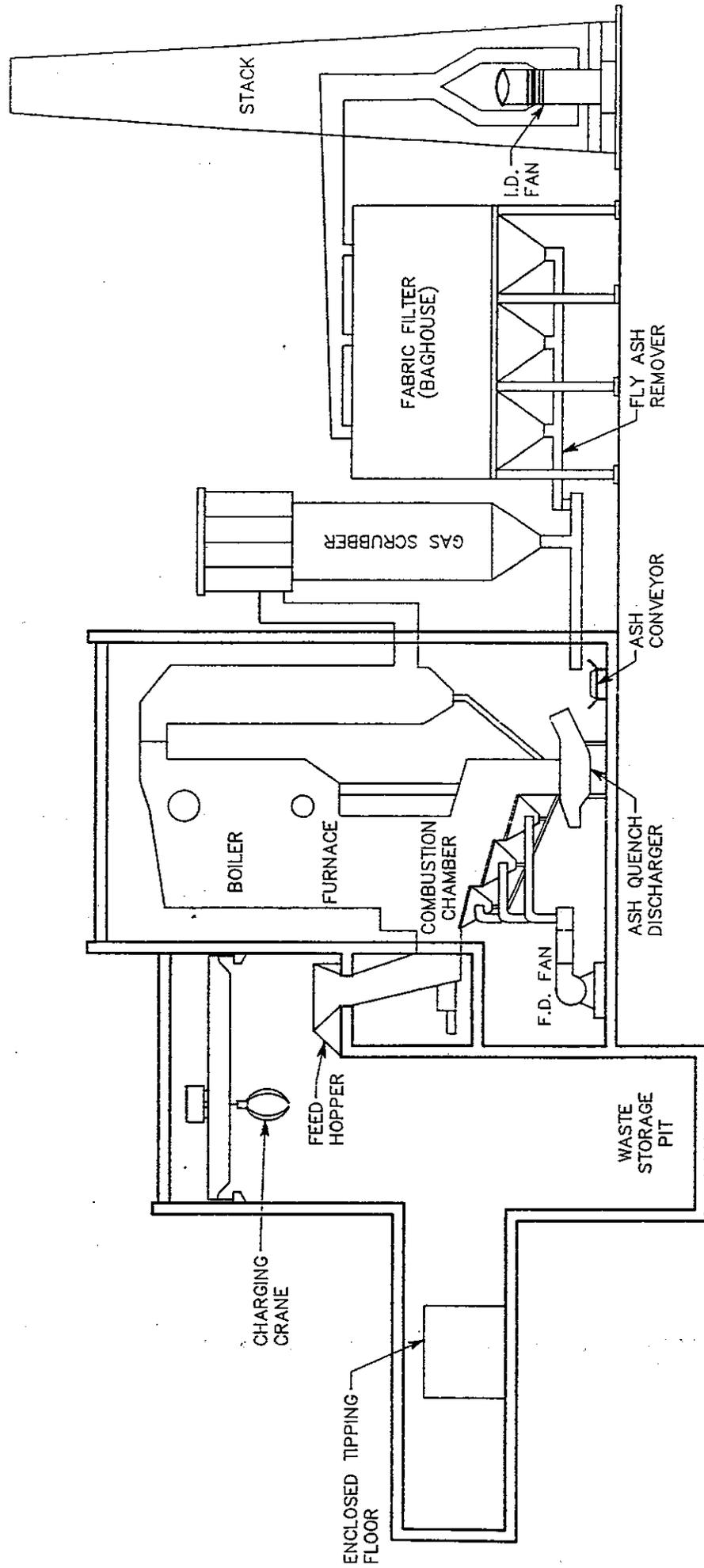
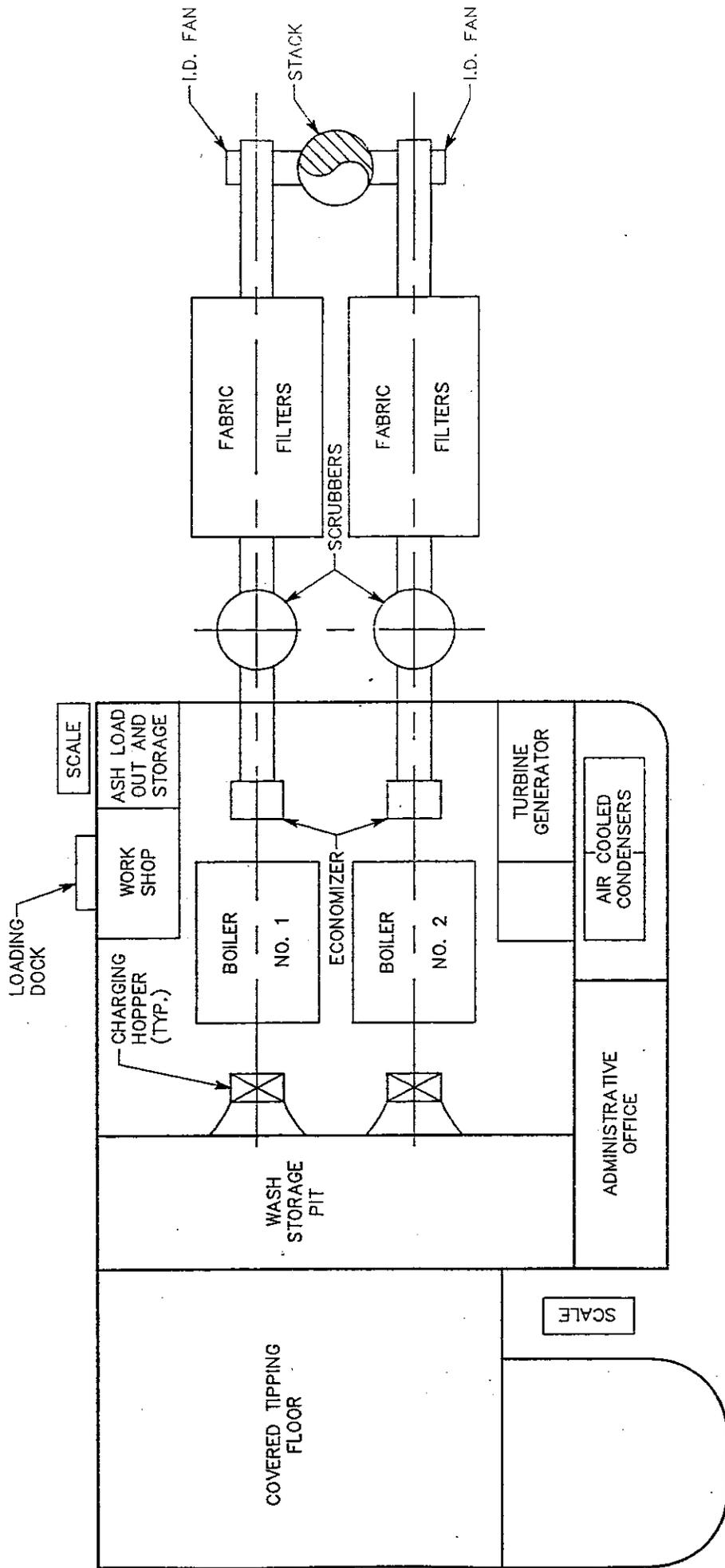


FIGURE VII - 11B
 SOLID WASTE FUELED BOILER PLANT
 PLAN VIEW



the energy produced takes. Based on past experience and discussions with equipment vendors, the \$100,000 per installed ton of capacity is used for this evaluation in determining the capital cost of the waste-to-energy facility. This figure does not include the capital cost of the steam and condensate distribution lines or the turbine-generator unit. Additional capital was added to this figure to account for these. An estimated capital cost summary is included in Table VII-26.

This pricing assumes that the project were developed based on a standard design/bid/construct approach. This method involves the counties and municipalities maintaining full control over the project. The counties and municipalities would hire consultants to perform the design and engineering of the facility and individual contracts would be let for the different components of the facility. This method offers the most economical pricing for the region.

Other procurement approaches include "turn-key" and "full service". With these methods, contracts would be let between the municipalities/counties and a "turn-key" vendor. This vendor would then be responsible for the design and construction of the facility (and in the case of full service vendors, operations also). These methods offer advantages with regard to guarantees, but at a higher capital cost (and operating cost if a full service vendor is selected). Therefore, the advantages of these methods should be compared with the added expense involved.

9.1.7 Operating and Maintenance Cost

Table VII-27 presents a summary of the operating costs associated with serving the steam requirements of DuPont. This table is supported by Exhibits A through I, which give a more detailed breakdown of the summary's itemized costs. These costs were developed based on the plant being operated and managed by the local governments through an Authority. As with procurement methods, other types of plant operation can be investigated (such as operation by private or "full service" vendors as described in the previous section) and there are advantages to these operational methods, however generally, costs are much higher with these approaches.

Table VII-26
 DuPont
 Waste-to-Energy Plant Cost Estimate
 1300 TPD of 6300 BTU/LB RDF
 600 psig/750 deg F

Capital Cost Estimate

Assuming a total capital cost of \$100,000 per installed ton of capacity:

	\$100,000 x 1300 =	\$130,000,000
Extraction Turbine Generator Set		\$1,250,000
Conversion of open drive electric chillers to turbine drives: 6 x 900 hp each	Estimated Total	\$250,000
Distribution Line Capital Cost: (Assume above ground installation)		
Assume steam line is to be buried; 100 ft of 14" line @ \$350/ft		\$350,000
Assume condensate line is to be buried; 1000 ft of 6" line @ \$210/ft		<u>\$210,000</u>
	Sub-Total	<u>\$560,000</u>
TOTAL		\$132,060,000

DuPont
O & M COST
1300 TPD RDF
WASTE-TO-ENERGY PLANT

SUMMARY

EXHIBIT

Annual Steam Quantity, net to cust., mlbs	1,193,535	A
Total Gross Steam, mlbs/yr	2,650,307	A
<u>Annual Cost of Steam Production</u>		
1. Labor, O & M	\$450,780	B
2. Fuel	\$36,000	C
3. Maintenance, Repair & Replacement	\$2,706,600	D
4. Electricity	\$496,868	E
5. Water & Sewer	\$32,019	F
6. Water Treatment \$0.11/mlb stm.	\$291,534	
7. Limestone	\$462,422	G
8. Ash Disposal, incl. elsewhere	n.a.	
9. Distribution O & M	\$5,595	I
Sub-Total, Steam Production Cost	\$4,481,818	
<u>Annual General & Administrative Cost</u>		
10. Salaries	\$131,400	H
11. Outside Services	\$30,000	est.
12. Office Supplies	\$5,000	est.

DuPont

Annual General & Administrative Cost (continued)

13. Insurance	\$298,100	est.
14. Vehicles, Lease, Fuel, Maint., Insur.	\$30,000	est.
15. Other	---	est.
Sub-Total G & A	<u>\$494,500</u>	
TOTAL ANNUAL O & M EXPENSES	\$4,976,318	

DuPont

DuPont
O & M COST
WASTE-TO-ENERGY PLANT

EXHIBIT A
STEAM QUANTITY ANALYSIS

Design Capacity; TPD	1300
Operating Capacity; TPD	1224
HHV of RDF, btu/lb	6300
RDF, lbs/hr	102,000
Design Steam Conditions	600 psig/750 deg
Enthalpy of Steam, btu/lb	1379.6
Design FW Temp, deg F	250
Design Make-Up Water Temp., deg F	60
Enthalpy of Make-Up Water, btu/lb	28
Design Stack Temp., deg F	375
Boiler effcy., %	65
Heat to FW, btu/lb	1160.7
 <u>BASED ON OPERATING CAPACITY:</u>	
Gross Steam Generated, lbs/hr	355,937
Steam to FW Heating, lbs/hr	44,844
Net Steam Output, lbs/hr	311,093
Steam to Turbine Generator, lbs/hr	311,093
Extraction Steam to Customer @ 315 psig/sat, lbs/hr	255,000
Steam to Condenser @ 3" Hg	56,093
Annual Steam Available, mlbs (based on 85% availability)	
Gross Output	2,650,307
Net to Customer	1,193,535
Annual Steam Sales, mlbs	1,193,535

DuPont.A

DuPont
O & M COST
WASTE-TO-ENERGY PLANT

EXHIBIT B
LABOR COST

	STAFFING PER SHIFT				ANNUAL RATE EA.	OVER HEAD FACT.	OVER TIME FACT.	TOTAL	
	<u>1</u>	<u>2</u>	<u>3</u>	<u>SWING</u> <u>TOTAL</u>					
Operations Supervisor	1			1	\$27,500	1.2	1.1	\$36,300	
Shift Supervisor/Operator	1	1	1	1	4	\$22,500	1.2	1.1	\$118,800
Equipment Operator	1	1	1	1	4	\$20,000	1.2	1.1	\$105,600
Crane Operator	1	1	1	1	4	\$20,000	1.2	1.1	\$105,600
Elect., Inst. Tech	1			1	\$20,000	1.2	1.1	\$26,400	
Mechanic/Welder	1			1	\$20,000	1.2	1.1	\$26,400	
Maintenance, Repair	included in exhibit D								
Driver	2			2	\$12,000	1.2	1.1	\$31,680	
TOTAL LABOR COST	8	3	3	3	17			\$450,780	

Basis: Owned & Operated by a Solid Waste Authority

DuPont.B

DuPont
O & M COST
WASTE-TO-ENERGY PLANT

EXHIBIT C
FUEL COST

Fuel for Start-Up	Nat. Gas
Number of Start-Ups/yr	2 units 8 starts
Hours Fuel Req'd/Start	4
Btu/Hr Input-Design	642.6 mm
Btu/Hr Start-Up (1/2 design)	321.3 mm
Cost/mmbtu	\$3.50
Cost/yr = 8 starts x 4 hrs x mmbtuh x \$3.50/1,000,000 btu	\$36,000

DuPont.C

DuPont
O & M COST
WASTE-TO-ENERGY PLANT

EXHIBIT D
MAINTENANCE COST

From 1990 International District Heating and Cooling Association Statics Report

<u>Company #</u>	<u>1990 Steam Sendout 1,000,000 BTU</u>	<u>1990 Plant Maintenance Cost (\$000)</u>	<u>Cost per mmBTU or 1000 Lb Steam</u>
18	2,325,337	\$3,136	\$1.35
19	7,378,440	\$4,700	\$0.64
32	1,406,400	\$3,447	\$2.45
36	297,960	\$240	\$0.81
38	1,843,519	\$785	\$0.43
56	4,509,397	\$2,035	\$0.45
68	1,113,500	\$955	\$0.86
69	504,510	\$375	\$0.74
74	478,800	\$272	\$0.57
86	3,268,188	\$470	\$0.14
96	108,329	\$13	\$0.12
107	40,846,800	\$6,798	\$0.17
112	609,600	\$93	\$0.15
117	630,000	\$495	\$0.79
118	203,534	\$218	\$1.07
119	113,049	\$114	\$1.01
123	526,223	\$384	\$0.73
125	1,330,608	\$1,143	\$0.86
		Average =	\$0.74

Index 1990 to 199 1.10 x \$0.74 = \$0.82

NOTE: All survey respondents did not provide data. Adjust for higher maintenance cost associated with RDF handling and combustion:

	\$0.82 x 1.25 adjust. factor	\$1.02
Mlbs Steam Produced:		2,650,307
Annual Cost:		\$2,706,600

DuPont.D

DuPont
O & M COST
WASTE-TO-ENERGY PLANT

EXHIBIT E
COST OF ELECTRICITY

<u>Boiler Feed Pumps</u>	
GPM	747
HEAD, psig	635
HP @ 65% effcy	426
KW = .746 x HP/.95 effcy	334
Annual Consumption (85% l.f.), KWH	3,445,048
<u>Forced Draft Fan</u>	
HP	125
KW	98
Annual Consumption (85% l.f.) KWH	730,884
<u>L.D. Fan</u>	
HP	500
KW	393
Annual Consumption (85% l.f.)KWH	2,923,535
<u>Condensate Pumps</u>	
GPM	657
HEAD, psig	50
HP @ 65% effcy	29
KW = .746 x HP/.95 effcy	23
Annual Consumption (85% l.f.), KWH	172,472
<u>Miscellaneous</u>	
Air Compressor (plant air & baghouse)	
KW	98
KWH	515,918
Bottom ash & fly-ash removal system (.85 l.f.)	
KW	40
KWH	297,840
Air cooled condensers (.50 l.f.)	
KW	75
KWH	328,500
Charging cranes (.55 l.f.)	
KW	30
KWH	144,540
Hydraulic unit (.45 l.f.)	
KW	40
KWH	157,680
Miscellaneous pumps (.10 l.f.)	
KW	80
KWH	70,080
HVAC system (.20 l.f.)	
KW	100
KWH	175,200
Lighting & other (.55 l.f.)	
KW	15
KWH	72,270
TOTAL ELECT. DEMAND, KW	1,326
TOTAL ELECT. CONSUMPTION, KWH	9,033,966
ANNUAL COST @ \$0.055	\$496,868
	DuPont.E

DuPont
O & M COST
WASTE-TO-ENERGY PLANT

EXHIBIT F
WATER & SEWER COST

Quantity Req'd: Make-Up, gal/yr (based on Plant Operating Capacity, 90% condensate return and 85% availability)	15,889,264
Quantity Req'd: Miscellaneous, gal/yr	120,000
Total	16,009,264
Est. cost @ \$2.00 per 1000 gal.	\$32,019
 ANNUAL TOTAL	 \$32,019

DuPont.F

SETDD Solid Waste Plan
Chapter VII
June 7, 1994

DuPont
O & M COST
WASTE-TO-ENERGY PLANT

EXHIBIT G
LIMESTONE COST

Limestone Consumption

For HCL:

$$\begin{aligned} \text{lbs/hr} &= (\text{hcl lb/hr}) (1/\text{hcl mol. wt.}) (1/2) \\ &\quad (\text{lime mol. wt.}) (2.0) \\ &= (X \text{ lbs/hr}) (1/36.5) (1/2) (74) (2) = \end{aligned} \qquad 2,819$$

For SO :

$$\begin{aligned} \text{lbs/hr} &= (\text{SO lbs/hr}) (1/\text{so mol. wt.}) (1/1) \\ &\quad (\text{lime mol. wt.}) (2.0) \\ &= X \text{ lbs/hr} (1/65) (1/1) (74) (2) = \end{aligned} \qquad 494$$

TOTAL LIME @ 100% REMOVAL, lbs/hr 3,312

@ 90% removal (.75 x X), lbs/hr 2,484

Annual Consumption, tons

$$X \text{ lbs/hr} \times 8760 \times .85 \text{ l.f./2000} = \qquad 9,248$$

ANNUAL COST @ \$50.00/ton \$462,422

DuPont.G

DuPont
O & M COST
WASTE-TO-ENERGY PLANT

EXHIBIT H
OVERHEAD SALARIES

	ANNUAL SALARY	O.H. FACT.	
Plant General Mgr.	\$50,000	1.2	\$60,000
Secretary/Admin	\$22,000	1.2	\$26,400
Finance Clerk	\$20,000	1.2	\$24,000
Scale Clerk	\$17,500	1.2	<u>\$21,000</u>
TOTAL ADMIN. SALARIES			\$131,400

Basis: Owned & Operated by a Solid Waste Authority

DuPont.H

DuPont
O & M COST
WASTE-TO-ENERGY PLANT

EXHIBIT I
DISTRIBUTION LINE MAINTENANCE

Systems with Under 10 Miles of Distribution Piping:

<u>Company #</u>	<u>Distribution O & M</u>	<u>Distribution Miles</u>	<u>Cost/Mile per Year</u>	<u>Age of System. Yrs</u>
39	\$249,300	7	\$35,614	45
69	\$417,200	6.6	\$63,212	50
74	\$122,100	9.2	\$13,272	40
96	\$72,800	4	\$18,200	?
98	\$290,000	3	\$96,667	50
117	\$175,000	8	\$21,875	20
118	\$38,300	7	\$5,471	18
119	\$17,500	3.6	\$4,861	12
123	\$29,400	5.4	\$5,444	23
125	\$276,200	7	\$39,457	40
126	\$87,600	4.2	\$20,857	19

Average O&M/Mile/Year = \$29,539

From 1990 International District Heating and Cooling Association Statics Report

For this analysis, the following criteria was used:

Size of Steam Line: 14"
Size of Condensate Return Line: 6"

	<u>Feet</u>	<u>Miles</u>	<u>Distribution Annual O&M</u>
Estimated Distance for this Evaluation (includes steam and condensate lines)	1,000	0.19	\$5,595

DuPont.I

9.2 Southern Chattanooga/Forest Hills Cemetery/Central Avenue Area

9.2.1 General

Through the energy market survey, it was discovered that there were several potential energy customers located within the same general area in southern Chattanooga. Of the companies interviewed, four expressed interest in being served by a waste-to-energy facility. These four companies are as follows:

- 1) Bunge Foods
4806 Kirkland Avenue
Chattanooga, TN.
Ralph Meisner
- 2) Chattem Chemicals
1715 West 38th Street
Ray Stevens, Vice Pres., Operations
- 3) Southern Cellulose
P.O. Box 2278
Ben Painter
- 4) Velsicol Chemical Company
4902 Central Avenue
Michael Poe, Environmental Manager

Interviews were conducted with these companies either in person or by telephone in order to establish the energy requirements/needs. Once established, this information was used to establish the viability of a waste-to-energy plant.

Of these four companies, three of them, Bunge Foods, Southern Cellulose and Velsicol Chemical are in very close proximity to one another. Chattem Chemicals, however, is somewhat removed from these three. Based on this, and upon establishment of energy requirements, it was decided to exclude Chattem Chemical from the evaluation. The waste-to-energy facility would be located close to the largest energy load and the cost associated with piping steam to Chattem would be prohibitive based on their steam usage.

The energy information from the remaining three companies was evaluated with regard to a potential waste-to-energy project to dispose of all of the 10-county region's waste while offering steam to the three companies at an amount less than what they can produce the energy on their own. Information relating to this evaluation is described in the following sections.

9.2.2 Energy Requirements/Market

From the data provided by the three companies, the following information was collected:

Bunge Foods

Steam

Conditions:	170 psig/saturated max. (requires "Food Grade" Steam for some applications.)
Fuel:	Gas; #2 oil as back-up
Estimated Peak Steam Flow:	55,000 lb/hr
Estimated Avg Winter Flow:	38,000 lb/hr
Estimated Avg Summer Flow:	28,000 lb/hr
Operations:	24 hr/day; 365 day/yr except holidays
Loading:	2 to 3 months on peak and 2 to 3 months on low with gradual swing between the two seasons.
Estimated Annual Production:	285,248 mlbs
Est. Net Annual Steam Requirement ¹ :	242,460 mlbs

Chilled Water

Conditions:	Not Known
Equipment:	1 x 850 hp electric open drive chiller 1 x 500 hp electric open drive chiller
Operations:	1st Shift - 850 hp continuous 2nd Shift - 500 hp continuous 3rd Shift - 0 hp
Estimated Annual Steam Req'd to Operate Chillers:	30,478 mlbs
Total Estimated Annual Steam Sales:	272,938 mlbs

¹ Assuming 15% of Annual Production is used for feedwater heating.

Velsicol Chemical Company

Steam

Conditions:	250 psig/saturated max.
Fuel:	Gas; #2 oil as back-up
Estimated Peak Steam Flow:	60,000 lb/hr
Estimated Avg Winter Flow:	50,000 lb/hr
Estimated Avg Summer Flow:	25,000 lb/hr
Operations:	24 hr/day; 365 day/yr
Loading:	2 to 3 months on peak and 2 to 3 months on low with gradual swing between the two seasons.
Estimated Annual Production:	325,763 mlbs
Est. Net Annual Steam Requirement ¹ :	276,899 mlbs

Chilled Water

Conditions:	Not Known
Equipment:	Have between 500 and 1000 hp of electric open drive chillers; assume 750 hp for evaluation.
Operations:	24 hr/day; 365 day/yr
Loading:	Assume 35% load factor
Estimated Annual Steam Req'd. to drive open chillers with steam:	26,145 mlbs
Total Estimated Annual Steam Sales:	303,044 mlbs

¹ Assuming 15% of Annual Production is used for feedwater heating.

Southern Cellulose Products

Steam

Conditions: 200 psig/saturated max.
Fuel: Gas
Estimated Peak Steam Flow: 100,000 lb/hr
Operations: 24 hr/day; 5-1/2 day/week avg.
Loading: Not Known
Estimated Annual Production: 434,404 mlbs
Est. Net Annual Steam Requirement¹: 369,243 mlbs

Chilled Water

None

¹ Assuming 15% of Annual Production is used for feedwater heating.

Table VII-28 and Table VII-29 summarizes the estimated annual steam sales and steam flows to these three companies.

TABLE VII-28 : Estimated Annual Steam Sales

Customer	Process Steam, mlbs	Chilling Steam, mlbs	Total Steam, mlbs
Bunge Foods	242,460	30,478	272,938
Velsicol	276,899	26,145	303,044
Southern	369,243	0	369,243
TOTALS	888,602	56,623	945,225

TABLE VII-29 : Estimated Peak Steam Flows

Customer	Process Steam, lb/hr	Chilling Steam, lb/hr	Total Steam, lb/hr
Bunge Foods	45,000	15,350	60,350
Velsicol	60,000	8,500	68,500
Southern	100,000	0	100,000
TOTALS	205,000	23,850	228,850

This information forms the basis for the Bunge Foods, Velsicol Chemical and Southern Cellulose (BVS) waste-to-energy analysis. The analysis assumes the supply of all of these three companies steam requirements along with the conversion of the open-drive chillers to steam turbine drive; the waste-to-energy facility would then also supply the steam required to drive these chillers.

9.2.3 In-House Production Cost

After establishing the steam loads, the next step is to determine a fair market value for the steam which is to be sold. To do this, a steam production cost evaluation was completed for each of the three companies in order to determine their present production costs. Once the production costs were determined, a discount was applied in order to give the companies an incentive to purchase the steam from a waste-to-energy facility. These production cost evaluations were done as a part of this report, however they are NOT included with the report. This information is sensitive with regard to the different companies' competitors, therefore it was not included. The resulting steam sales price to the three companies which was used for this evaluation based on present-day costs is as follows:

Bunge Foods: \$6.70 per 1000 pounds of steam

Velsicol Chemical: \$6.48 per 1000 pounds of steam

Southern Cellulose: \$5.79 per 1000 pounds of steam

9.2.4 Plant Location

The area which Bunge Foods, Velsicol Chemical and Southern Cellulose are located is an industrial area and there is vacant land available. It is assumed for purposes of this evaluation, that a site along Central Avenue, between Velsicol Chemical and Southern Cellulose could be purchased for the construction of the waste-to-energy facility. This enables the efficient transportation/delivery of steam to all three companies. Once again, this is the assumption for this evaluation, careful consideration must be given to a final plant location in order to minimize impact on area industries and residents.

9.2.5 Plant Conceptual Design

In order to take advantage of all possible revenue streams, a turbine generator has been included in the plant conceptual design. Steam will be produced by the waste-to-energy boilers at conditions of 600 psig/750 deg F, sent through an extraction steam turbine to produce electricity for sale to TVA. A portion of the steam (approximately 200,000 lb/hr) would be extracted from the turbine at 250 psig. This steam would be delivered for sale to Bunge Foods, Velsicol Chemical and Southern Cellulose. The remaining steam would then exit the turbine and be condensed at conditions of 3" Hg.

Figure VII-12 is a schematic mass and energy balance developed based on this scenario. This figure was developed in order to determine the steam production capabilities of the waste-to-energy facility and is a basis for O & M and sales information included in the tables and proformas addressing Bunge Foods, Velsicol Chemical and Southern Cellulose as energy customers.

Figure VII-13 is a conceptual plant layout in both a plan and cross-sectional view showing the equipment layout and RDF flow through the combustion/boiler units. Referring to this figure, the RDF would be received in the tipping floor area of the plant. Then the RDF would be dumped into the storage pit. From here, an overhead crane is used to pick up the RDF and deposit it into the charging hopper. The RDF falls through the hopper and onto the grates. Here the RDF is ignited and progresses through the furnace portion of the combustion unit. The heat generated by the combustion of the RDF travels upward into the boiler section of the unit. It is at this point that the water is heated and turned into steam. The steam then exits the boiler. The remaining gases pass through the "back end" of the combustion unit and into a gas scrubbing unit. This unit is designed to remove acids from the flue gas. After passing through the scrubber, the gases enter a fabric filter baghouse. This device is made of hundreds of filter bags which the flue gases must pass through before exiting to the atmosphere. Through this filtering unit, usually over 99% of the particles in the flue gas stream are captured and removed. From this point the flue gas exits through a stack.

Once the RDF has been sufficiently combusted, the remaining ash (called bottom ash) falls into a device which quenches the hot material with a water bath. The ash is then removed from the unit to be disposed of in a landfill facility. Particulate captured by the scrubbing unit and fabric filter is usually combined with the bottom ash for disposal. The volume of the incoming RDF is reduced by 90%+ and the weight of the incoming RDF is reduced by 60% to 75%.

9.2.6 Capital Cost

Waste-to-Energy facilities' capital cost typically run in the \$100,000 to \$150,000 per installed ton of capacity depending upon the size of the facility, type of technology, and what form the energy produced takes. Based on past experience and discussions with equipment vendors, the \$100,000 per installed ton of capacity is used for this evaluation in determining the capital cost of the waste-to-energy facility. This figure does not include the capital cost of the steam and condensate distribution lines or the turbine-generator. Additional capital

Figure VII-12
 Bunge Foods, Velsicol Chemical &
 Southern Cellulose Products
 1224 TPD Waste-to-Energy
 Boiler Plant Heat Balance

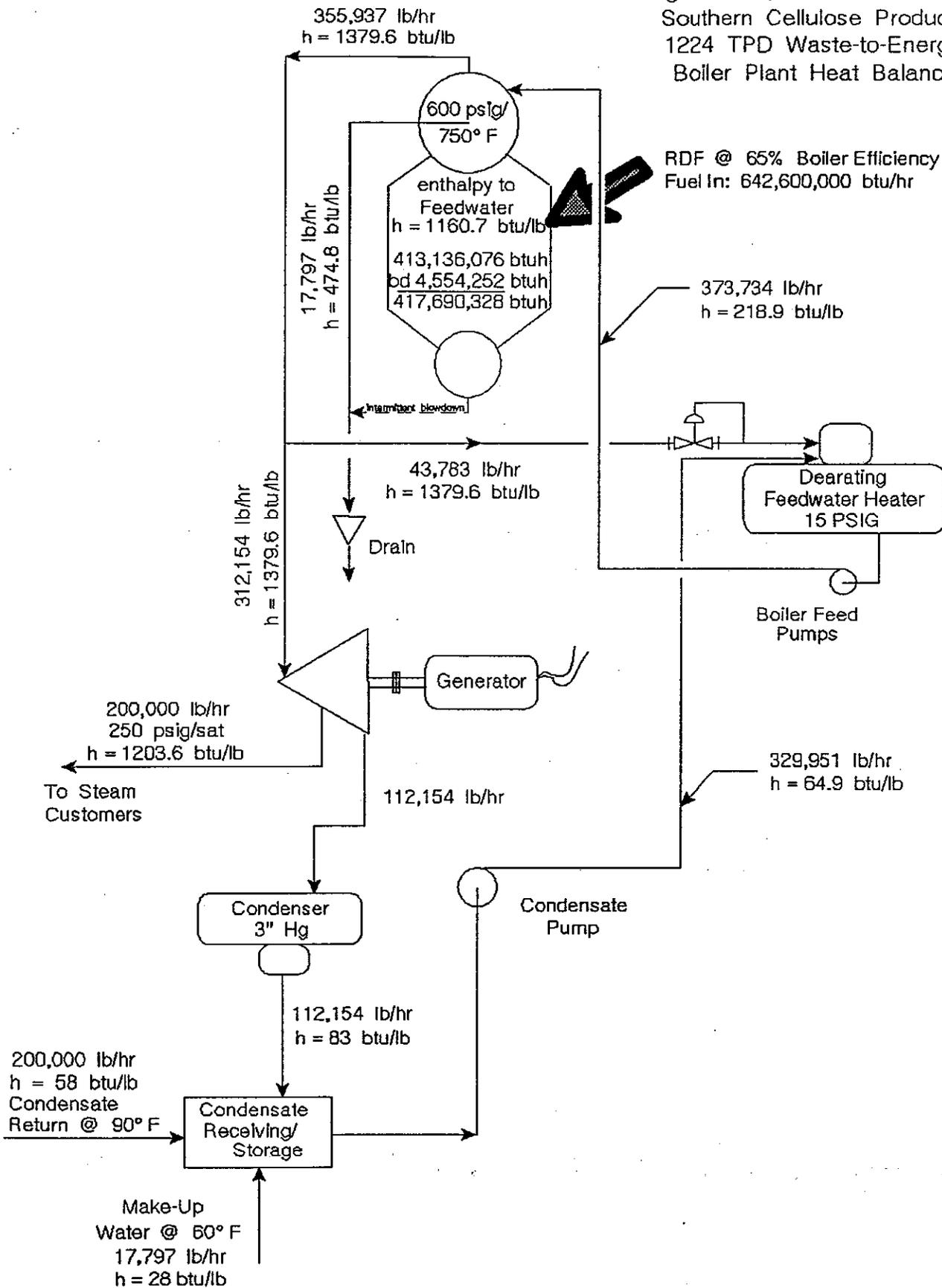


FIGURE VII - 13A
SOLID WASTE FUELED BOILER PLANT
CROSS-SECTION

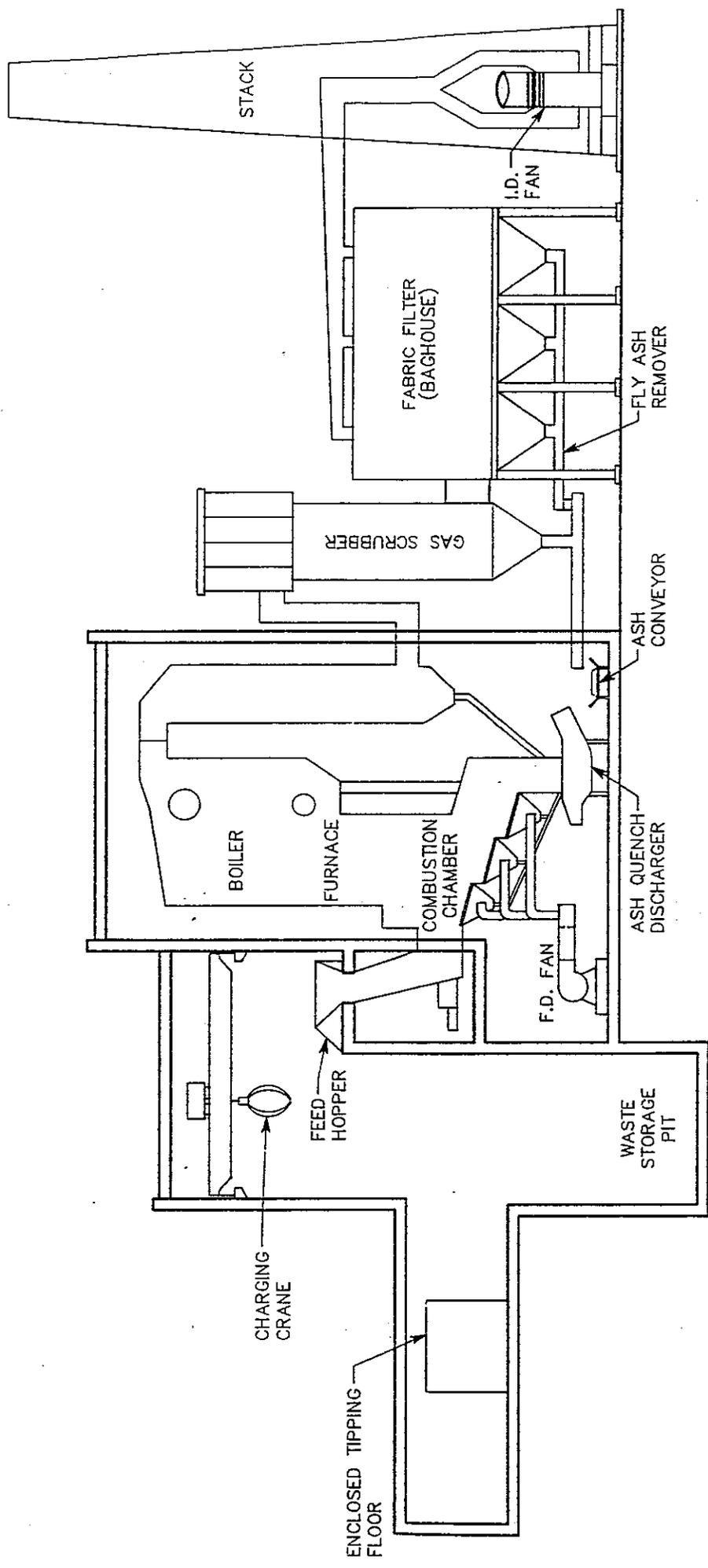
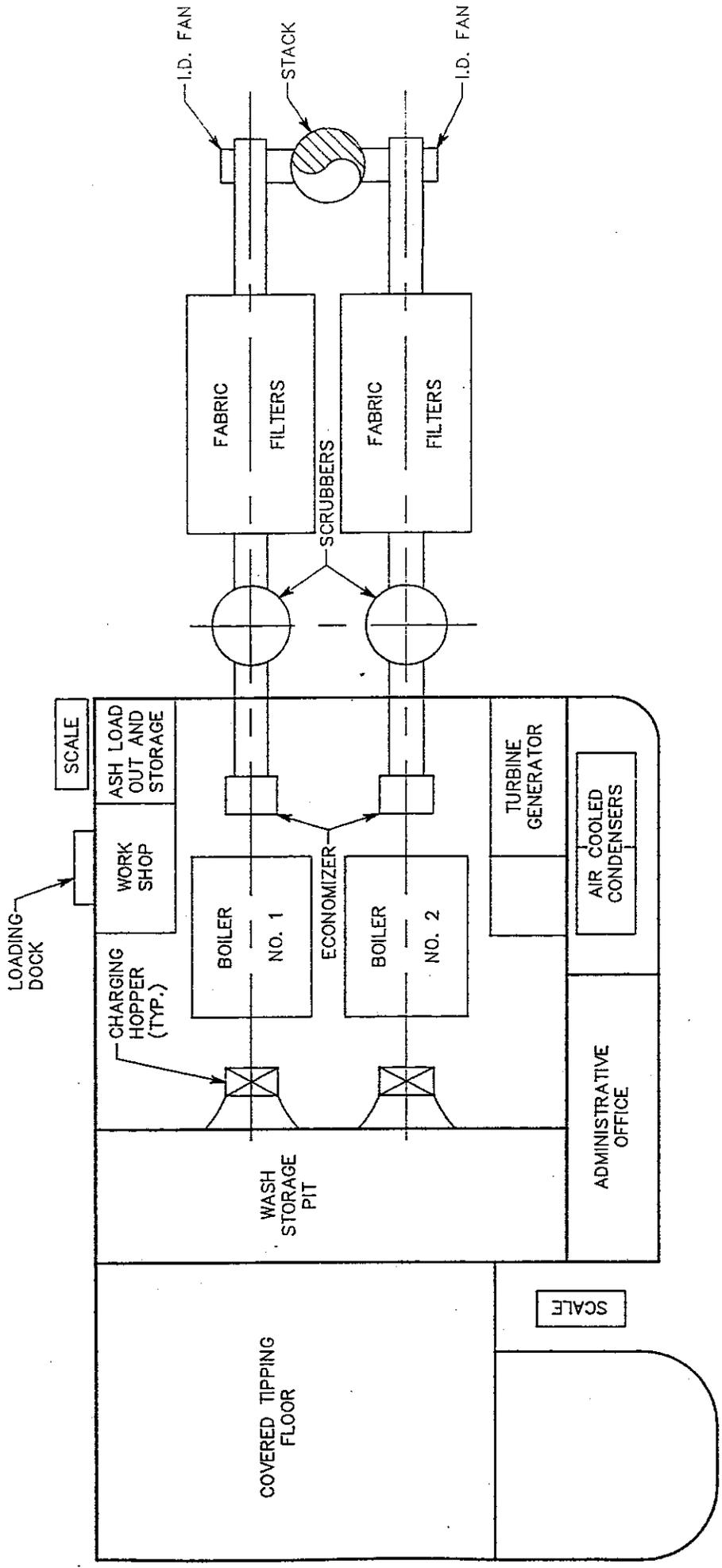


FIGURE VII - 13B
 SOLID WASTE FUELED BOILER PLANT
 PLAN VIEW



was added to this figure to account for these items. An estimated capital cost summary is included in Table VII-30.

This pricing assumes that the project were developed based on a standard design/bid/construct approach. This method involves the counties and municipalities maintaining full control over the project. The counties and municipalities would hire consultants to perform the design and engineering of the facility and individual contracts would be let for the different components of the facility. This method offers the most economical pricing for the region.

Other procurement approaches include "turn-key" and "full service". With these methods, contracts would be let between the municipalities/counties and a "turn-key" vendor. This vendor would then be responsible for the design and construction of the facility (and in the case of full service vendors, operations also). These methods offer advantages with regard to guarantees, but at a higher capital cost (and operating cost if a full service vendor is selected). Therefore, the advantages of these methods should be compared with the added expense involved.

9.2.7 Operating and Maintenance Cost

Table VII-31 presents a summary of the operating costs associated with serving the steam requirements of Bunge Foods, Velsicol Chemical and Southern Cellulose. This table is supported by Exhibits A through I, which give a more detailed breakdown of the summary's itemized costs. These costs were developed based on the plant being operated and managed by the local governments through an Authority. As with procurement methods, other types of plant operation can be investigated (such as operation by private or "full service" vendors) and there are advantages to operational methods, however generally, costs are much higher with these approaches.

Table VII-30
 Bunge Foods, Velsicol Chemical & Southern Cellulose
 Waste-to-Energy Plant Cost Estimate
 1300 TPD of 6300 BTU/LB RDF
 600 psig/ 750 deg F

Capital Cost Estimate

Assuming a total capital cost of \$100,000 per installed ton of capacity:

	$\$100,000 \times 1300 =$	\$130,000,000
Extraction Turbine Generator		\$1,500,000
Conversion of open drive electric chillers to turbine drives:		
Bunge Foods; 1 x 500 hp & 1 x 350 hp		
Velsicol Chemical; assume 2 ea. x 350 - 500 hp		
Southern Cellulose Products; none		
	Estimated Total	\$250,000
Distribution Line Capital Cost: (Assume above ground installation)		
Steam: 14" Line: 50 ft @	\$175 /ft	\$8,750
10" Line: 1100 ft @	\$140 /ft	\$154,000
8" Line: 825 ft @	\$115 /ft	\$94,875
Condensate: 6" Line: 1150 ft @	\$90 /ft	\$103,500
4" Line: 825 ft @	\$80 /ft	\$66,000
	Sub-Total	\$427,125
 TOTAL		 \$132,177,125

Bunge Foods, Velsicol Chemical & Southern Cellulose
O & M COST
WASTE-TO-ENERGY PLANT

SUMMARY

		EXHIBIT
Annual Steam Quantity, net to cust., mlbs	945,225	A
Total Gross Steam, mlbs/yr	2,650,307	A
<u>Annual Cost of Steam Production</u>		
1. Labor, O & M	\$450,780	B
2. Fuel	\$36,000	C
3. Maintenance, Repair & Replacement	\$2,706,600	D
4. Electricity	\$496,899	E
5. Water & Sewer	\$32,019	F
6. Water Treatment \$0.11/mlb stm.	\$291,534	
7. Limestone	\$462,422	G
8. Ash Disposal, incl. elsewhere	n.a.	
9. Distribution O & M	\$22,098	I
Sub-Total, Steam Production Cost	\$4,498,352	
<u>Annual General & Administrative Cost</u>		
10. Salaries	\$131,400	H
11. Outside Services	\$30,000	est.
12. Office Supplies	\$5,000	est.

BVS

Annual General & Administrative Cost (continued)

13. Insurance	\$298,100	est.
14. Vehicles, Lease, Fuel, Maint., Insur.	\$30,000	est.
15. Other	---	est.
Sub-Total G & A	<u>\$494,500</u>	
TOTAL ANNUAL O & M EXPENSES	\$4,992,852	

BVS

Bunge Foods, Velsicol Chemical & Southern Cellulose
O & M COST
WASTE-TO-ENERGY PLANT

EXHIBIT A
STEAM QUANTITY ANALYSIS

Design Capacity; TPD	1300
Operating Capacity; TPD	1224
HHV of RDF, btu/lb	6300
RDF, lbs/hr	102,000
Design Steam Conditions	600 psig/750 deg
Enthalpy of Steam, btu/lb	1379.6
Design FW Temp, deg F	250
Design Make-Up Water Temp., deg F	60
Enthalpy of Make-Up Water, btu/lb	28
Design Stack Temp., deg F	375
Boiler effcy., %	65
Heat to FW, btu/lb	1160.7
<u>BASED ON OPERATING CAPACITY:</u>	
Gross Steam Generated. lbs/hr	355,937
Steam to FW Heating, lbs/hr	43,783
Net Steam Output, lbs/hr	312,154
Steam to Turbine Generator, lbs/hr	312,154
Extraction Steam to Customer @ 250 psig/sat, lbs/hr	200,000
Steam to Condenser, lbs/hr	112,154
Annual Steam Available, mlbs (based on 85% availability)	
Gross Output	2,650,307
Net to Customer	945,225
Annual Steam Sales, mlbs	945,225

BVSA

Bunge Foods, Velsicol Chemical & Southern Cellulose
O & M COST
WASTE-TO-ENERGY PLANT

EXHIBIT B
LABOR COST

	STAFFING PER SHIFT				ANNUAL RATE EA.	OVER HEAD FACT.	OVER TIME FACT.	<u>TOTAL</u>	
	<u>1</u>	<u>2</u>	<u>3</u>	<u>SWING TOTAL</u>					
Operations Supervisor	1				1	\$27,500	1.2	1.1	\$36,300
Shift Supervisor/Operator	1	1	1	1	4	\$22,500	1.2	1.1	\$118,800
Equipment Operator	1	1	1	1	4	\$20,000	1.2	1.1	\$105,600
Crane Operator	1	1	1	1	4	\$20,000	1.2	1.1	\$105,600
Elect., Inst. Tech	1				1	\$20,000	1.2	1.1	\$26,400
Mechanic/Welder	1				1	\$20,000	1.2	1.1	\$26,400
Maintenance, Repair	included in exhibit D								
Laborer	2				2	\$12,000	1.2	1.1	\$31,680
TOTAL LABOR COST	8	3	3	3	17				\$450,780

Basis: Owned & Operated by a Solid Waste Authority

BVS.B

Bunge Foods, Velsicol Chemical & Southern Cellulose
O & M COST
WASTE-TO-ENERGY PLANT

EXHIBIT C
FUEL COST

Fuel for Start-Up	Nat. Gas
Number of Start-Ups/yr	2 units 8 starts
Hours Fuel Req'd/Start	4
Btu/Hr Input-Design	642.6 mm
Btu/Hr Start-Up (1/2 design)	321.3 mm
Cost/mmbtu	\$3.50
Cost/yr = 8 starts x 4 hrs x mmbtuh x \$3.50/1,000,000 btu	\$36,000

BVS.C

SETDD Solid Waste Plan
Chapter VII
June 7, 1994

Bunge Foods, Velsicol Chemical & Southern Cellulose
O & M COST
WASTE-TO-ENERGY PLANT

EXHIBIT D
MAINTENANCE COST

From 1990 International District Heating and Cooling Association Statics Report

<u>Company #</u>	1990 <u>Steam Sendout</u> 1,000,000 BTU	1990 Plant <u>Maintenance</u> Cost (\$000)	Cost per mmBTU or <u>1000 Lb Steam</u>
18	2,325,337	\$3,136	\$1.35
19	7,378,440	\$4,700	\$0.64
32	1,406,400	\$3,447	\$2.45
36	297,960	\$240	\$0.81
38	1,843,519	\$785	\$0.43
56	4,509,397	\$2,035	\$0.45
68	1,113,500	\$955	\$0.86
69	504,510	\$375	\$0.74
74	478,800	\$272	\$0.57
86	3,268,188	\$470	\$0.14
96	108,329	\$13	\$0.12
107	40,846,800	\$6,798	\$0.17
112	609,600	\$93	\$0.15
117	630,000	\$495	\$0.79
118	203,534	\$218	\$1.07
119	113,049	\$114	\$1.01
123	526,223	\$384	\$0.73
125	1,330,608	\$1,143	\$0.86
		Average =	\$0.74

Index 1990 to 1999 1.10 x \$0.74 = \$0.82

NOTE: All survey respondents did not provide data. Adjust for higher maintenance cost associated with RDF handling and combustion:

\$0.82 x 1.25 adjust. factor \$1.02

Mlbs Steam Produced: 2,650,307
Annual Cost: \$2,706,600

BVS.D

Bunge Foods, Velsicol Chemical & Southern Cellulose
O & M COST
WASTE-TO-ENERGY PLANT

EXHIBIT E
COST OF ELECTRICITY

<u>Boiler Feed Pumps</u>	
GPM	747
HEAD, psig	635
HP @ 65% effcy	426
KW = .746 x HP/.95 effcy	334
Annual Consumption (85% l.f.), KWH	3,445,048
<u>Forced Draft Fan</u>	
HP	125
KW	98
Annual Consumption (85% l.f.) KWH	730,884
<u>I.D. Fan</u>	
HP	500
KW	393
Annual Consumption (85% l.f.)KWH	2,923,535
<u>Condensate Pumps</u>	
GPM	659
HEAD, psig	50
HP @ 65% effcy	30
KW = .746 x HP/.95 effcy	23
Annual Consumption (85% l.f.), KWH	173,028
<u>Miscellaneous</u>	
Air Compressor (plant air & baghouse)	
KW	98
KWH	515,918
Bottom ash & fly-ash removal system (.85 l.f.)	
KW	40
KWH	297,840
Air cooled condensers (.50 l.f.)	
KW	75
KWH	328,500
Charging cranes (.55 l.f.)	
KW	30
KWH	144,540
Hydraulic unit (.45 l.f.)	
KW	40
KWH	157,680
Miscellaneous pumps (.10 l.f.)	
KW	80
KWH	70,080
HVAC system (.20 l.f.)	
KW	100
KWH	175,200
Lighting & other (.55 l.f.)	
KW	15
KWH	72,270
TOTAL ELECT. DEMAND, KW	1,326
TOTAL ELECT. CONSUMPTION, KWH	9,034,522
ANNUAL COST @ \$0.055	\$496,899
	BVS.E

Bunge Foods, Velsicol Chemical & Southern Cellulose
O & M COST
WASTE-TO-ENERGY PLANT

EXHIBIT F
WATER & SEWER COST

Quantity Req'd: Make-Up, gal/yr (based on Plant Operating Capacity, 90% condensate return and 85% availability)	15,889,264
Quantity Req'd: Miscellaneous, gal/yr	120,000
Total	16,009,264
Est. cost @ \$2.00 per 1000 gal.	\$32,019
 ANNUAL TOTAL	 \$32,019

BVS.F

Bunge Foods, Velsicol Chemical & Southern Cellulose
O & M COST
WASTE-TO-ENERGY PLANT

EXHIBIT G
LIMESTONE COST

Limestone Consumption

For HCL:

$$\begin{aligned} \text{lbs/hr} &= (\text{hcl lb/hr}) (1/\text{hcl mol. wt.}) (1/2) \\ &\quad (\text{lime mol. wt.}) (2.0) \\ &= (X \text{ lbs/hr}) (1/36.5) (1/2) (74) (2) = \end{aligned} \qquad 2,819$$

For SO :

$$\begin{aligned} \text{lbs/hr} &= (\text{SO lbs/hr}) (1/\text{so mol. wt.}) (1/1) \\ &\quad (\text{lime mol. wt.}) (2.0) \\ &= X \text{ lbs/hr} (1/65) (1/1) (74) (2) = \end{aligned} \qquad \underline{494}$$

TOTAL LIME @ 100% REMOVAL, lbs/hr 3,312

@ 90% removal (.75 x X), lbs/hr 2,484

Annual Consumption, tons

$$X \text{ lbs/hr} \times 8760 \times .85 \text{ Lf./2000} = \qquad 9,248$$

ANNUAL COST @ \$50.00/ton \$462,422

BVS.G

Bunge Foods, Velsicol Chemical & Southern Cellulose
O & M COST
WASTE-TO-ENERGY PLANT

EXHIBIT H
OVERHEAD SALARIES

	ANNUAL SALARY	O.H. FACT.	
Plant General Mgr.	\$50,000	1.2	\$60,000
Secretary/Admin	\$22,000	1.2	\$26,400
Finance Clerk	\$20,000	1.2	\$24,000
Scale Clerk	\$17,500	1.2	<u>\$21,000</u>
TOTAL ADMIN. SALARIES			\$131,400

Basis: Owned & Operated by a Solid Waste Authority

BVS.H

Bunge Foods, Velsicol Chemical & Southern Cellulose
O & M COST
WASTE-TO-ENERGY PLANT

EXHIBIT I
DISTRIBUTION LINE MAINTENANCE

Systems with Under 10 Miles of Distribution Piping:

<u>Company #</u>	<u>Distribution O & M</u>	<u>Distribution Miles</u>	<u>Cost/Mile per Year</u>	<u>Age of System, Yrs</u>
39	\$249,300	7	\$35,614	45
69	\$417,200	6.6	\$63,212	50
74	\$122,100	9.2	\$13,272	40
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98	\$290,000	3	\$96,667	50
117	\$175,000	8	\$21,875	20
118	\$38,300	7	\$5,471	18
119	\$17,500	3.6	\$4,861	12
123	\$29,400	5.4	\$5,444	23
125	\$276,200	7	\$39,457	40
126	\$87,600	4.2	\$20,857	19

Average O&M/Mile/Year = \$29,539

From 1990 International District Heating and Cooling Association Statics Report

For this analysis, the following criteria was used:

Size of Steam Line: 14", 10" & 8"
Size of Condensate Return Line: 4" & 6"

	<u>Feet</u>	<u>Miles</u>	<u>Distribution Annual O&M</u>
Estimated Distance for this Evaluatio (includes steam and condensate lines)	3,950	0.75	\$22,098

BVSI

9.3 Summary/Projections

A simplified approach to examine the financial components of a waste-to-energy facility can be summarized with the following equation:

$$\text{Tip Fee} = \text{Energy Sales} - \text{Debt Service} - \text{Operations and Maintenance}$$

Of these components, the debt service and all of the O&M costs except staffing, will vary linearly with a corresponding change in plant size. The exception to this would be the smaller plants.

9.3.1 DuPont

A proforma projecting the twenty year life of a waste-to-energy facility to serve DuPont is included in Table VII-32. This proforma provides financial projections including capital cost, operations, maintenance, ash/RDF overflow disposal and revenue from electricity and steam sales. The result of this proforma shows the disposal or tipping fees per ton of MSW. The proforma shown does not account for the transportation costs associated with getting the MSW to the area recycling/RDF facilities and then transfer to the waste-to-energy plant. This information is developed earlier in this chapter. In viewing Table VII-32, it can be seen that for the waste-to-energy portion of this evaluation, the tip fee at the door of the waste-to-energy facility ranges from a high of approximately \$27.50 in the first year, to a low of just under \$12 in the year 2017. Obviously, the results of this proforma are based on final energy sales negotiations/contracts with DuPont and TVA, resulting in pricing equal to that used in this evaluation.

As mentioned earlier, any plant size increases or expansion possibilities due to an increase in the region's wasteshed would have to be addressed and justified as the circumstances arise.

9.3. Bunge Foods, Velsicol Chemical and Southern Cellulose

A proforma projecting the twenty year life of a waste-to-energy facility to serve Bunge Foods, Velsicol Chemical and Southern Cellulose is included in Table VII-33. This proforma provides financial projections including capital cost, operations, maintenance, ash/RDF overflow disposal and revenue from electricity and steam sales. The result of this proforma shows the disposal or tipping fees per ton of MSW. The proforma shown does not account for the transportation costs associated with getting the MSW to the area recycling/RDF facilities and then transfer of the RDF to the waste-to-energy plant. This information is developed earlier in this chapter. In viewing Table VII-33, it can be seen that for the waste-to-energy portion of this evaluation, the tip fee at the door of the waste-to-energy facility ranges from a high of approximately \$31.50 in the first year, to a low of approximately \$21 in the year 2017. Obviously, the results of this proforma are based on final energy sales negotiations/contracts with Bunge Foods, Velsicol Chemical, Southern Cellulose and TVA, resulting in pricing equal to that used in this evaluation.

TABLE VII-32: 1300 TPD RDF Waste-to-Energy Plant

E.I. DuPont Company		BOND ISSUE CALCULATION:																				
1994 Plant Capital Cost:		\$132,060,000																				
1994 Sta Price to DuPont, \$/mib:		\$6.52																				
1994 Electrical Price paid by TVA, \$/kWh:		\$0.017																				
1998 Sta Price to DuPont, \$/mib:		\$7.34																				
1994 Mibs Sold to DuPont:		1,193,535																				
1994 O & M Cost:		\$4,976,318																				
			Escalator																			
			1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
MSW Generated, TPY		0.29%	630,700	630,467	630,241	628,672	630,128	631,607	633,445	635,288	637,137	638,991	640,851	642,715	644,586	646,461	648,343	650,229	652,121	654,019	655,922	657,831
RDF Available to WTE Facility, TPY			379,681	379,541	379,405	378,461	379,337	380,227	381,334	382,444	383,556	384,673	385,792	386,915	388,041	389,170	390,302	391,438	392,577	393,720	394,865	396,014
RDF Capacity of WTE Facility, TPY			403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325
RDF to Bypass WTE Facility, TPY			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ash to Landfill, TPY			39,107	39,093	39,079	38,981	39,072	39,163	39,277	39,392	39,506	39,621	39,737	39,852	39,968	40,084	40,201	40,318	40,435	40,553	40,671	40,789
Total Landfill Disposal, TPY			39,107	39,093	39,079	38,981	39,072	39,163	39,277	39,392	39,506	39,621	39,737	39,852	39,968	40,084	40,201	40,318	40,435	40,553	40,671	40,789
Steam Produced, Net, mibs			2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514
Steam Sold to DuPont, mibs		1.0%	1,193,535	1,205,470	1,217,525	1,229,700	1,241,997	1,254,417	1,266,961	1,279,631	1,292,427	1,305,352	1,318,405	1,331,589	1,344,905	1,358,354	1,371,938	1,385,657	1,399,514	1,413,509	1,427,644	1,441,920
Steam to Condenser, mibs			880,979	869,044	856,989	844,814	832,517	820,097	807,553	794,883	782,087	769,163	756,109	742,925	729,609	716,160	702,576	688,857	675,001	661,005	646,870	632,594
Steam Price to DuPont, \$/mib		3.0%	\$7.34	\$7.56	\$7.79	\$8.02	\$8.26	\$8.51	\$8.76	\$9.03	\$9.30	\$9.57	\$9.86	\$10.16	\$10.46	\$10.78	\$11.10	\$11.43	\$11.78	\$12.13	\$12.49	\$12.87
Electricity Price Paid by TVA, \$/kWh		1.0%	\$0.018	\$0.018	\$0.018	\$0.018	\$0.018	\$0.019	\$0.019	\$0.019	\$0.019	\$0.019	\$0.020	\$0.020	\$0.020	\$0.020	\$0.021	\$0.021	\$0.021	\$0.021	\$0.021	\$0.021
Approx. Electrical Generation, kWh/yr.			55,962,077	55,962,077	55,962,077	55,962,077	55,962,077	55,962,077	55,962,077	55,962,077	55,962,077	55,962,077	55,962,077	55,962,077	55,962,077	55,962,077	55,962,077	55,962,077	55,962,077	55,962,077	55,962,077	55,962,077
EXPENSES																						
Debt Service @ 7%, \$/Yr			\$14,577,036	\$14,577,036	\$14,577,036	\$14,577,036	\$14,577,036	\$14,577,036	\$14,577,036	\$14,577,036	\$14,577,036	\$14,577,036	\$14,577,036	\$14,577,036	\$14,577,036	\$14,577,036	\$14,577,036	\$14,577,036	\$14,577,036	\$14,577,036	\$14,577,036	\$14,577,036
Plant O & M, \$/Yr		3.0%	\$5,600,890	\$5,768,916	\$5,941,984	\$6,120,243	\$6,303,851	\$6,492,966	\$6,687,755	\$6,888,388	\$7,095,040	\$7,307,891	\$7,527,127	\$7,752,941	\$7,985,530	\$8,225,095	\$8,471,848	\$8,726,004	\$8,987,784	\$9,257,417	\$9,535,140	\$9,821,194
Total Plant Expenses, \$/Yr			\$20,177,926	\$20,345,953	\$20,519,020	\$20,697,280	\$20,880,887	\$21,070,003	\$21,264,792	\$21,465,424	\$21,672,076	\$21,884,927	\$22,104,164	\$22,329,978	\$22,562,566	\$22,802,132	\$23,048,885	\$23,303,040	\$23,564,820	\$23,834,454	\$24,112,176	\$24,398,230
REVENUES																						
Electrical Energy Sold, \$/Yr			\$989,984	\$999,884	\$1,009,883	\$1,019,982	\$1,030,191	\$1,040,483	\$1,050,888	\$1,061,397	\$1,072,011	\$1,082,731	\$1,093,558	\$1,104,494	\$1,115,539	\$1,126,694	\$1,137,961	\$1,149,341	\$1,160,834	\$1,172,443	\$1,184,167	\$1,196,009
Steam Sold to DuPont, \$/Yr			\$8,758,539	\$9,111,508	\$9,478,702	\$9,860,693	\$10,258,079	\$10,671,480	\$11,101,540	\$11,548,932	\$12,014,354	\$12,498,533	\$13,002,224	\$13,526,213	\$14,071,320	\$14,638,394	\$15,228,321	\$15,842,023	\$16,480,456	\$17,144,619	\$17,835,547	\$18,554,319
Total Plant Revenues, \$/Yr			\$9,748,523	\$10,111,392	\$10,488,584	\$10,880,675	\$11,288,261	\$11,711,963	\$12,152,429	\$12,610,330	\$13,086,365	\$13,581,264	\$14,095,782	\$14,630,707	\$15,186,859	\$15,765,088	\$16,366,283	\$16,991,364	\$17,641,290	\$18,317,061	\$19,019,714	\$19,750,328
Plant Shortfall, \$/Yr			\$10,429,403	\$10,234,561	\$10,030,436	\$9,816,605	\$9,592,626	\$9,358,040	\$9,112,363	\$8,855,095	\$8,585,710	\$8,303,663	\$8,008,382	\$7,699,270	\$7,375,707	\$7,037,043	\$6,682,602	\$6,311,677	\$5,923,530	\$5,517,393	\$5,092,462	\$4,647,902
TIPPING FEES, \$/Ton:																						
MSW Combusted:			\$27.47	\$26.97	\$26.44	\$25.94	\$25.29	\$24.61	\$23.90	\$23.15	\$22.38	\$21.59	\$20.76	\$19.90	\$19.01	\$18.08	\$17.12	\$16.12	\$15.09	\$14.01	\$12.90	\$11.74
MSW Generated:			\$16.54	\$16.23	\$15.92	\$15.61	\$15.22	\$14.82	\$14.39	\$13.94	\$13.48	\$12.99	\$12.50	\$11.98	\$11.44	\$10.89	\$10.31	\$9.71	\$9.08	\$8.44	\$7.76	\$7.07

TABLE VII-33: 1300 TPD RDF Waste-to-Energy Plant

Bunge Foods, Velsicol Chemical and Southern Cellulose

1994 Plant Capital Cost:	\$132,177,125
1994 Steam Price to Bunge Foods, \$/mlb:	\$6.70
1994 Steam Price to Velsicol Chemicals, \$/mlb:	\$6.48
1994 Steam Price to Southern Cellulose, \$/mlb:	\$5.79
1994 Electrical Price paid by TVA, \$/kWh:	\$0.017
1998 Steam Price to Bunge Foods, \$/mlb:	\$7.55
1998 Steam Price to Velsicol Chemicals, \$/mlb:	\$7.30
1998 Steam Price to Southern Cellulose, \$/mlb:	\$6.51
1994 Mlbs Sold to Bunge Foods	272,938
1994 Mlbs Sold to Velsicol Chemical	303,044
1994 Mlbs Sold to Southern Cellulose	369,243
1994 O & M Cost:	\$4,992,852

BOND ISSUE CALCULATION:

Escalation to Mid-Construction (1996):	\$140,226,712	3.00% per Year
Interest During Construction:	\$9,252,399	7.00% for 1 Year
Capital Reserve Fund:	\$2,643,543	2.00%
Bond Financing Cost:	\$449,402	0.34%
Bond Underwriter's Discount:	\$1,982,637	1.50%
Total Bond Issue:	\$154,554,712	

	Escalator	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
MSW Generated, TPY	0.29%	630,700	630,467	630,241	628,672	630,128	631,607	633,445	635,288	637,137	638,991	640,851	642,715	644,586	646,461	648,343	650,229	652,121	654,019	655,922	657,831
RDF Available to WTE Facility, TPY		379,681	379,541	379,405	378,461	379,337	380,227	381,334	382,444	383,556	384,673	385,792	386,915	388,041	389,170	390,302	391,438	392,577	393,720	394,865	396,014
RDF Capacity of WTE Facility, TPY		403,525	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325	403,325
RDF to Bypass WTE Facility, TPY		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ash to Landfill, TPY		39,107	39,093	39,079	38,981	39,072	39,163	39,277	39,392	39,506	39,621	39,737	39,852	39,968	40,084	40,201	40,318	40,435	40,553	40,671	40,789
Total Landfill Disposal, TPY		39,107	39,093	39,079	38,981	39,072	39,163	39,277	39,392	39,506	39,621	39,737	39,852	39,968	40,084	40,201	40,318	40,435	40,553	40,671	40,789
Steam Produced, Net, mlbs		2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514	2,074,514
Steam Sold to Bunge Foods, mlbs	1.0%	272,938	275,667	278,424	281,208	284,020	286,861	289,729	292,626	295,553	298,508	301,493	304,508	307,553	310,629	313,735	316,873	320,041	323,242	326,474	329,739
Steam Sold to Velsicol, mlbs	1.0%	303,044	306,074	309,135	312,227	315,349	318,502	321,687	324,904	328,153	331,435	334,749	338,097	341,478	344,892	348,341	351,825	355,343	358,896	362,483	366,110
Steam Sold to Southern, mlbs	1.0%	369,243	372,935	376,665	380,431	384,236	388,078	391,959	395,878	399,837	403,836	407,874	411,953	416,072	420,233	424,435	428,680	432,966	437,296	441,669	446,086
Steam to Condenser, mlbs		1,129,289	1,119,837	1,110,290	1,100,648	1,090,909	1,081,073	1,071,139	1,061,105	1,050,971	1,040,736	1,030,398	1,019,957	1,009,411	998,760	988,002	977,137	966,164	955,080	943,886	932,579
Steam Price to Bunge, \$/mlb	3.0%	\$7.55	\$7.77	\$8.00	\$8.25	\$8.49	\$8.75	\$9.01	\$9.28	\$9.56	\$9.85	\$10.14	\$10.44	\$10.76	\$11.08	\$11.41	\$11.76	\$12.11	\$12.47	\$12.85	\$13.23
Steam Price to Velsicol, \$/mlb	3.0%	\$7.30	\$7.52	\$7.74	\$7.97	\$8.21	\$8.46	\$8.71	\$8.98	\$9.24	\$9.52	\$9.81	\$10.10	\$10.40	\$10.72	\$11.04	\$11.37	\$11.71	\$12.06	\$12.42	\$12.80
Steam Price to Southern, \$/mlb	3.0%	\$6.51	\$6.71	\$6.91	\$7.12	\$7.33	\$7.55	\$7.78	\$8.01	\$8.25	\$8.50	\$8.75	\$9.02	\$9.29	\$9.57	\$9.85	\$10.15	\$10.45	\$10.77	\$11.09	\$11.42
Electricity Price Paid by TVA, \$/kWh	1.0%	\$0.018	\$0.018	\$0.018	\$0.018	\$0.018	\$0.019	\$0.019	\$0.019	\$0.019	\$0.019	\$0.020	\$0.020	\$0.020	\$0.020	\$0.020	\$0.021	\$0.021	\$0.021	\$0.021	\$0.021
Approx. Electrical Generation, kWh/yr:		89,457,274	89,457,274	89,457,274	89,457,274	89,457,274	89,457,274	89,457,274	89,457,274	89,457,274	89,457,274	89,457,274	89,457,274	89,457,274	89,457,274	89,457,274	89,457,274	89,457,274	89,457,274	89,457,274	89,457,274
<u>EXPENSES</u>																					
Debt Service @ 7%, \$/Yr		\$14,589,965	\$14,589,965	\$14,589,965	\$14,589,965	\$14,589,965	\$14,589,965	\$14,589,965	\$14,589,965	\$14,589,965	\$14,589,965	\$14,589,965	\$14,589,965	\$14,589,965	\$14,589,965	\$14,589,965	\$14,589,965	\$14,589,965	\$14,589,965	\$14,589,965	\$14,589,965
Plant O & M, \$/Yr	3.0%	\$5,619,499	\$5,788,084	\$5,961,726	\$6,140,578	\$6,324,796	\$6,514,539	\$6,709,976	\$6,911,275	\$7,118,613	\$7,332,171	\$7,552,137	\$7,778,701	\$8,012,062	\$8,252,424	\$8,499,996	\$8,754,996	\$9,017,646	\$9,288,175	\$9,566,821	\$9,853,825
Total Plant Expenses, \$/Yr		\$20,209,464	\$20,378,049	\$20,551,691	\$20,730,543	\$20,914,760	\$21,104,504	\$21,299,940	\$21,501,240	\$21,708,578	\$21,922,136	\$22,142,101	\$22,368,666	\$22,602,027	\$22,842,388	\$23,089,961	\$23,344,961	\$23,607,611	\$23,878,140	\$24,156,786	\$24,443,790
<u>REVENUES</u>																					
Electrical Energy Sold, \$/Yr		\$1,582,523	\$1,598,348	\$1,614,332	\$1,630,475	\$1,646,780	\$1,663,248	\$1,679,880	\$1,696,679	\$1,713,646	\$1,730,782	\$1,748,090	\$1,765,571	\$1,783,227	\$1,801,059	\$1,819,070	\$1,837,260	\$1,855,633	\$1,874,189	\$1,892,931	\$1,911,860
Steam Sold to Bunge, \$/Yr		\$2,059,429	\$2,142,424	\$2,228,764	\$2,318,583	\$2,412,022	\$2,509,227	\$2,610,349	\$2,715,546	\$2,824,982	\$2,938,829	\$3,057,264	\$3,180,471	\$3,308,644	\$3,441,983	\$3,580,695	\$3,724,997	\$3,875,114	\$4,031,281	\$4,193,742	\$4,362,750
Steam Sold to Velsicol, \$/Yr		\$2,211,554	\$2,300,680	\$2,393,397	\$2,489,851	\$2,590,192	\$2,694,577	\$2,803,168	\$2,916,136	\$3,033,656	\$3,155,913	\$3,283,096	\$3,415,405	\$3,553,046	\$3,696,233	\$3,845,192	\$4,000,153	\$4,161,359	\$4,329,062	\$4,503,523	\$4,685,015
Steam Sold to Southern, \$/Yr		\$2,405,413	\$2,502,351	\$2,603,196	\$2,708,105	\$2,817,242	\$2,930,776	\$3,048,887	\$3,171,757	\$3,299,579	\$3,432,552	\$3,570,883	\$3,714,790	\$3,864,496	\$4,020,235	\$4,182,251	\$4,350,795	\$4,526,133	\$4,708,536	\$4,898,290	\$5,095,691
Total Plant Revenues, \$/Yr		\$8,258,920	\$8,543,804	\$8,839,689	\$9,147,015	\$9,466,236	\$9,797,828	\$10,142,284	\$10,500,118	\$10,871,863	\$11,258,075	\$11,659,333	\$12,076,237	\$12,509,413	\$12,959,510	\$13,427,297	\$13,913,205	\$14,418,238	\$14,943,068	\$15,488,485	\$16,055,315
Plant Shortfall, \$/Yr		\$11,950,544	\$11,834,245	\$11,712,002	\$11,583,528	\$11,448,524	\$11,306,676	\$11,157,657	\$11,001,122	\$10,836,715	\$10,664,061	\$10,482,768	\$10,292,428	\$10,092,614	\$9,882,878	\$9,662,735	\$9,431,756	\$9,189,373	\$8,935,073	\$8,668,300	\$8,388,475
<u>TIPPING FEES, \$/Ton:</u>																					
MSW Combusted:		\$31.48	\$31.18	\$30.87	\$30.61	\$30.18	\$29.74	\$29.26	\$28.77	\$28.25	\$27.72	\$27.17	\$26.60	\$26.01	\$25.39	\$24.76	\$24.10	\$23.41	\$22.69	\$21.95	\$21.18
MSW Generated:		\$18.95	\$18.77	\$18.58	\$18.43	\$18.17	\$17.90	\$17.61	\$17.32	\$17.01	\$16.69	\$16.36	\$16.01	\$15.66	\$15.29	\$14.90	\$14.51	\$14.09	\$13.66	\$13.22	\$12.75

The results of both the DuPont proforma and the Bunge/Velsicol/Southern proforma are summarized in Table VII-34.

TABLE VII-34: Summary of "At the Door" Waste-to-Energy Tipping Fees

YEAR	DuPont	Bunge, Velsicol & Southern
Year 1	\$27.47	\$31.48
Year 5	\$25.29	\$30.18
Year 10	\$21.59	\$27.72
Year 15	\$17.12	\$24.76
Year 20	\$11.74	\$21.18

9.4 Operational Certification

Recent legislation requires operators of waste-to-energy facilities to be certified by meeting minimum operational experience guidelines and by passing a written operations examination. This law is presently in effect and several review courses are offered by organizations such as the American Society of Mechanical Engineers. If operations are provided by a private vendor, the burden of meeting these requirements would fall upon that vendor.

9.5 Residuals/Excess Waste

All available waste disposal technologies require some type of landfill facility and waste-to-energy is no exception. Even if the total MSW generated within the region were to be combusted, there would have to be a landfill for the ash residue. Landfill facilities would also have to be provided for materials which can not be combusted in waste-to-energy facility such as construction and demolition debris. The ash resulting from combustion for this evaluation will be in the range of 10% of the original waste quantity as shown in Figure VII-9. Combined with this, residue materials will be removed from the wastestream which will have to be landfilled as shown in Tables VII-23 and VII-24. Also, over the life of the waste-to-energy plant, it is projected that the waste stream quantity from the 10-county region will gradually increase, thus landfill disposal capacity will have to grow also. Fortunately, based on watershed projections, a waste-to-energy facility sized for 1300 tons/day will not meet its capacity within the 20 year proforma timeframe.

9.6 Permitting

There are two major phases of permitting requirements for a waste-to-energy facility. The first involves a permit to construct such a facility (construction permit), and the second involves a permit to operate once the facility has been completed (operating permit). These permits involve compliance with existing state and federal regulations concerning facility operations and effluent emissions. The facility owner would be required to obtain a permit

prior to construction which demonstrates that the plant will not exceed any of the regulatory limits once it is put into operation. Once this permit is obtained, the facility can be constructed.

The second permit is obtained after the plant is substantially complete and the facility starts combusting waste. Testing will be performed during this period in order to establish that the plant is operating within the limits designated by the construction permit.

9.7 Implementation

A multi-county undertaking such as a waste-to-energy facility would almost demand that the counties form a body which is made up of representatives from each of the local governments (such as an Authority) to oversee and/or operate and/or own the facility. If the counties opted for the design/bid/construct procurement method, this would be required for purposes of bonding and financing of such a facility. This requirement is to ensure faith and credit along with the enactment of flow control (control of the waste (fuel) stream). A long term contract (20 years) with the participating counties and municipalities for the supply of the waste and with the private industry(s) and TVA for the purchase of the energy produced would also be required. All of these agreements would be necessary if the facility is going to be owned and/or operated by the counties. If a turn-key or full service approach is pursued, the turn-key or full service vendor would have to reach agreements with the entities involved.

9.7.1 DuPont

The foremost requirement of this waste-to-energy option would be to discuss, and meet, with DuPont concerning their interest in a potential waste-to-energy project. As mentioned earlier in this chapter, upon initial contact and investigation, DuPont was very interested in a project such as this. However, just prior to the completion of this plan, DuPont stated during a phone conversation that they are NO LONGER INTERESTED in pursuing the project. Therefore, if a waste-to-energy project were to be pursued involving DuPont as the energy customer, DuPont's interest would have to be re-established.

9.7.2 Bunge Foods, Velsicol Chemical and Southern Cellulose

Similar to DuPont, the foremost requirement of this waste-to-energy option would be to meet with Bunge Foods, Velsicol Chemical and Southern Cellulose confirming their interest in such a project. As mentioned earlier in this chapter, after initial contact and investigation, all three companies (Bunge Foods, Velsicol Chemical and Southern Cellulose) were very interested in this project. Once the interest has been confirmed, discussion and negotiations should proceed regarding the steam pricing. Since the basis for the steam pricing is the in-house production cost evaluation, this normally becomes the center of attention and discussion. This process can become a very long, tedious and in-depth discussion/ negotiation and consumes a lot of time; especially when dealing with three separate energy customers/contracts. Therefore, if this option is pursued, immediate contact with the potential energy customers is recommended.

9.8 Schedule

The financial information included in the proformas assumes a waste-to-energy facility being on-line in 1998. In order for that schedule to be met, construction would have to commence in 1996. This allows a period of 1-1/2 to 2 years prior to ground breaking for negotiations, construction permitting and for a large part of the design process to take place. While it is difficult to assign time periods to negotiations and permitting, if these items are pursued late in 1994, they should be completed in early 1996.

10.0 Ash/Residue Disposal

As eluded to earlier in this chapter, the ash generated by the waste-to-energy facility would require disposal at a landfill facility. Because of the proximity of the City of Chattanooga's Summitt Landfill to the potential waste-to-energy sites, for the purposes of this evaluation, the Summitt landfill was used as the disposal site for the ash. For the initial year of operation, 1998, the ash produced from the waste-to-energy plant is projected to be 39,107 tons.

The residue created from the recycling/RDF process will also require disposal at landfill facilities. This residue consists of will fall into the category of a class II/IV landfill facility. This residue shall be disposed of at each of the four individual recycling/RDF facilities' existing landfills. The following tables project the quantities of residue waste requiring disposal at each of the four area facilities.

In review, Table VII-35 that follows summarizes the wasteshed of each of the four transportation areas along with the corresponding percentage that each area's wasteshed represents compared to the total region.

TABLE VII-35: Total Wasteshed Distribution

AREA	Wasteshed, Tons/Yr	Percentage of Total
Area 1	545,853	86.5%
Area 2	50,189	8.0%
Area 3	16,191	2.5%
Area 4	18,467	3.0%
Total	630,700	100.0%

Referring back to Table VII-24, a portion of the material removed in the recycling/RDF process is not marketed as recyclables. Table VII-36 is a summary of the items not recycled.

TABLE VII-36: Residue Items Generated at Area Recycling/RDF Facilities

ITEM	Tons/Year	Destination	Percent to Destination	Total to Destination
Yard Waste	61,809	mulched	100%	61,809
Wood Debris	23,967	mulched	100%	23,967
Tires/Reusable	6,938	WTE/landfill	100%	6,938
Concrete	631	landfill	100%	631
Soil	1,261	landfill	100%	1,261
Total	94,606			94,606

Using the information in Table VII-36, along with the percentage distribution by area in Table VII-35, the following table was developed to represent an estimate of the quantities of residue and mulch to be generated at each of the four area recycling/RDF facilities.

TABLE VII-37: Estimated Residue/Mulch Generation at Area Recycling/RDF Facilities

AREA	Mulch Tons/Yr	Landfill Tons/Yr	Ash Landfilled Tons/Yr	Total Landfilled	TPD Landfilled
Area 1	74,195	7,638	39,107	46,745	128
Area 2	6,862	706	none	706	1.9
Area 3	2,144	221	none	221	0.6
Area 4	2,573	265	none	265	0.7
Total	85,775	8,830	39,107	47,937	131

The costs associated with the disposal of these items is summarized below in Table VII-37. The assumptions used for this analysis follow the table.

TABLE VII-38: Estimated Landfill Disposal Costs

AREA	Quantity, Tons	Type Facility	Estimated Cost/Ton	Total Cost
Area 1	46,745	Class I	\$40	\$1,869,800
Area 2	706	Class III/IV	\$100	\$70,600
Area 3	221	Class III/IV	\$120	\$26,520
Area 4	265	Class III/IV	\$120	\$31,800
Total	47,937			\$1,998,720

11.0 Conclusions/Recommendations

Table VII-39 summarizes the findings of this chapter relating to an integrated waste disposal plan including the two waste-to-energy options.

TABLE VII-39: Summary of Costs

Item	Capital Cost	Debt Service ¹	O & M Costs	Mileage Costs	Total Costs	Total Cost/Ton ²
Transfer Stations	\$2,850,000	\$269,040	\$395,000	\$890,962	\$1,555,002	\$2.47
Transportation	---	---	---	\$2,716,223	\$2,716,223	\$4.31
Recycling/RDF Facilities						
Area 1	\$7,287,581	\$687,948	\$1,807,048	---	\$2,494,996	\$3.96
Area 2	\$3,657,975	\$345,313	\$1,276,700	---	\$1,622,013	\$2.57
Area 3	\$1,242,264	\$117,270	\$841,033	---	\$958,303	\$1.52
Area 4	\$1,242,264	\$117,270	\$841,033	---	\$958,303	\$1.52
Area Landfill Facilities						
Area 1 (incl. ash)	---	---	---	---	\$1,869,800	\$2.96
Area 2	---	---	---	---	\$70,600	\$0.11
Area 3	---	---	---	---	\$26,520	\$0.04
Area 4	---	---	---	---	\$31,800	\$0.05
Waste-to-Energy Options						
DuPont ³	\$154,417,758	\$14,577,036	\$5,600,890	---	\$20,177,926	\$16.54
Bunge, Velsicol & Southern ⁴	\$154,554,712	\$14,589,965	\$5,619,499	---	\$20,209,464	\$18.95
Total w/DuPont WTE Option, \$/Ton	---	---	---	---	---	\$36.05
Total w/Bunge, Velsicol & Southern WTE Option, \$/Ton	---	---	---	---	---	\$38.46

¹ Calculated at 7% over 20 Years

² Based on Total Regional Wasteshed of 630,700 Tons/Year

³ Total Cost/Ton also includes \$9,748,523 in revenue from energy sales

⁴ Total Cost/Ton also includes \$8,258,920 in revenue from energy sales

In viewing the results of the waste-to-energy proformas, Table VII-34 and Table VII-39 it appears that waste-to-energy is a viable option for the region. The integrated tipping fees

are in the \$40 per ton range initially and falling to \$30 to \$35 per ton over the life of the project (refer to proformas).

Also, in reviewing these estimates, it must be remembered that the waste-to-energy portion of the integrated system cost is based on revenue from the sale of steam. In order to have an idea as to the impact of an increase or decrease in the steam price, Table VII-40 was developed.

TABLE VII-40: Sensitivity of Steam Price on Tipping Fee

Steam Price Increase or Decrease of:	DuPont Option Tip Fee Increase/Decrease per Ton of:		Bunge, Velsicol & Southern Option Tip Fee Increase/Decrease per Ton of:	
	MSW	RDF	MSW	RDF
	\$0.25	\$0.42	\$0.71	\$0.54
\$0.50	\$0.85	\$1.41	\$1.07	\$1.77
\$0.75	\$1.27	\$2.11	\$1.60	\$2.65
\$1.00	\$1.69	\$2.81	\$2.13	\$3.54

As is demonstrated by this table, the energy revenue has a significant impact on the overall economics of the waste-to-energy integrated system. Also, the energy sales have a stabilizing effect on the tipping fee during the life of the project. By referring back to the proformas, the tipping fees based on the MSW generated within the region, fall as much as \$9.50/ton over the 20-year project life.

To summarize, waste-to-energy disposal offers some unique advantages:

- Revenue from the sale of energy stabilizes waste disposal costs
- Minimizes the amount of waste going to a landfill; reduction in volume of 90%+, in weight of 60 - 75%
- Ash produced is a stable, low risk residue which minimizes environmental impact
- Ash residue disposal is less labor/capital intensive than MSW disposal; less frequency of cover required (and thus, less cover material) and less compaction required due to the density of the ash

Based on these findings, it is concluded that waste-to-energy is a **viable option** for the region. Based on this, it is recommended that the Southeast Development Region pursue

these options in further depth by conducting a "Phase II" feasibility study. This would initially involve the verification of continued interest on the part of the industries and in-depth discussions concerning the purchase of steam. Through such discussions, more concise information could be gathered regarding the energy requirements and the subsequent sale of the steam. It is evident that waste-to-energy can offer these industries substantial savings in their production costs and at the same time offer the region an alternate to landfill disposal.

12.0 Evaluation Notes

12.1 MSW Composition

Please note that the waste quantity used for this evaluation is based on a "standard" MSW composition, excluding any special wastes, industrial wastes or sludges. One component which is disposed of at some southeastern Tennessee area landfills is sewage sludge. It is technically possible to combust sewage sludge when it is mixed with MSW or RDF, however it will have a detrimental effect on the energy produced by a waste-to-energy facility (due to the high moisture content); therefore, a higher disposal fee will be required for sewage sludge in order to offset the reduced revenue from energy sales.

12.2 Incineration Ash

Recently, the United States Supreme Court ruled that ash from a waste-to-energy facility must be tested prior to disposal in order to determine if it requires disposal under hazardous waste guidelines.^f Ash residue from waste-to-energy facilities has been tested throughout the past several years and, as a whole, it has consistently tested below toxic levels. There is little evidence to support the position that the ash from a waste-to-energy facility will require hazardous waste handling and disposal. There will be however, a nominal additional O & M cost incurred for the regular mandated testing of the ash. This cost has NOT been included in the O & M costs of this evaluation. It was not included because the guidelines for the testing frequency and methodology has not, as yet, been developed by the EPA. However, it is expected that this additional cost will be minimal.

12.3 Conclusions

This evaluation has concluded that a waste-to-energy project for the southeastern Tennessee region appears to be feasible and merits further in-depth study. A closer examination/evaluation of the most cost effective disposal means for sewage sludge can be addressed along with the costs associated with the testing of the ash from a waste-to-energy facility as part of further studies.

CHAPTER VIII
DISPOSAL CAPACITY

CHAPTER VIII
DISPOSAL CAPACITY

A. Introduction

The Solid Waste Act of 1991 states:

"Each plan submitted by a municipal solid waste region shall include [a] planned capacity assurance, including description of planned or needed facilities." [T.C.A. 68-31-815(b)(6)]

This chapter addresses the ten-year disposal capacity of the region. This involves the establishment of existing disposal capacity, required future disposal capacity and then the assurance of ten-year disposal capacity through existing facilities or needed future facilities.

B. Implementation

Tables VIII-1.1 and VIII-1.2 summarize the existing landfill facilities within each county of the region.

TABLE VIII-1.1:
Summary of Existing/Planned Landfill Operations

	Existing Class I Landfill		Qty	Name(s)	TPD (365 days/yr)	Operator	Owner	Receives		Where From	Existing Class III/IV Landfill	Planning Class III/IV Landfill
	Y	N						Out-of-County Waste	Y			
Bledsoe	Y		1	Bledsoe-Sequatchie	27	county	county	Y		Sequatchie County	N	N
Bradley	Y		1	Bradley County	150	private	county	N		-----	N	Y
Grundy	Y		1	Grundy County	35	county	county	N		-----	N	N
Hamilton	Y		2	Hamilton County	156	county	county	N		-----	N	N
				Summit	1057	City of Chatt.	City of Chatt.					
Marion	Y		1	Marion County	73	private	county	Y		surrounding counties	N	Y
McMinn	Y		2	McMinn County	137	county	county	Y		Dade County, GA	N	Y
Mcigs	N		---	-----	---	-----	-----	-----		Polk & Mcigs Co.	N	Y
Polk	N		---	-----	---	-----	-----	-----		-----	N	N
Rhea	Y		1	Rhea County	49	county	county	N		-----	N	possibly
Sequatchie	N		---	(uses Bledsoe)	---	-----	-----	-----		-----	N	N

TABLE VIII-1.2:
Summary of Existing/Planned Landfill Operations (continued)

	Name(s)	TPD (365 days/yr)	AREA (Acres)			Remaining Life, Yrs	Planned Expansion Adjacent to Existing Site	Add'l. Area (Acres)	Remote New Capacity Planned	Remote New Capacity Area	Add'l. Life, Yrs
			Permitted	Total Site	Used						
Bledsoe	Bledsoe-Sequatchie	27	24	N.A.	14	10	N	---	---	---	
Bradley	Bradley County	150	15	70	55	nil	Y	120	---	11.6	
Grundy	Grundy County	35	35	N.A.	35	nil	N	---	---	---	
Hamilton	Hamilton County	156	16	37	21+	N.A.	Y	32	---	25	
	Summit	1057	160	220	179	41	Y	209	---	13	
Marion	Marion County	73	81.5	211	approx. 10	approx. 70	Y	---	---	---	
McMinn	McMinn County	137	66	N.A.	approx. 65	N.A.	Y	N.A.	---	35	
Meigs	(uses McMinn)	---	---	---	---	---	N	---	---	---	
Polk	(uses McMinn)	---	---	---	---	---	N	---	---	---	
Rhea	Rhea County	49	N.A.	N.A.	N.A.	N.A.	Y	---	---	21	
Sequatchie	(uses Bledsoe)	---	---	---	---	---	N	---	---	---	

Tables VIII-2.1 through VIII-2.10 summarize the existing and planned capacities of each county along with the projected surplus or shortfall of capacity. Using the information from these 10 tables, a composite of the entire region's capacity is summarized in Table VIII-3.

The Southeast Tennessee Region has sufficient Class I capacity in excess of the 10 year planning period, based on the quantity of solid waste requiring disposal adjusted for population and economic growth as shown in Table III-3. The Region can control the waste flow going to the landfill since the facilities are owned and operated (except Bradley and Marion Counties) by the counties. The Region will have in excess of 1.8 million tons of available capacity at the end of the ten year planning period. The Region has the option of coordinating with neighboring counties during the ten year planning period to accept out-of-region waste as needed to offset the high cost of operating Subtitle "D" landfills.

In the event the waste flow dramatically increases during the ten year planning period, if necessary the region can proceed with the process for obtaining additional disposal capacity. If the region pursues development of a new disposal facility it will be with sufficient time to avoid a loss of service to the community at the local level. The region will annually reevaluate the capacity remaining at the landfills. At the point that five years capacity remains, the region will begin the reevaluation process for long term disposal options.

TABLE VIII-2.1**Bledsoe County Disposal Capacity Summary**

Year	DEMAND: Tons of Waste Requiring Disposal	SUPPLY: Existing & Planned Capacity	Surplus Shortfall	
			(+)	(-)
1993	5,200	42,284	37,084	
1994	5,224	37,084	31,860	
1995	5,244	31,860	27,905	1,311
1996	5,274	0		6,585
1997	5,298	0		11,883
1998	5,323	0		17,206
1999	5,348	0		22,554
2000	5,373	0		27,927
2001	5,382	0		33,309
2002	5,408	0		38,717
2003	5,433	0		44,150

NOTES:

- 1) Bledsoe County shares its landfill with Sequatchie County. Supply figures divided between Bledsoe & Sequatchie based on percent of demand.
- 2) Existing supply based on 8 years capacity remaining from information supplied by CTI Engineering.
- 3) Bledsoe/Sequatchie landfill is planning to close and NOT convert to a lined facility as required by Subtitle "D".
- 4) 1996 Tonnage shortfall from October to December of that year based on Note 3).

TABLE VIII-2.2**Bradley County Disposal Capacity Summary**

Year	DEMAND: Tons of Waste Requiring Disposal	SUPPLY: Existing & Planned Capacity	Surplus Shortfall	
			(+)	(-)
1993	58,427	718,427	660,000	
1994	60,782	660,000	599,218	
1995	61,270	599,218	537,948	
1996	61,762	537,948	476,186	
1997	62,257	476,186	413,929	
1998	62,758	413,929	351,171	
1999	63,262	351,171	287,909	
2000	63,765	287,909	224,144	
2001	64,108	224,144	160,036	
2002	64,621	160,036	95,415	
2003	65,137	95,415	30,278	

TABLE VIII-2.3
Grundy County Disposal Capacity Summary

Year	DEMAND: Tons of Waste Requiring Disposal	SUPPLY: Existing & Planned Capacity	Surplus Shortfall	
			(+)	(-)
1993	5,700	9,955	4,255	
1994	5,674	4,255		1,419
1995	5,648	0		7,067
1996	5,622	0		12,689
1997	5,596	0		18,285
1998	5,570	0		23,855
1999	5,545	0		29,400
2000	5,500	0		34,900
2001	5,488	0		40,388
2002	5,514	0		45,902
2003	5,540	0		51,442

TABLE VIII-2.4**Hamilton County Disposal Capacity Summary**

Year	DEMAND: Tons of Waste Requiring Disposal	SUPPLY: Existing & Planned Capacity	Surplus (+)	Shortfall (-)
1993	451,110	5,414,935	4,963,825	
1994	464,631	4,963,825	4,499,194	
1995	610,808	4,499,194	3,888,386	
1996	612,927	3,888,386	3,275,459	
1997	615,106	3,275,459	2,660,353	
1998	617,348	2,660,353	2,043,005	
1999	619,652	2,043,005	1,423,353	
2000	622,027	1,423,353	801,326	
2001	623,438	801,326	177,888	
2002	627,573	177,888		449,685
2003	631,776	0		1,081,461

NOTES:

- 1) Supply includes Hamilton County Landfill & Summit Landfill
- 2) The City of Chattanooga has purchased an additional 209 acres at the Summit Landfill for future landfill expansion which could have 13+ years of additional capacity.
- 3) Demand includes industrial sand waste beginning in 1995 (This quantity is recommended to be diverted under a "Beneficial Use" program)

TABLE VIII-2.5**Marion County Disposal Capacity Summary**

Year	DEMAND: Tons of Waste Requiring Disposal	SUPPLY: Existing & Planned Capacity	Surplus (+)	Shortfall (-)
1993	29,882	2,219,882	2,190,000	
1994	29,938	2,190,000	2,160,062	
1995	29,995	2,160,062	2,130,067	
1996	30,058	2,130,067	2,100,009	
1997	30,114	2,100,009	2,069,895	
1998	30,172	2,069,895	2,039,723	
1999	30,234	2,039,723	2,009,489	
2000	30,291	2,009,489	1,979,198	
2001	30,310	1,979,198	1,948,888	
2002	30,369	1,948,888	1,918,519	
2003	30,432	1,918,519	1,888,087	

NOTES:

- 1) Supply includes Dade County, Georgia.

TABLE VIII-2.6**McMinn County Disposal Capacity Summary**

Year	DEMAND: Tons of Waste Requiring Disposal	SUPPLY: Existing & Planned Capacity	Surplus (+)	Shortfall (-)
1993	40,080	1,800,080	1,760,000	
1994	41,362	1,760,000	1,718,638	
1995	41,363	1,718,638	1,677,275	
1996	41,364	1,677,275	1,635,911	
1997	41,364	1,635,911	1,594,547	
1998	41,365	1,594,547	1,553,182	
1999	41,365	1,553,182	1,511,817	
2000	41,366	1,511,817	1,470,451	
2001	41,287	1,470,451	1,429,164	
2002	41,288	1,429,164	1,387,876	
2003	41,288	1,387,876	1,346,588	

TABLE VIII-2.7

Meigs County Disposal Capacity Summary

Year	DEMAND: Tons of Waste Requiring Disposal	SUPPLY: Existing & Planned Capacity	Surplus (+)	Shortfall (-)
1993	2,628	0		2,628
1994	2,732	0		5,360
1995	2,751	0		8,111
1996	2,771	0		10,882
1997	2,791	0		13,673
1998	2,811	0		16,484
1999	2,831	0		19,315
2000	2,851	0		22,166
2001	2,865	0		25,031
2002	2,885	0		27,916
2003	2,906	0		30,822

NOTES:

- 1) Meigs County uses McMinn County's landfill.

TABLE VIII-2.8

Polk County Disposal Capacity Summary

Year	DEMAND: Tons of Waste Requiring Disposal	SUPPLY: Existing & Planned Capacity	Surplus (+)	Shortfall (-)
1993	5,844	0		5,844
1994	6,032	0		11,876
1995	6,027	0		17,903
1996	6,023	0		23,926
1997	6,018	0		29,944
1998	6,013	0		35,957
1999	6,009	0		41,966
2000	6,004	0		47,970
2001	6,000	0		53,970
2002	5,981	0		59,951
2003	5,987	0		65,938

NOTES:

- 1) Polk County uses McMinn County's landfill.

TABLE VIII-2.9**Rhea County Disposal Capacity Summary**

Year	DEMAND: Tons of Waste Requiring Disposal	SUPPLY: Existing & Planned Capacity	Surplus Shortfall	
			(+)	(-)
1993	17,884	59,415	41,531	
1994	18,457	41,531	23,074	
1995	18,459	23,074	4,615	
1996	18,461	4,615		13,846
1997	18,462	0		32,308
1998	18,464	0		50,772
1999	18,466	0		69,238
2000	18,468	0		87,706
2001	18,433	0		106,139
2002	18,435	0		124,574
2003	18,437	0		143,011

NOTE:

- 1) Rhea County is planning on expanding its existing facility under Subtitle D regulations; this expansion area encompasses approximately 80 acres; the design of this area is in its early stages and the county's consultant does not know at this time the additional capacity available from this area.

TABLE VIII-2.10**Sequatchie County Disposal Capacity Summary**

Year	DEMAND: Tons of Waste Requiring Disposal	SUPPLY: Existing & Planned Capacity	Surplus Shortfall	
			(+)	(-)
1993	4,800	38,868	34,068	
1994	4,817	34,068	29,251	
1995	4,834	29,251	24,417	
1996	4,840	24,417	20,787	1,210
1997	4,868	0		6,078
1998	4,886	0		10,964
1999	4,903	0		15,867
2000	4,920	0		20,787
2001	4,926	0		25,713
2002	4,944	0		30,657
2003	4,961	0		35,618

NOTES:

- 1) Bledsoe County shares its landfill with Sequatchie County. Supply figures divided between Bledsoe & Sequatchie based on percent of demand.
- 2) Existing supply based on 8 years capacity remaining from information supplied by CTI Engineering.
- 3) Bledsoe/Sequatchie landfill is planning to close and NOT convert to a lined facility as required by Subtitle "D".
- 4) 1996 Tonnage shortfall from October to December of that year based on Note 3).

TABLE VIII-3
Projected Net Disposal Capacity in Tons; County/Regional

Year	Bledsoe	Bradley	Grundy	Hamilton	Marion	McMinn	Meigs	Polk	Rhea	Sequatchie	Regional Total
1993	37,804	660,000	4,255	4,963,825	2,190,000	1,760,000	(2,628)	(5,844)	41,531	34,068	9,683,011
1994	31,860	599,218	(1,418)	4,499,194	2,160,062	1,718,638	(5,360)	(11,876)	23,074	29,251	9,042,643
1995	26,594	537,948	(7,066)	3,888,386	2,130,067	1,677,275	(8,111)	(17,903)	4,615	24,417	8,256,222
1996	(6,585)	476,186	(12,688)	3,275,459	2,100,009	1,635,911	(10,882)	(23,926)	(13,846)	19,577	7,439,215
1997	(11,883)	413,929	(18,284)	2,660,353	2,069,895	1,594,547	(13,673)	(29,944)	(32,308)	(6,078)	6,626,554
1998	(17,206)	351,171	(23,854)	2,043,005	2,039,723	1,553,182	(16,484)	(35,957)	(50,772)	(10,964)	5,831,844
1999	(22,554)	287,909	(29,399)	1,423,353	2,009,489	1,511,817	(19,315)	(41,966)	(69,238)	(15,867)	5,034,229
2000	(27,927)	224,144	(34,899)	801,326	1,979,198	1,470,451	(22,166)	(47,970)	(87,706)	(20,787)	4,233,664
2001	(33,309)	160,036	(40,387)	177,888	1,948,888	1,429,164	(25,031)	(53,970)	(106,139)	(25,713)	3,431,427
2002	(38,717)	95,036	(45,901)	(49,685)	1,918,519	1,387,876	(27,916)	(59,951)	(124,574)	(30,657)	2,624,030
2003	(44,150)	30,278	(51,441)	(1,081,461)	1,888,087	1,346,588	(30,322)	(65,938)	(143,011)	(35,618)	1,812,512

() indicates capacity shortfall

C. Recommendations

The following summarizes the recommendations made by the individual reports:

- **Bledsoe/Sequatchie**
 - Continue operations of existing landfill until October of 1996.
 - Begin negotiations with Marion County regarding a long term disposal contract for the disposal of Class I and Class III/IV waste.
 - If negotiations with Marion County are not successful, pursue expansion of existing landfill under Subtitle "D" regulations.

- **Bradley County**
 - Continue to operate county landfill under contract with Santek, Inc.

- **Grundy County**
 - Initiate negotiations with Marion County for a long term disposal contract for the disposal of Class I and III/IV waste.
 - If negotiations with Marion County are not successful, begin negotiations with Bledsoe/Sequatchie Counties for disposal.

- **Hamilton County**
 - **Hamilton County Landfill**
 - Finish out current permitted operations.
 - Coordinate/negotiate with City of Chattanooga for the consolidation of operations at a single site for both Class I and Class III/IV waste.

- **Summitt Landfill**
 - Negotiate with Hamilton County for construction of Subtitle "D" area.
 - Negotiate with County for consolidation of Hamilton County's waste at a single site.
 - Develop Class III/IV disposal facility at the consolidated site.
- **Marion County**
 - Continue operations of existing landfill.
 - Begin negotiations for the importation of waste in order to reduce Marion County's disposal costs. (Marion County's obligation to accept out-of-county waste would be contingent upon successful negotiation of long term contracts.)
 - Design/permit/construct Class III/IV facility.
- **McMinn County**
 - Continue to operate landfill.
 - Continue relationship with Meigs & Polk.
 - Investigate import of additional waste in order to further reduce disposal costs.
 - Designate/construct Class III/IV facility at existing Class I facility.
 - Investigate the implementation of a leachate recirculation system.
- **Meigs County**
 - Continue disposal of Class I and Class III/IV waste at McMinn County landfill.
- **Polk County**
 - Continue disposal of Class I and Class III/IV waste at McMinn County landfill.
 - Evaluate permitting/construction of Class III/IV facility.

- **Rhea County**
 - Continue current landfill operations until permitted capacity is reached (March 1996).
 - Proceed with expansion of existing landfill under Subtitle D regulations.
 - Proceed with permitting/design/construction of a Class III/IV facility.

As can be seen from Table VIII-3, the Southeast Tennessee Region, as a whole, has sufficient Class I capacity in excess of the ten-year planning period, based on the quantity of solid waste requiring disposal adjusted for population and economic growth as shown in Table III-3. The Region can control the waste flow going to the landfill since the facilities are owned and most of them are operated by the counties. The Region will have in excess of 1.8 million tons of available capacity at the end of the ten-year planning period. The Region has the option of coordinating with neighboring counties during the ten-year planning period to accept out of Region waste as needed to offset the high cost of operating Subtitle "D" landfills, or reserve this capacity for use beyond the ten-year planning period.

In the event the waste flow dramatically increases during the ten-year planning period, depending upon the amount of increase, the Region could proceed with the process for obtaining additional disposal capacity. If the Region pursues development of a new disposal facility it will be with sufficient time to avoid a loss of service to the community at the local level. The Region will annually reevaluate the capacity remaining at the landfills. At the point that five years capacity remains, the Region will begin the reevaluation process for long-term disposal options.

For further details regarding the information given in these summary tables and figures, please refer to the individual county reports.

For information relating to staffing, please reference Section 7 of the individual reports. For information relating to scheduling, implementation, financing and funding, please refer to Chapter XI of this plan.

It is recommended that for coordination and implementation purposes, the region form an office with accompanying staff to implement the programs relating to public information, education, waste reduction, source reduction and recycling. This office should also be responsible for required data collection and reporting to the State. This office is discussed in more detail in Chapter XI of this plan and in the individual reports.

A map of the region, locating the existing and planned facilities can also be found as a part of Chapter XI of this plan.

DELETE PAGE VIII-19

CHAPTER IX
PUBLIC INFORMATION AND EDUCATION

**CHAPTER IX
PUBLIC INFORMATION AND EDUCATION**

A. Introduction

Note: The following publications were utilized liberally in the preparation of this section:

Getting the Word Out!
A Guide to Publicity
New Jersey Department of Environmental Protection
Office of Recycling,
101 Commerce Street
Newark, New Jersey 07102
(201) 648-6295

Let's Reduce and Recycle:
Curriculum for Solid Waste Awareness
EPA/530-SW-90-005;
August 1990
United States Environmental Protection Agency

The central focus of both public information (publicity) and education is to help the public understand the various solid waste programs ongoing in the region and to motivate participation in such programs as source reduction, recycling, backyard composting, household hazardous waste collection, special waste collection (e.g. waste oil, batteries, tires), and litter abatement. While some overlap does exist between them, *Publicity* is generally considered a means of capturing an audience's attention through the use of mass media and promotional techniques. *Education* sustains public interest and involvement and refers to formal classroom instruction, seminars, workshops, as well as informal presentations. The ultimate goal of the publicity and education program is to change attitudes and behavior towards the handling of household, office, commercial, and industrial waste such that recycling and other forms of environmental stewardship become routine. For this to happen, the program must become a part of a comprehensive plan.

B. Regional Needs for Education

Due to the need on a regional basis for large amounts of industrial and commercial source reduction to come into compliance with the 25% waste reduction requirement, a substantial education component will be required within the regional plan. It is recognized that the state will be supplying educational assistance through the Division of Solid Waste Assistance. This, however, will not suffice to meet the needs of the

region in terms of maintaining constant contact with area businesses and industries and providing follow-up with the educational programs implemented in the various schools and civic organizations. Although some of the counties within the Southeast Development Region have already met the State mandated diversion goal, they will benefit from a regional education program by shared costs of personnel and materials, and from the types of programs that can be accomplished regionally (i.e., television ads, school curriculum development, etc.). The personnel employed regionally will also double in their capacity as recycling market organizers, and thus offer substantial assistance in the movement of collected recyclables. In addition, the education program will consist of organizing waste reduction programs such as block yard sales and a master composter program.

In order to maintain a series of programs of this magnitude, it is estimated that a full-time planner will be needed along with a full-time administrative assistant. Please reference Chapters XI and XII of this plan for a description of the coordination of this effort.

C. Goals and Objectives

For clarification, goals are defined as the primary targets of the education and publicity program and objectives are the stepping stones to the goals. In the listing below, the goals are shown in **bold** and the objectives associated with each goal are listed beneath it.

- 1. Goal 1-- Increase Source Reduction and Program Involvement Through Education**
 - a. Educational Programs in the Schools
 - b. Backyard Composting Programs
 - c. Education in the Area Offices
 - d. Education in Area Stores
 - e. Education in Area Industries
 - f. Seminars for Civic Groups
 - g. Increased Mass Media Involvement
- 2. Goal 2-- Increase Rural Interest and Participation in Programs**
 - a. Increase Area Yard Sales and Garage Sales

- b. Work with Area Churches and Pastor's Organizations
- 3. Goal 3-- Develop Markets for Recyclables and Recycled Materials**
- a. Recommended Governmental and School Purchasing Policy
 - b. Coordinate Area Business for Mass Buys of Recycled Products
 - c. Work with Nurseries and Landscapers for Compost Market

D. Target Groups and Audiences, Amount and Kind of Information, Specific Methods

- 1. Goal 1, Objective a-- Increase Source Reduction and Program Involvement Through Education-- Educational Programs in the Schools.**

a. Implementation and Responsibility:

This program will be administered by the Southeast Tennessee Development District. The funding for the program will be provided by the individual counties based upon waste generation.

This program is best divided into two subprograms based upon age and grade level of the participants.

b. Subprogram 1-- Basic Family Information

This educational program is to be developed for younger students and is primarily geared toward providing the student with stimulating topics to take home and discuss with the family. The primary focus will be not to fill the child's head with facts and figures but instead to provide colorful and exciting material which will motivate the child to begin discussions at home.

1. Target Groups and Audiences (Subprogram 1):

5th Grade students throughout the region.

2. Amount and Kind of Information and Specific Methods to be Utilized (Subprogram 1):

Presented in Appendix 1 of this chapter is a five unit study with 28 associated activities. Seminars (one per county) should be hosted by the Development District to which the 5th grade teachers are invited. (Using in-service time is recommended - if possible). The purpose of this seminar is to go through the

units and activities in detail. The amount of effort which the individual teachers must exert to prepare to teach this program must be minimal. The curriculum presented in this chapter is optional and can be varied at the needs of the staff implementing the program.

It should be noted that many of the activities included within the program are publicity programs for the community-at-large and the family which are prepared and performed by the students. It must be left up to the individual teacher as to which of the activities are appropriate for the class.

C. Subprogram 2-- Environmental and Waste Education

This educational program is more involved and gives details concerning waste, waste processing, and waste disposal. The purpose of this section is to give the older student the information needed to vote and make decisions concerning solid waste as an adult.

1. Target Groups and Audiences (Subprogram 2):

10th grade students throughout the region.

2. Amount and Kind of Information and Specific Methods to be Utilized (Subprogram 2):

Presented in Appendix 2 of this chapter is a five unit study with 36 associated activities. Seminars (one per county) should be hosted by the Development District to which the 10th grade science teachers are invited. The purpose of this seminar is to go through the units and activities in detail. The amount of effort which the individual teachers must exert to prepare to teach this program must be minimal.

It is recommended although not essential that the above program be presented within a science curriculum. As can be seen, the curriculum is intended to last about one week although it can be utilized in a variety of fashions to last five weeks or throughout the school year as individual projects. The program is not intended to be a curriculum in itself. This program is much more detailed than subprogram 1 and therefore lends itself more readily to providing examination material.

d. Method For Evaluation and Reporting of Program (Subprograms 1 and 2):

Appendix 3 is comprised of two pages which constitute a form with which the individual teachers can evaluate the provided program. It will be the

responsibility of the region to provide a method for gathering the completed forms through the school systems and utilizing the provided information to revise and improve the curriculum. If an alternative curriculum is used, this form should be used as a model from which to create a similar form for the curriculum chosen.

2. Goal 1, Objective b-- Increase Source Reduction and Program Involvement Through Education-- Backyard Composting Programs

a. Implementation and Responsibility:

This program will be implemented at the local county level by county representatives and the Southeast Tennessee Development District.

b. Target Groups and Audiences:

For a backyard composting program to be successful a subdivision-type housing environment is required. In other words, large amounts of single-family housing located on lots of one acre or less. In addition, garden clubs are an excellent source for master composters.

c. Amount and Kind of Information and Specific Methods to be Utilized:

The information utilized must be very brief and very simple. The primary factor that must be overcome in a backyard composting program is the fallacy that composting is difficult. A brief flyer should be printed for the region and utilized within a "master composter" program.

The "Master Composter" program is a pyramid style organization in which the solid waste region trains interested persons from the target areas identified above in backyard composting. These persons should be from different neighborhoods. These people become the master composters. The Southeast Development District then supplies them with the flyers and materials they need to interest others in their neighborhood in composting. It is important that the majority of the information pass directly from person to person that the flyers do not attempt to be overly comprehensive or complex.

The counties may choose to provide composting bins either free or at cost to interested residents or may choose to construct a composting demonstration project in an area park. The purpose behind this project is to have various composting bins in-use and on display. The park should be staffed at certain hours (preferably by master composters on a volunteer basis).

d. Method For Evaluation and Reporting of Program

The evaluation of the program must come through the master composters. It is virtually impossible to determine a percent diversion through this method (or any source reduction method). At the end of each year, the master composters should fill out a form which answers the following questions:

1. How many new households have begun composting this year? ____
2. How many households continued composting this year? ____
3. How many households have attempted composting since the beginning of the program and have quit? _____

3. Goal 1, Objective c & d-- Increase Source Reduction and Program Involvement Through Education-- Education in the Area Offices and Stores

a. Implementation and Responsibility:

This program will be implemented by the Southeast Development District with the funding divided among the counties on a waste generation basis.

b. Target Groups and Audiences:

The primary target for this program are those establishments which generate large amounts of paper. This includes government offices, insurance offices, legal firms, professional firms, etc.

c. Amount and Kind of Information and Specific Methods to be Utilized:

This program must be very simple and not time consuming. The primary purpose of the program is to overcome the fallacy that paper recycling is difficult. As such, an brochure must be simple and preferably on a single page. The brochure should include an offer for a region representative to come to the office and assist them in setting up the recycling collection program.

Some simple points which should be added to the educational package are:

1. Always have a paper recycling box at the copy machine.
2. Another good location for a paper collection box is at the coffee machine.
3. A system which does not work well is the use of desk-top "in" boxes for

recycling. Such a box on someone's desk is usually being used for something else within a week.

4. Individual boxes next to each employee's desk work only when someone in the office is designated to take the recyclables to a central point on at least a weekly basis.

d. Method For Evaluation and Reporting of Program

The region must keep records of all offices which have requested assistance in setting up in-office recycling programs. In addition, each of these offices should be contacted on an annual basis to determine if they have continued their recycling efforts. In the event that an office has discontinued, the region should make a personal call on the business to determine if there is any way to reinstate the program.

4. Goal 1, Objective e-- Increase Source Reduction and Program Involvement Through Education-- Education in Area Industries

a. Implementation and Responsibility:

This program will be implemented by the Southeast Development District with the funding divided among the counties on a waste generation basis.

The primary purpose of this program is to get industries working with one another to identify problem wastes and potential solutions within the district.

The offices associated with industry would be handled under the office program.

b. Target Groups and Audiences:

The target group for this program is those industries identified in this report as being major waste generators.

c. Amount and Kind of Information and Specific Methods to be Utilized:

The Southeast Development District staff should perform an inventory of the manufacturers in the region which includes the raw materials and waste products associated with their process. All other materials which are disposed of in bulk should be cataloged. This listing should then be made available to the industries in the region. Regular meetings between area industries should be sponsored by the Southeast Development District in order to motivate communication among the industries.

d. Method For Evaluation and Reporting of Program

Area industries should be contacted on a regular basis and questioned concerning recycling programs and any programs which have been worked out in coordination with other area industries. Multi-industry programs should be charted for progress. In the event that one of these programs is canceled, the region representative should meet personally with the industries involved to determine if the arrangement can be continued.

5. Goal 1, Objective f-- Increase Source Reduction and Program Involvement Through Education-- Seminars for Civic Groups

a. Implementation and Responsibility:

The Southeast Tennessee Development District will implement this program. The District will organize a pool of speakers and regularly advertise the availability of the speakers through the media. The program requires no funding unless the District should approve a stipend and/or travel reimbursement for speakers.

b. Target Groups and Audiences:

Target groups for this program include the organized and active civic, professional, and service groups within the region.

c. Amount and Kind of Information and Specific Methods to be Utilized:

The amount and kind of information utilized will vary with the type of organization. The primary methods of publicity will be through personal presentations given before these groups or the boards of directors of these groups. In some instances, volunteer support will be requested. However, in most instances the presentation will be concerning the programs available through the region and source reduction strategies.

d. Method For Evaluation and Reporting of Program

Follow-up questionnaires should be mailed to each group after a presentation to determine if the information presented was informative to them and if they had any use for it.

6. Goal 1, Objective g-- Increase Source Reduction and Program Involvement Through Education--Increased Mass Media Involvement

a. Implementation and Responsibility:

This program will be implemented by the Southeast Tennessee Development District with the funding divided among the counties on a waste generation basis.

b. Target Groups and Audiences:

The target group and audience for this objective is the overall population of the region. Radio, television, and newspaper advertisements and public service announcements should be regularly distributed throughout the area media.

c. Amount and Kind of Information and Specific Methods to be Utilized:

Television: Public Service Announcements should be brief and visual. Voice-only announcements should be avoided if possible.

Radio: Public service Announcements should be bright and include either music or upbeat phrasing. Dry schedules, announcements should be avoided.

Newspaper: Newspaper should be approached about including information on solid waste programs in a thematic portion of the newspaper. For example, an environmental section coinciding with Earth Day could include a large amount of information about the overall program. Small single articles concerning solid waste go largely unread.

d. Method For Evaluation and Reporting of Program

Statistics should be maintained which allow for charting various programs. This charting should be done on a small enough interval that increases and decreases in participation due to these advertisements can be noted.

7. Goal 2, Objective a-- Increase Rural Interest and Participation in Programs-- Increase Area Yard Sales and Garage Sales

a. Implementation and Responsibility:

This program will be implemented on a local basis.

b. Target Groups and Audiences:

The target group of this program will be that portion of the population which lives in a rural environment and therefore does not have easy access to the more

modern forms of recycling. The purpose of this program is to build on and increase existing forms of source reduction and reuse through expanding the opportunities for large-scale yard sales and garage sales. It is hoped that those persons already actively participating in yard sales will invite and assist others who otherwise would not participate if the yard sale is made into a neighborhood event.

c. Amount and Kind of Information and Specific Methods to be Utilized:

This method will be to work through local neighborhoods, civic groups, community centers, and churches to coordinate large-scale neighborhood yard sales utilizing publicly accessible parking lots. The region will contact and create a network of "block leaders" to coordinate the yard sales throughout the rural areas of the region. This block leader will be responsible establishing a location and a date for the sale and for providing participants from the area and advertising. The block leader must be allowed charge a percentage of sales in order to cover costs including a personal stipend. Maximum allowable percentages and stipends, as well as recommended budgets for advertising and other associated costs.

d. Method For Evaluation and Reporting of Program

The block leader must file the following information with the Southeast Tennessee Development District:

Location of Yard Sale: _____

Dates of Yard Sale: _____

Number of Participants: _____

Approximate Number of Households Represented: _____

Approximate Number of Shoppers: _____

8. Goal 2, Objective b-- Increase Rural Interest and Participation in Programs-- Work with Area Churches and Pastor's Organizations

a. Implementation and Responsibility:

This program will be implemented on a local basis.

b. Target Groups and Audiences:

The target group of this program will be that portion of the population which lives in a rural environment and therefore does not have easy access to the more modern forms of recycling. The ministerial alliances in the counties should be contacted in an effort to inform the church community of the available programs which might be used for fund raising activities as well as to request the assistance of the pastors and congregation in source reduction and recycling.

c. Amount and Kind of Information and Specific Methods to be Utilized:

The primary means of publicity and education for this objective will be through the passing out of simple flyers and personal speaking engagements.

d. Method For Evaluation and Reporting of Program

A record of speaking engagements should be maintained.

9. Goal 3, Objective a-- Develop Markets for Recyclables and Recycled Materials, Recommended Governmental and School Purchasing Policy

a. Implementation and Responsibility:

This program will be implemented by the Southeast Tennessee Development District and the Southeast Tennessee Solid Waste Planning Board. The staff will prepare a draft of the purchasing policy which the planning board will review and finalize for distribution.

A purchasing policy should be prepared and then presented to all governmental bodies within the region. The policy should include as a minimum the following:

1. Plan for gradually working the governmental body up to 100% purchase of recycled paper. The policy should work gradually toward that goal with no more than 15% increase in recycled material purchase per year.
2. Definition of recycled paper by post-consumer content. A 30% post-consumer content is recommended as a minimum definition of recycled paper.
3. A bid multiplier for non-recycled materials when bidding against recycled materials. For example, when bidding buckets made of virgin plastics against buckets made of recycled plastics, multiply all costs associated with the virgin plastics buckets by 1.05 for comparative purposes.

4. A plan for phasing out disposable products where reusable products are available.
5. A plan for requiring written reasons for utilizing toxic chemicals and materials where less toxic chemicals and materials are available.

b. Target Groups and Audiences:

Local municipal and county governments, schools, and institutions.

c. Amount and Kind of Information and Specific Methods to be Utilized:

The purchasing policy itself will be utilized along with personal presentations to governing bodies. It is recommended that a pilot program be developed for one year with one municipality within the region and the cost increases due to the policy be charted before presenting the policy to other governmental bodies.

d. Method For Evaluation and Reporting of Program

A listing of the governmental bodies which have adopted the policy along with the revisions and changes which each made to it should be kept on file. Annual checks should be made with the purchasing officers to follow-up on progress made towards the percentage goals presented within the policy.

10. Goal 3, Objective b-- Develop Markets for Recyclables and Recycled Materials, Coordinate Area Business for Mass Buys of Recycled Products

a. Implementation and Responsibility:

This program will be implemented by the Southeast Tennessee Development District with funding divided among the counties on a waste generation basis.

b. Target Groups and Audiences:

Local business and industry.

c. Amount and Kind of Information and Specific Methods to be Utilized:

All local distributors of recycled products should be kept on file. Special prices for bulk purchases should be worked out. These special prices would then be presented to a grouping of businesses and industries as a mass purchase. This would obviously only be applicable on universally used items such as copy paper. In addition, local businesses should be encouraged to join the Buy Recycled

Business Alliance which is a no cost organization which assists businesses in buying recycled materials.

d. Method For Evaluation and Reporting of Program

A listing of businesses that have participated in this program as well as those that have expressed an interest should be maintained along with the materials that each would be interested in purchasing.

11. Goal 3, Objective b-- Develop Markets for Recyclables and Recycled Materials, Work with Nurseries and Landscapers for Compost Market

a. Implementation and Responsibility:

This program will be implemented by the Southeast Tennessee Development District and funded by the individual counties based on waste generation.

b. Target Groups and Audiences:

Nurserymen and Landscapers

c. Amount and Kind of Information and Specific Methods to be Utilized:

The information presented would consist of samples and analyses of available compost materials. These materials would be generated both within and without the region although those generated within the region would be given precedence. This program would acquaint the nurserymen with the local compost quality and markets and would establish lines of communication between the two.

A recommendation which is not mandated within the plan is a regular newsletter for the nurserymen updating them on the compost "crop" in the region and the availability of compost materials. Sewage sludge could also be featured with articles on how to become approved as a land disposal location.

d. Method For Evaluation and Reporting of Program

Quantities of compost material utilized by nurserymen and landscapers would be recorded and maintained.

E. Staffing and Budget Needs

As stated earlier, in order to maintain a series of programs of this magnitude, it is estimated that a full-time planner will be needed along with a full-time administrative assistant. A budget estimate for the program is as follows:

**Education/Source Reduction Program
Estimated 1995 Budget**

Item	Cost (1995)
1 Planner @ \$30,000/year	\$ 30,000
1 Administrative Assistant	18,000
Benefits	14,400
Overhead	25,000
Advertising and Promotion	20,000
Travel	15,000
Professional Education	4,500
Printing	10,000
Office Supplies	7,500
Supplies	15,000
TOTAL	\$154,400

This figure along with additional regional costs, per Chapter XI, will be apportioned out among the member counties based upon waste generation.

It is suggested that this breakdown be as follows:

	1993 Waste Disposal	Shared Regional Costs
Bledsoe	5,200	\$ 1,312
Bradley	58,427	\$ 14,743
Grundy	5,700	\$ 1,438
Hamilton	451,110	\$113,829
Marion	20,220	\$ 5,102
McMinn	40,080	\$ 10,113
Meigs	2,628	\$ 664
Polk	5,844	\$ 1,475
Rhea	17,884	\$ 4,513
Sequatchie	4,800	\$ 1,211
Total	611,893	\$154,400

These costs represent a significant savings over those for hiring and supporting individual county recycling coordinators and education planners.

F. 10-Year Implementation Schedule

- January 1995 Schedule the mobile solid waste education van which is sponsored by TDEC, TVA, and the Tennessee Soft Drink Association to appear at the county fairs in each county.
- January 1995 Southeast Tennessee Development District/individual counties to apply to the Tennessee Valley Authority for funding for a pilot Master Composter Program.
- January 1995 Schedule a UTCTAS Workshop on Public Outreach and Education for the Planning Board, the Southeast Tennessee Development District and staff.
- January 1995 and 1996 Submit request to Tennessee DSWA for grants for education programs listed in the plan.
- Ongoing Prepare press releases and provide Photo Ops at the beginnings of all programs. Prepare monthly press releases.
Goal 1, Objective g
- February 1995 Begin work with block leaders for community yard sales.
Goal 2, Objective a
- February 1995 Work with pilot community for implementing purchasing policy.
Goal 3, Objective a
- March 1995 Backyard composting program kick-off.
Goal 1, Objective b
- March 1995 Begin seminars for civic groups.
Goal 1, Objective f
Schedule one presentation per month.
- April 1995 Begin education in area industries.
Goal 1, Objective e
- May 1995 Schedule meetings with ministerial alliances in the region.
Goal 2, Objective b
- June 1995-2003 Schedule teachers in-service with the Tennessee Department of Education.

August 1995	Begin educational programs in schools. Goal 1, Objective a
September 1995	Begin work with nurseries and landscapers Goal 3, Objective c
October 1995	Begin education in area offices. Target three offices per month. Goal 1, Objective c
February 1996	Begin education in area stores Target two stores per month. Goal 1, Objective d
February 1996	First mass purchase of recycled products. Goal 3, Objective b

CHAPTER X
PROBLEM WASTES

CHAPTER X PROBLEM WASTES

A. Household Hazardous Waste

1. Needs

Household hazardous waste (HHW) is defined as wastes discarded from homes, apartments, motels, and hotels that if generated by an industry would be regulated under Subtitle "C" of the Resource Conservation and Recovery Act as hazardous waste. The waste can either be a listed hazardous waste or hazardous by characteristic: ignitable, corrosive, reactive, or toxic. HHW may pose a threat to sanitation workers or the environment when improperly handled or disposed. Managing this waste in the municipal solid waste stream presents obvious problems. Disposing of this waste in municipal solid waste landfills results in a more toxic leachate. In uncontained landfills leachate has the potential of moving into and contaminating the groundwater. In contained landfills, particularly aggressive chemicals may affect the containment system. HHW discarded with other trash may react or explode in waste compactors, or burn personnel handling these wastes. Improper dumping down the drain may damage septic systems, sewage treatment plants, or drinking water supplies; or it may corrode plumbing or cause treatment plant sludge to be hazardous. Illegal dumping of this waste may directly impact the environment, in particular surface water when dumped into storm sewers.

Household hazardous wastes include: paint thinners, solvents, paints and varnishes, cleaners, cosmetics (nail polish remover), pesticides, fertilizers, bleach, automobile fluids, photo and hobby chemicals, swimming pool chemicals, batteries, wood preservatives, motor oil, air conditioning refrigerants, adhesives, herbicides, fungicides, etc. The benefits of HHW collection programs go beyond the collection and disposal of these potentially dangerous chemicals. The programs can include public education elements that identify HHW, outline proper ways to store the wastes, and suggest alternative products. Collection programs increase the public's awareness of HHW in the home and encourage safer use and proper disposal.

The Solid Waste Management Act of 1991 outlines a program to manage household hazardous waste. The program relies on permanent collection centers for the major population centers, Shelby, Davidson, Knox, and Hamilton Counties. The remainder of the 91 counties in the state will be serviced by mobile collection units. The law requires that each county have at least one collection center by January 1, 1995 for automotive fluids, tires and lead acid batteries.

Liability is often a concern related to the collection of HHW. If the collection event

accepts wastes **only** from households, it is exempt from RCRA (Resource Conservation and Recovery Act) Subtitle "C" liability. RCRA Subtitle "C" is the federal law that governs the safe storage, treatment, and disposal of hazardous wastes. The superfund law, or CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act) is another liability concern. This law allows the federal government to collect cleanup costs for sites that release hazardous constituents from anyone who ever deposited wastes on that site. CERCLA does not contain an exclusion from liability for household waste or an exclusion based on the amount of waste generated. Any waste that qualifies as a hazardous substance under CERCLA is subject to the appropriate liability provisions. Hazardous substances are defined and/or listed under CERCLA. HHW may qualify as a hazardous substance if it contains any substance regulated under CERCLA. If a HHW contains a substance that is covered under CERCLA (whether or not it is a RCRA hazardous waste) potential CERCLA liability exists. It is important to note that potential liability under CERCLA applies regardless of whether the HHW was picked up as part of a community's routine waste collection service and disposed of in a municipal landfill or in a special collection event. The additional safeguards provided by a specific HHW collection and management event may reduce the likelihood of environmental and human health impacts, and therefore may also reduce potential CERCLA liability.

In the State of Tennessee contracted collection program, the Contractor is required by the contract with the State to accept legal responsibility for the safety and well being of persons and property on site during the collection event. The contractor is required to carry certain types and amounts of insurance to cover his liability .

2. Goals and Objectives

The specific goals for the Region in developing a HHW management program include:

DISPOSAL. Provide proper disposal, minimizing the impact on the environment due to potentially dangerous chemicals.

HOME SAFETY. Remove chemicals from homes, reducing exposure and potential injury.

EXPOSURE. Minimizing the amount of dangerous chemicals in the collection and disposal systems will reduce danger to sanitation workers.

EDUCATION. Educate consumers regarding the best methods of management of HHW; alternative product options with less potential hazards; proper storage and use of chemicals; better home management practices such as purchasing only the amount of chemicals needed.

3. Implementation

Acknowledging the importance of properly managing HHW, the State of Tennessee has allocated resources to implement special collection programs. The State has contracted with Laidlaw, a mobile collection contractor to manage the collection event. Laidlaw will receive, sort, categorize, and prepare the waste for transporting and disposal in accordance with all applicable regulations. Each county in Tennessee has the responsibility to provide at least one collection center by January 1, 1995. To assist the counties the State has developed the attached "Policy Guide of County Responsibilities Tennessee Household Hazardous Waste Collection Program".

The Solid Waste Management Act requires each county to provide:

1. A service site for the mobile collection unit to access
2. Advertisement in the newspapers outlining the schedule and details about the collection event
3. At least one person assigned to the collection site who will assist in the operation

The county executive schedules the collection event with the Special Waste Section by contacting the section with a proposed date, and location along with the name and address of the county's representative who will be on site (see attached draft letter). The request needs to be submitted at least thirty days prior to the desired collection date. The county (or Region) can request assistance with advertisement and educational programs from the state as well. Each county needs to provide the Section with a copy of the proposed ad, expected dates the ad will run, and the names of the papers which the ad will appear ten days prior to the ad appearing. To schedule a collection day, the contact information is:

Don Manning, Manager (532-0091)
Special Waste Section
Division of Solid Waste Assistance
14th Floor, L & C Tower
401 Church Street
Nashville, Tennessee 37243-0455

In order to present an effective program a key ingredient is effective advertising and public education. The State will be liable for a set-up fee to the Contractor each time a County is serviced, regardless if participants attend. The potential users must be aware of the availability and the benefits of a program in their community. At a minimum the county needs to advertise in a newspaper of general circulation the

date, hours, and location of the collection event. The ad needs to be published once at least two weeks preceding the event and once the week of the event. The ad needs to specify that only 100 pounds of waste will be accepted from each household and list the items excluded (**medical and radioactive wastes, explosives, and dioxins**), and note that the program is funded by the state. Effective means of getting the word out include:

Posters or handouts, distributed at existing disposal facilities (landfill, transfer station, convenience center), retail outlets, government buildings; consider distributing the information with the collection routes with municipal solid waste pick up;

Special lesson plans in schools, and/or notice during the school daily announcements; information presented to school age children is very effective means of reaching the entire household;

Public service announcements on radio and television, coordination with local news media for press releases or articles of interest in the newspaper;

Inserts in utility bills or direct mailings;

Meetings with clubs, churches, civic organizations with videotape and audio-slide presentations.

4. Site Preparation

Each county is responsible for providing the temporary site for the Collection Event. It is recommended the site be county owned. If the site is not county owned, the county needs to provide appropriate documentation of the specific agreement with the property owner (fifteen days prior to the collection day). Seven to fifteen days prior to the collection event, the county needs to allow the household hazardous waste collection Contractor to inspect the site.

The site chosen needs to provide easy access to the State collection Contractor by paved, gravel or well maintained roads. In order to be effective, the site needs to be convenient and close to potential users. The site needs to have access to electricity (grounded 110 electrical outlet), telephones (within fifty feet), water and sanitary facilities. The site can utilize the parking lot of a cooperative retailer, fire or police station, public works facility, etc. At least fifteen parking spaces are needed. A paved surface is necessary to contain spills. A flat area of at least 100 feet by 100 feet is needed. Also, avoidance of areas near surface water, storm water and sewer drains is recommended. The county needs to provide waste containers to manage

nonhazardous materials which come in. Management of the solid, nonhazardous waste, will be the responsibility of the county. A roll off dumpster would provide for collection and easy transportation to the landfill for nonhazardous waste. It is the county's responsibility to inspect the waste containers for questionable waste. It is critical for the county to assure all potentially hazardous waste is removed by the Contractor.

Although Laidlaw will provide the support necessary to conduct the collection program, having certain materials on hand is recommended for the county: tables and chairs, fire extinguisher, signs for traffic control and to identify the site, traffic cones, water hose and shut off valve, duct tape and staple gun, leaflets with general information on the program, pens, camera, paper weights and survey forms. A brief survey form will help determine the effectiveness of the program. An example form is provided at the end of this chapter (note, the State may provide their own form for distribution).

The operating rules of the facility need to be conspicuously displayed with guidelines for users. The users need to be aware that if a waste is not accepted they, as the generator, are responsible for the proper disposal. Limits on the volume and source of the waste need to be displayed. The State has set a maximum of 100 pounds per household (per automobile). It is imperative that no waste from industries is accepted, only household hazardous waste.

The county needs to provide a site representative, either an employee or a representative of the county. The site representative needs to be a responsible individual capable of assisting in the organization of the collection event, offering support to the Contractor and allocating county resources as needed. The county representative or a suitable back up, must be on site during the operation and clean up of the event. The county representative will inspect the site prior to the Contractor leaving, he will need to document any damages to the site and the removal of all hazardous materials. It is advisable to contact local environmentally conscious groups to request volunteers to assist with the program. Three or four volunteers on site during the day will help with traffic control, survey distribution and to help the Contractor. The county representative will be responsible for coordinating county volunteers and for properly managing the solid waste on site.

5. County Specific Action

The first household hazardous waste collection day in the State program was Rutherford County on September 23, 1993. Over 400 cars visited the site to utilize the services offered. Overall the day was a success. The second event was conducted by the Bi-County Solid Waste Authority in Clarksville in October 1993, as

coordinated by Pete Reed. This event collected over 6000 pounds of household hazardous waste, with about 100 cars attending.

The staffing requirements for each county will primarily involve the individual on site during the collection event. This individual will likely be from the public works or sanitation department, preferably a supervisor or someone of equitable responsible nature.

It is recommended that these individuals be designated as the event organizers as well. The event organizer would coordinate choosing and preparing the site; setting the schedule with the State; developing and implementing the advertising campaign; working with the State Contractor to evaluate the site and assure the availability of all needed materials; coordinating volunteers; being on site at all times during the event; providing the final inspection and any follow up as needed.

In discussion with Pete Reed who coordinated the collection event in Clarksville, he estimated the County contribution was approximately 2 staff people for 3 days, with \$200 to \$300 in supplies and managing solid waste received. He stressed the involvement of volunteers to keep the costs to a minimal as well as to assist in public education. This results in about \$1,000 in County costs. This assumes the advertising is donated by local media.

6. Long Term Program

The Solid Waste Management Act of 1991 has a five year sunset provision. The State has indicated that they intend to continue the State funded program for another three years or until the funding is exhausted (\$1,500,000). However, the contract is reevaluated annually. Given that, counties need to take full advantage of the State funded program while it is available. The State program is set up to respond to specific requests from counties. Priority will be given to counties which have not had the services in the past. As available, the State Contractor can revisit counties previously serviced.

Once the State program has been exhausted, the individual counties need to evaluate the options to continue the program with their own resources. The data accumulated from the State program can be used to estimate cost and assist in setting up regional programs. The Rutherford County collection event cost the State over \$20,000 while the Montgomery County program cost about \$10,000 due to less participation.

To take advantage of the economies of scale the Southeast regional counties should work together. Due to the high cost of individual programs, it is unlikely the counties could finance household hazardous waste programs individually.

Coordinating with all ten counties may allow for an economical option of continuing with the services of a private contractor. Preliminarily, the Region can establish collection programs, one collection day in each county once per year. Working together, collection days can be set up periodically at alternating counties.

The advertising campaign for the collection days would be disseminated to all participating counties. This allows participants access collection programs in other counties if they could not wait until their home county's scheduled day.

The progress made by the State funded collection events needs to be maintained with a continuing educational program. The information provided to the public regarding the dangers and alternatives of HHW needs to be ongoing. Information such as the attached is a listing of typical HHW with more environmentally friendly alternative products is particularly important in avoiding the generation of household hazardous waste.

The implementation of the long term household hazardous waste management program will be under the responsibilities of the Region's Recycling/Educational program, since the importance of proper education in this issue is paramount.

7. Implementation Schedule

The region will take full advantage of the State funded collection program as shown with Rutherford County conducting one of earliest collection program in the State.

Because the Southeast Region consists of 10 counties, if the State Contractor can schedule the frequency, the Region could conduct one collection day each month, alternating counties. This would have each county responsible for a collection event only once or twice per year.

The costs associated with the long term program are difficult to estimate at this time due to the lack of specific information on the participation rates for future programs. Once the State funded program has operated the data accumulated can be used to assist in the development of the Region's budget for HHW collection and management. The budget presented below provides rough estimates for expected program costs excluding any staff time.

**Table X-1
Schedule and Budget of the HHW Collection Program**

Date	Scheduled Task	Estimated Costs
1994 - 1996	One state funded collection event in each county per year (minimum)	\$1,000 to \$2,000 per county per year
1996	Region investigate county events funded locally	\$500 to \$1,000 for study
1997 - 2003	Regionally coordinated collection events in each county (1/county/year)	\$15,000 to \$25,000 per county per year

Example Request Letter For a HHW Collection Day Funded by the State

Date

Department of Environment and Conservation
Division of Solid Waste Assistance
401 Church Street
Nashville, Tennessee 37243

Subject: Request for a Household Hazardous Waste Collection Event
Southeast Tennessee Solid Waste Region
_____ County

This letter serves to request scheduling of a household hazardous waste collection event in _____ County. The date desired is ____, 1994. The contact person who will serve to coordinate the fulfillment of the county's responsibilities will be _____. The contact person can be reached at _____, the address is _____. The on site representative who will coordinate the county's responsibilities will be _____. He/she can be reached at _____, the address is _____.

The site choice is _____ (description and directions). The site is approximately _____ (size). The site provides for water, electricity, sanitary facilities, and telephone available within. (If the site is not owned by the county, include the agreement with the land owner). Specifically, the site meets the requirements outlined in the Policy Guide. The telephone numbers for the appropriate emergency agencies are listed below:

FIRE: _____

POLICE: _____

NEAREST MEDICAL FACILITY: _____

Potential volunteers for this event may be contacted through the:

The County intends to advertise for the event starting _____ (two weeks prior to the event), with the attached advertisement (include the advertisement).

If you have any questions or objections to the date or location chosen please contact me directly. We would appreciate your prompt attention to this request.

Sincerely,

County Executive

HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAM
Southeast Tennessee SOLID WASTE MANAGEMENT REGION

DATE: _____

To determine the effectiveness of this program and improve future efforts, the user of this household hazardous waste collection service is requested to fill out this brief survey form.

1. How did you hear about this service? _____
2. Suggestions for more effective advertizing? _____
3. What is the primary reason you decided to utilize this service?
 interest in protecting the environment
 concern over health risks of having these chemicals in your home
 concern over throwing these chemicals in with solid waste and the danger to sanitation workers
 just wanted to get rid of the waste
 other: _____
4. What sort of waste did you bring today? _____
5. Approximate volume of waste? _____
6. How convenient is this location? _____
7. How far do you live from here? _____
8. Where do you live(City and County)? _____
9. Suggested alternative locations? _____
10. Please rate the service received today (1 to 5, 5 being excellent and 1 being unacceptable). _____
11. Demographic data:
Age group: <20; 20-29; 30-39; 40-49; 50-59; 60+ years old
Income: <15,000; 15,000-29,999; 30,000-49,999; \$50,000+ /year
Education: grade school; high school; college; post graduate
Currently a student? no; yes
12. The State of Tennessee is funding this program for a limited time. Should local funds finance future programs? Would you be willing to pay for this service in the future?

13.

Comments: _____

14. Name and address (optional) _____

B. Waste Tires

1. Needs

The Solid Waste Management Act of 1991 includes the regulation of waste tire disposal and a program to assist in the proper disposal of waste tires. The law outlines operational requirements for disposal of tires at landfills, as well as directing each county to provide a site to receive and store waste tires. The law reads:

Waste tires may be disposed of in the same manner as other waste except that whole waste tires may not be disposed of in the final lift or within 10 feet of the final grade unless the tires are shredded, chipped or circumferentially sliced. Whole tires or shredded, chipped or circumferentially sliced tires may be stored on site provided that the tire storage area conforms with the following standards:

- I. The storage area shall be surrounded by an 18" high earthen berm to manage run-on and run-off and be sufficient to contain water in the event of a fire, and to provide that:
 - a. All surface run-off is diverted around the site;
 - b. All rain water collected within the berm must be directed to an appropriate release point; and
 - c. All fire control water can be contained until release is approved.
- II. Tire piles shall be restricted to the following dimensions: 200' long, 50' wide and 15' high. Whole tires shall be covered by a material sufficient to shield the tires from precipitation or an effective insect vector and rodent control program shall be established.
- III. A buffer zone of at least 50' wide shall separate tire piles from each other and from active disposal areas.
- IV. In order to reduce the risk of fires:
 - a. The storage areas and the buffer zone shall be kept free of brush and high grass;
 - b. No flammable liquids may be stored nor may equipment with an open flame be utilized in or within 50' of the storage area;
 - c. Communication equipment, capable of immediately notifying the responding fire department, shall be maintained, and;
 - d. A letter assuring response from the responding fire district must be filed with the State and the telephone number of the responding fire district must be posted at the facility. If service is not available specific fire control measures must be specified by letter to the state.
- V. The storage area may not be located:
 - a. On an active disposal area
 - b. On a closed disposal area, unless no remaining area is available and remedial closure is specified in writing to the State
 - c. On an area to be utilized for disposal within one year; and
 - d. In wetlands or the 100 year floodplain.
- VI. Tires or shredded tires may not be stored for more than one year without the written approval of the State. The operator shall maintain records sufficient to establish the date each tire pile within a storage area was begun.

The law calls for a December 31, 1994 ban on disposal of whole tires in landfills. To transition into this ban, the State has funded a private contractor (Southeastern Environmental Technologies of Tennessee) to shred waste tires at no cost to local governments. The mobile tire shredder will go to each county at least twice per year. Counties with a Class I or IV landfill may store waste tires on a permitted facility until they are shredded (up to one year). Other counties can establish a separate waste tire storage site with a state permit.

In order for a county to have its waste tires shredded each site must have an accessible road and work site capable of accommodating a tractor trailer truck and tire shredding equipment weighing approximately 80,000 pounds.

2. Goals and Objectives

The specific goals for the Region in developing a waste tire management program include:

1. Provide for environmentally sound disposal of tires
2. Reduce the number of illegal dumps and associated problems with old tires, this includes potential breeding ground for insects, unsightly dumping grounds, and potential for serious fires
3. Alleviate operational problems at landfills due to the behavior of tires in the fill (difficult to compact, tend to rise and interfere with cover integrity, leave voids in the waste after rising, etc)
4. Investigate alternative disposal options, such as recycling or reuse of the tire material subsequent to shredding

3. Current System

The existing tire management program is provided by some of the landfills which serve the region. Bradley, McMinn and Rhea Counties have each established a tire storage area/shredding site and McMinn and Rhea Counties work with the State shredding operation prior to disposing of the tires in their landfills, and the Summitt landfill in Hamilton County has an approved storage method.

It is difficult to provide a quantitative estimate regarding the extent of illegal dumping problems in the region. The comparison of the number of tires sold compared to the number of tires shredded is unavailable, therefore the likelihood of problematic tire dumping is unknown. Implementation of each of the tire storage areas and effective advertising will reduce the illegal dumping problem.

4. Implementation

Not all of the counties in the region are currently meeting the minimum requirements for the regulations, in that they do not have designated tire storage areas where the tires are being shredded prior to disposal. The Region will move further by aggressively addressing the issue of illegal dumping problems and investigating the feasibility of alternative disposal options.

To address the problem of illegal dumps in general, the Southeast Tennessee Development District staff will coordinate with the sanitation or public works departments of the counties to establish:

1. Establish an inventory of illegal tire piles
2. Standard clean up protocol
3. Educational programs to attempt to discourage illegal dumping
4. Enforcement program to punish individuals associated with illegal dumping

The issue of developing alternatives to landfilling the tires is a matter of researching potential markets to utilize the materials.

5. Costs

The costs of the waste tire program are managed through the existing landfill budgets.

C. Waste Oil

1. Needs

Due to the common practice of individuals changing their own automobile oil, the potential for environmental impact from improper disposal is high. The EPA estimates that every year, privately owned automobiles and light trucks generate over 300 million gallons of used crankcase oils. The majority of this oil (over 200 million gallons per year) is generated by individual consumers who change their own oil. The EPA estimates only 10% of this is properly collected and sent off for recycling. The remainder is emptied into sewers, dumped directly onto the ground, thrown in the trash or into surface water. The State of Tennessee estimates that over 1,000,000 gallons of used motor oil is generated each year in the state. Of this, up to 60% is estimated ending up eventually in the state's water resources. For instance, the Coast Guard estimates that sewage treatment plants discharge twice as much oil into coastal waters as do tanker accidents (15 million gallons per year versus 7.5 million gallons from accidents).

The facts about used oil include, re-refining used oil takes only about one third the energy of refining crude oil to lubricant quality. If all the used oil improperly disposed of by do-it-yourselfers were recycled, it could produce enough energy to power 360,000 homes each year or 96 million quarts of high quality motor oil. A gallon of used oil can ruin a million gallons of fresh water.

The state recognized the improper management of waste oil as a problem and required the regional solid waste plans to address this issue. The Solid Waste Disposal Act bans the disposal of waste oil in landfills after January 1, 1995 and requires each county to develop an infrastructure for accepting, storing, recycling or safe disposal of these materials by the end of 1994.

2. Goals

The Region's goals in regards to management of used oil include:

1. Maintain and support private entities to offer collection of used oil
2. Educate the population regarding the potential impacts of mismanagement of used oil and environmentally sound disposal options
3. Provide drop off used oil disposal and recycling facilities at existing convenience centers to supplement the existing retail facilities

3. Current System

Bradley and McMinn Counties and Chattanooga (Warner Park Recycling Center) presently have a collection system for waste oil.

4. Implementation

In order to comply with the requirements of the Solid Waste Management Act, each county needs to provide at least one site by January 1, 1995 to receive and store waste oil. At this time, the region intends to have public service to address the issue of used motor oil in compliance with the solid waste regulations.

In addition to providing the public services, the Region can research the existence of private facilities which accept used oil. The Region and the individual counties can work with the private facilities and encourage their continued involvement. The Region can coordinate with gas stations, supply stores, existing disposal facilities to circulate information. The result of the Region's research will be a listing of available private facilities in each county which will be available to potential users.

Key issues to properly implement a used oil collection program include:

1. Ensuring proper financing for the purchase of equipment, collection operations, publicity and staffing requirements;
2. Managing risks, programs must prevent mixing other materials which may be environmentally damaging or cause problems with haulers or recyclers; the oil must never be mixed with gasoline, solvents, pesticides, or other chemicals;
3. Ensure the proper management of the oil once the contracted hauler removes it from the collection site;
4. Effective educational program and advertising to encourage active participation;
5. Accurate record keeping to chart the program's costs, effectiveness, problems, cycles, impact of advertising, etc.

Different collection programs offer various benefits. Curbside collection offers the convenience and high participation rate of the users, however it is very expensive. Collection trucks would need to be retrofitted with used oil collection tanks or racks. Periodic special curbside collection of used oil are more economical to routine curbside collection. This "milk run" alternative requires substantial publicity and

coordination with the collection program. This option is still more expensive and potentially problematic than a central drop off facility and is not recommended for the Region.

A central collection station is where do-it-yourselfers can drop off used oil in an appropriate tank or drum. The station needs to be well marked and preferably manned to ensure that it is used for uncontaminated lubricating oil only. Establishing this service at manned convenience centers provides an economical option for collection of used oil. This system can work well in concert with retail facilities. Many service stations, car dealerships and retail stores have collection tanks installed for their own use and that of their customers.

The used oil needs to be picked up in a timely manner by a responsible used oil hauler and sent to reputable recyclers. The hauler must have valid license and operate in a safe and environmentally sound fashion, maintain regular records of quantities, and deliver the oil to reputable management facilities. Haulers and recyclers as are often listed in the Yellow Pages. Contact with existing private programs can provide a list of haulers in the area. The recycling facility should be evaluated prior to contracting. Visiting the site can indicate substandard practices. The recycler should have accurate records of the source of the used oil, routine laboratory checks for contaminated loads, etc. The facility should have containment measures to prevent losses and contain spills. Storage areas should be well maintained with containment in place. The facility needs to be in compliance with all applicable state and federal requirements. Inspection should be up to date and with any violations noted corrected.

An educational program can circulate valid information regarding the proper management of used oil. The State has information brochures which briefly outline the potential problems and ways to avoid them for individuals wanting to dispose of used oil. In particular used oil program educational efforts should focus on:

1. Educate the public about the used oil problem, environmental impacts
2. Encourage more responsible oil management
3. Notify do-it-yourselfers how to use the program to recycle oil

A valuable resource in setting up a used oil recycling program is EPA publication "How to Set Up a Local Program to Recycle Used Oil" (EPA/530-SW-89-039A). This publication provides several examples of brochures, posters, letters, press release, and collection tank design which are included in this chapter. The Regional educational coordinator can be responsible for the implementation of an effective waste oil management program, since the program relies so heavily on proper

education and advertising. The costs of implementing the program will be tied directly to the number of drop off stations. The cost of administration will be primarily covered by the educational coordinator's time (discussed in the educational section). The cost of collection units range from simple collection barrels to more specifically designed waste oil containers. The haulers can be contracted and negotiated based on the value of the oil to them.

5. Cost

It is recommended that the used oil program be managed under the convenience center budgets.

D. Lead Acid Batteries

1. Background

Lead acid batteries provide power to most motorized vehicles. Because of the toxic properties of lead acid batteries, it is illegal for Tennessee landfills to accept them for disposal. The batteries use a chemical reaction between sulfuric acid and lead to generate electricity. Lead acid batteries can be recycled into useable lead, sulfuric acid and plastic to make new batteries.

2. Goals

The Region's goals in regards to management of lead acid batteries include:

1. Maintain and support private entities to offer collection of used oil
2. Educate the population regarding the potential impacts of mismanagement of lead acid batteries and environmentally sound disposal options
3. Educate disposal facility operators to ensure no disposal of lead acid batteries at landfills in the Region

3. Current System

The Region, as every county in Tennessee, is covered by Tennessee law in that every retail store that sells lead acid batteries is required to accept used batteries as trade-ins. In fact, some retailers provide a discount on new batteries with the trade-in of old batteries. Recyclers then buy used batteries from retail stores. In addition, Bradley County collects lead acid batteries at the Bradley County landfill.

4. Implementation

The existing system complies with the State requirements for lead acid battery disposal. However, it is recommended that each county establish lead acid battery collection locations at landfills and/or convenience centers.

An important aspect of implementation is education. The counties will work with the retailers to emphasize the disposal options available to consumers. Local environmental groups, the county sanitation departments, earth science programs at

schools, etc. need to encourage the recycling, which includes lead acid batteries. The Region will include in the general educational program efforts towards assuring the proper disposal of more batteries. The State has information brochures which briefly outline the potential problems and ways to avoid them for individuals wanting to dispose of lead acid batteries (attached). The Region will coordinate with gas stations, supply stores, existing disposal facilities to circulate this information.

5. Cost

The waste battery program is recommended to be managed under the convenience center budgets. The vast majority of the costs of this program are covered under other programs.

E. Litter Grant Program

The State of Tennessee Department of Transportation (Maintenance Division) provides a litter grant program to counties for their use. The system is funded through a tax on the beverages in the state with a fund of \$3.4 million for this year. The money is allocated to the 95 counties based on number of miles in the county and population. The minimum grant is \$20,211 and the maximum is \$295,000. The counties are reimbursed for money spent on approved programs. The litter grant program is used primarily for road side pick up of litter. Counties use prison labor with the cost of the guard and transportation reimbursed by the litter grant to clean up county roads. The grant can also finance educational programs, if the county fulfills four of the five categories (government, school, business, media or public). The grant program recently started a program to encourage counties to use more of the grant on educational programs. The smallest grant recipients need to spend 5% of the grant on education and the largest recipients 20%. The program increases this percentage over the next three years to a 15% and 35% level.

The litter grant program is set up as a reimbursement for money spent of clean up or educational programs. This is an excellent opportunity to access funds for educational programs for the various solid waste issues addressed in this Plan. Educational/advertising programs for household hazardous waste, used oil, lead acid batteries, tires, and general recycling programs may be financed through this program. Note the TDOT emphasizes the money needs to be related to discouraging litter.

F. Recommendations

The following list is a summary of the recommendations for each of the counties within the Southeast Tennessee region. For further information, please refer to the individual reports.

- **Bledsoe/Sequatchie Counties**
 - Construct tire storage/processing/disposal area.
 - Implement waste oil collections.
 - Collect lead acid batteries at convenience centers and landfill.
 - Conduct one household hazardous waste collection per year.

- **Bradley County**
 - Maintain existing tire storage area at landfill.
 - Maintain existing waste oil collection at landfill.
 - Maintain existing lead acid battery collection at landfill.

- **Grundy County**
 - Establish one waste oil collection location.
 - Collect lead acid batteries at convenience centers and landfill.
 - Conduct one household hazardous waste collection per year (jointly with Grundy County).

- **Hamilton County**
 - Continue state approved tire storage.
 - Continue waste oil collection at Warner Park.
 - Collect lead acid batteries at designated places and landfill.
 - Conduct annual household hazardous waste collection events.

- **Marion County**
 - Construct tire storage/processing/disposal area.
 - Implement waste oil collection at landfill.
 - Collect lead acid batteries at convenience centers and landfill.
 - Conduct one household hazardous waste collection per year (jointly with Grundy County).

- **McMinn County**
 - Conduct one household hazardous waste collection per year.
 - Maintain tire storage/disposal practices.
 - Maintain existing waste oil collection.
 - Establish lead acid battery collection/storage disposal

- **Meigs County**
 - Conduct one household hazardous waste collection per year.
 - Designate McMinn County landfill as tire storage.disposal site.
 - Establish one waste oil collection/disposal location.
 - Establish lead acid battery collection/storage/disposal.

- **Polk County**
 - Conduct one household hazardous waste collection per year.
 - Designate McMinn County landfill as tire storage.disposal site.
 - Establish one waste oil collection/disposal location.
 - Establish lead acid battery collection/storage/disposal.

- **Rhea County**
 - Maintain tire storage/disposal practices.
 - Establish one waste oil collection/disposal location.
 - Develop lead acid battery collection site at transfer station.
 - Maintain annual household hazardous waste collection.

CHAPTER XI

IMPLEMENTATION: SCHEDULE, STAFFING AND FUNDING

CHAPTER XI

IMPLEMENTATION: SCHEDULE, STAFFING AND FUNDING

A. System Definition

1. System Narrative

The waste management system(s) for the Southeast Tennessee Planning Region will consist primarily of independent municipal and county systems. The portions of the plan which will be addressed at the regional level are as follows:

- a. Additional evaluation of the potential for a waste-to-energy system within the region as described in Chapter VII.
- b. Additional evaluation of the potential of the TVA companion boiler program. This program is described in a separate study sponsored by the Southeast Tennessee Development district.
- c. Education and waste reduction program: the region will secure staff (approximately 4 people) to administer and coordinate the educational and waste reduction program(s) as described herein and in the individual county reports.

The remaining portions of the plan will be addressed at the county or municipal level as follows:

- a. Public information and education.
- b. Waste reduction and recycling.
- c. Collection and transportation.
- d. Disposal and regionalization.
- e. Composting and/or other processing.
- f. Problem wastes.

The above issues (items a through f) are addressed in detail in the individual county plans (under separate cover) for each of the ten (10) counties which comprise the region. It should be noted that the development of the plan resulted in the

establishment of two (2) sub-regions. Therefore the referenced individual county reports which comprise the southeastern region are structured as follows:

- Bledsoe/Sequatchie sub-region (2) county
- McMinn/Meigs/Polk sub-region (3) county
- Grundy single county
- Marion single county
- Hamilton single county
- Bradley single county
- Rhea single county

The waste generation and diversion quantities for the Southeast region is depicted in the following Table XI-1, "Regional Waste Diversion Summary" and Table XI-2, "Proportional Flow Diagram".

3. Proposed System Map - Waste Flow Patterns

4. Institutional Structure

As stated earlier, the majority of the implementation of the plan will be accomplished at the county or municipal jurisdiction. No institutional changes are recommended at this time. It is recommended that each county hire or designate a full-time or part-time recycling coordinator and problem waste coordinator.

At the regional level, the Planning Board will act as the institutional structure for coordination of the programs which will be implemented regionally. The Board will coordinate two contracts (the education consultant and the design consultant) and will coordinate the staffing of the waste reduction plan. This staff will be funded by participation of all ten (10) counties which comprise the region. The disbursing agent for the fund will be one of two alternatives:

- a. The Regional Solid Waste Planning Board.
- b. The Regional Development District.

In addition to the above, the Regional Planning Board will coordinate the recommended supplemental and follow-up investigations regarding the regional waste-to-energy alternative plan and the TVA companion boiler progress in conjunction with the Development District.

B. Implementation Schedule

The detailed schedule of implementation of the various plan components is addressed in the individual reports (5 each individual county reports plus 2 two-county report and 1 three-county report).

The regional issues should be addressed on the following schedule:

Regional Administration

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Secure staff to administer/coordinate recycling, waste reduction and education (4 people).	█	█	█							
Follow-up investigation of the regional waste-to-energy option.	█	█								
Continue and follow-up TVA companion boiler program option.	█	█								
Routine coordination activities including periodic update of the plan.	█	█	█	█	█	█	█	█	█	█

C. Staffing And Training Requirements

The detailed staffing requirements on a county by county basis is addressed in the individual county reports (5 each individual county reports plus 1 two-county report and 1 three-county report).

The staffing requirements for the ten (10)-county region is summarized in the following Table XI-3.

**Table XI-3:
Staffing and Training Requirements**

Position	Training										
	Required	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Regional Level:											
Administrative Assist.		1									
Planners			2	1							
General:											
Supervisors											
Waste Collection:											
Supervisor/Administration											
Drivers		52	2								
Laborers		71									
Transfer Station:											
Equipment Operators			1.5								
Attendants		6	1								
Drivers											
Laborers											
Convenience Centers:											
Operators		12.5	11	9	1						
Attendants											
Drivers		1									
Laborers											
Class I Landfill(s):											
Supervisors		4									
Clerks		3									
Equipment Operators		18									
Attendants		13									
Laborers		8									
Class III/IV Landfill(s):											
Supervisors											
Clerks											
Equipment Operators		1									
Attendants											
Laborers											
Recycling Program:											
Supervisor/Coordinator		1	3.75								
Attendants											
Operators											
Drivers		3									
Composting (Yardwaste):											
Supervisor/Coordinator											
Attendants											
Operators											
Laborers											
Problem Waste:											
Supervisor/Coordinator		1	1								
Attendants											
Drivers											
Laborers											
Education:											
Coordinator:											
TOTAL		195.5	22.25	10	1						

D. Budget

1. Regional Central Administration

It is recommended one planner and one administrative assistant to administer and coordinate the regional education and source reduction program be secured. The estimated annual budget for this staff is as follows:

REGIONAL COST EDUCATION/SOURCE REDUCTION PROGRAM ESTIMATED 1995 BUDGET

Item	Cost (1995)
1 Planner @ \$30,000/year	\$ 30,000
1 Administrative Assistant	18,000
Benefits	14,400
Overhead	25,000
Advertising and Promotion	20,000
Travel	15,000
Professional Education	4,500
Printing	10,000
Office Supplies	7,500
Supplies	15,000
Sub-Total	\$154,400

Total Budget - Regional Jurisdiction, 1995, \$154,400.

1996 - 2003, \$154,400/year escalated at 3% per year for the 10-year planning period.

These costs would be apportioned among the member counties based upon waste generation quantities. (See Chapter IX.)

**INDIVIDUAL COUNTY BUDGET(S)
1995 ANNUAL COSTS**

	Waste Quantity		Curbside or Drop-Off Recycling		Yard Waste Compost		Collection		Class III/IV Landfill	Disposal	Problem Waste	Regional Cost	Total
	Tons/Year												
Bledsoe	5,404	\$10,871	---	\$87,808	---	---	\$64,575	\$4,595	---	\$1,321	\$169,170		
Sequatchie	4,934	9,216	---	87,808	---	---	64,575	2,578	---	1,206	165,383		
Bradley	61,270	23,231	---	30,000	---	124,611*	1,967,606	4,873	---	14,982	2,040,692		
Grundy	5,794	---	---	107,016	---	---	142,500	2,506	---	1,417	253,439		
Marion	21,619	13,968	18,164	312,432	---	Diversion	437,643	529	---	5,286	902,558		
Hamilton-County	52,874	176,030	---	351,133	---	---	1,825,956	2,000	---	113,413	2,468,532		
Hamilton-Chattanooga	557,934	411,818	---	2,780,370	---	Diversion	3,234,927	2,000	---	included above	8,505,182		
McMinn	41,363	4,551	---	12,420	---	134,554*	1,257,022	2,070	---	10,114	1,286,177		
Meigs	2,751	4,203	---	62,100	---	---	83,603	2,070	---	673	152,649		
Polk	6,027	4,345	---	176,985	---	---	183,161	2,070	---	1,474	368,035		
Rhea	18,459	21,277	---	147,013	---	131,283	852,780	3,105	---	4,514	1,159,972		
Total Region	778,429	\$679,510	\$18,164	\$4,155,085	\$2,321,886	\$10,114,348	\$28,396	\$154,400	\$17,471,789	(\$22.44)	per Ton		

* Not included in the total cost since waste was not subtracted from the Class I waste disposal total. Use of Class III/IV facility will result in a slightly reduced overall cost. Class III/IV disposal is required to achieve the 25% reduction goal.

**INDIVIDUAL COUNTY BUDGET(S)
1996 ANNUAL COSTS**

	Waste Quantity Tons/Year	Curbside or Drop-Off		Sludge or Yard Waste Compost	Collection	Class III/IV Landfill	Disposal	Problem Waste	Regional Cost	Total
		Recycling	Recycling							
Bledsoe	5,440	\$11,414		---	\$152,275	---	\$217,600	\$5,224	\$1,361	\$387,874
Sequatchie	4,952	9,677		---	152,275	---	198,080	3,107	1,243	364,382
Bradley	61,762	24,044		---	31,050	128,553*	2,025,575	4,657	15,431	2,100,757
Grundy	5,767	---		---	112,367	---	149,625	3,031	1,459	266,482
Marion	21,662	14,872	18,495		328,054	Diversion 118,819	449,109	956	5,445	935,750
Hamilton- County	52,781	184,832		---	368,690	---	1,829,613	3,500	116,815	2,503,450
Hamilton- Chattanooga	560,146	432,409	0		2,919,389	Diversion 2,180,588	3,758,487	3,000	included above	9,293,873
McMinn	41,364	4,710	25,450*		12,855	138,525*	1,257,052	2,142	10,418	1,287,177
Meigs	2,771	4,350	---		64,274	---	84,211	2,142	693	155,670
Polk	6,023	4,497	---		183,179	100,160*	183,039	2,142	1,518	374,375
Rhea	18,461	22,022	---		152,159	138,028	900,912	3,214	4,649	1,220,984
Total Region	781,129	\$712,827	\$18,495		\$4,476,567	\$2,437,435	\$11,053,303	\$33,115	\$159,032	\$18,890,774 (\$24.18) per Ton

* Not included in the total cost since waste was not subtracted from the Class I waste disposal total. Use of Class III/IV facility will result in a slightly reduced overall cost. Class III/IV disposal is required to achieve the 25% reduction goal.

**INDIVIDUAL COUNTY BUDGET(S)
1997 ANNUAL COSTS**

	Waste Quantity		Curbside or Drop-Off Recycling		Sludge or Yard Waste Compost		Collection		Class III/IV Landfill	Disposal	Problem Waste	Regional Cost	Total
	Tons/Year												
Bledsoe	5,465	\$11,985					\$229,038		---	\$218,600	\$10,361	\$1,402	\$471,386
Sequatchie	4,969	10,161					190,038		---	198,760	8,138	1,280	408,377
Bradley	62,257	24,886					32,137	128,553*		2,099,444	4,415	15,894	2,176,776
Grundy	5,741	---					117,985	---		199,500	8,058	1,503	327,046
Marion	21,704	15,617		18,842			334,457	Diversion	123,317	976,469	5,878	5,608	1,480,188
Hamilton-County	52,687	194,074		---			387,125	---		1,833,270	3,675	120,320	2,538,464
Hamilton-Chattanooga	562,419	454,029		0			3,065,358	Diversion	2,271,156	4,542,416	10,053	included above	10,343,012
McMinn	41,364	4,875		26,150*			13,305	138,525*		1,257,052	2,217	10,730	1,288,179
Meigs	2,791	4,502		---			66,524	---		84,818	2,217	714	158,775
Polk	6,018	4,654		---			189,590	103,666*		182,887	2,217	1,563	380,911
Rhea	18,462	22,793		---			157,485	138,028		900,970	3,326	4,789	1,227,391
Total Region	783,877	\$747,576		\$18,842			\$4,783,042	\$2,532,501		\$12,494,186	\$60,555	\$163,803	\$20,800,505 (\$26.54) per Ton

* Not included in the total cost since waste was not subtracted from the Class I waste disposal total. Use of Class III/IV facility will result in a slightly reduced overall cost. Class III/IV disposal is required to achieve the 25% reduction goal.

**INDIVIDUAL COUNTY BUDGET(S)
1998 ANNUAL COSTS**

	Waste Quantity		Curbside or Drop-Off		Sludge or Yard Waste		Collection		Class III/IV		Disposal		Problem Waste		Regional Cost		Total
	Tons/Year	Recycling	Recycling	Compost	Compost	Compost	III/IV Landfill	III/IV Landfill	Waste	Cost	Waste	Cost	Waste	Cost	Waste	Cost	
Bledsoe	5,490	\$12,584		---			\$237,728		---		\$219,600	\$10,504	\$1,444			\$481,860	
Sequatchie	4,987	10,669		---			196,778		---		199,480	8,169	1,319			416,415	
Bradley	62,758	25,757		---			33,262		132,714*		2,177,955	4,143	16,371			2,257,488	
Grundy	5,714	---		---			123,884		---		199,500	8,086	1,548			333,018	
Marion	21,745	16,396		19,207			361,679		Diversion		978,327	5,797	5,776			1,515,221	
Hamilton-County	52,594	203,778		---			406,481		---		1,965,743	3,859	123,929			2,703,790	
Hamilton-Chattanooga	564,754	476,730		0			3,218,626		Diversion		4,893,574	9,891	included above			10,984,553	
McMinn	41,365	5,043		26,850*			13,771		2,385,732		1,383,659	2,295	11,052			1,415,820	
Meigs	2,811	4,660		---			68,852		---		94,028	2,295	735			170,570	
Polk	6,013	4,817		---			196,226		107,294*		201,135	2,295	1,610			406,083	
Rhea	18,464	23,591		---			162,996		145,299		952,847	3,442	4,932			1,293,107	
Total Region	786,695	\$784,025		\$19,207			\$5,020,283		\$2,659,070		\$13,265,848	\$60,776	\$168,716			\$21,977,925 (\$27.94) per Ton	

* Not included in the total cost since waste was not subtracted from the Class I waste disposal total. Use of Class III/IV facility will result in a slightly reduced overall cost. Class III/IV disposal is required to achieve the 25% reduction goal.

**INDIVIDUAL COUNTY BUDGET(S)
1999 ANNUAL COSTS**

	Waste Quantity Tons/Year		Curbside or Drop-Off Recycling		Sludge or Yard Waste Compost		Collection		Class III/IV Landfill		Disposal		Problem Waste		Regional Cost		Total		
Bledsoe	5,516	\$13,213					\$246,853					\$220,640	\$13,155	\$1,487			\$495,348		
Squatchie	5,005	11,203					203,855					200,200	10,702	1,358			427,318		
Bradley	63,262	26,658					34,426					2,205,878	3,840	16,862			2,287,664		
Grundy	5,688	---					130,078					199,500	10,615	1,594			341,787		
Marion	21,788	17,216			19,590		379,763					980,277	8,212	5,950			1,552,089		
Hamilton-County	52,501	213,966					426,805					1,969,690	4,052	127,647			2,742,160		
Hamilton-Chattanooga	567,151	500,567			0		3,379,557					5,194,451	8,289	included above			11,568,499		
McMinn	41,365	5,222			27,650*		14,253					1,383,659	2,375	11,384			1,416,893		
Meigs	2,831	4,823					71,262					94,697	2,375	757			173,914		
Polk	6,009	4,986					203,094					201,001	2,375	1,659			413,115		
Rhea	18,466	24,417					168,701					952,970	3,562	5,080			1,300,029		
Total Region	789,582	\$822,271			\$19,590		\$5,258,647			\$2,772,015		\$13,602,963	\$69,552	\$173,778			\$22,718,816	(\$28.77)	per Ton

* Not included in the total cost since waste was not subtracted from the Class I waste disposal total. Use of Class III/IV facility will result in a slightly reduced overall cost. Class III/IV disposal is required to achieve the 25% reduction goal.

**INDIVIDUAL COUNTY BUDGET(S)
2000 ANNUAL COSTS**

	Waste		Curbside or		Sludge or		Collection		Class III/IV Landfill	Disposal	Problem Waste	Regional Cost	Total
	Quantity Tons/Year	Drop-Off Recycling	Yard Waste Compost	Drop-Off Recycling	Yard Waste Compost	Collection	Disposal	Problem Waste					
Bledsoe	5,542	\$13,874	---	\$236,437	---		\$249,390		---	\$13,311	\$1,532	\$514,544	
Sequatchie	5,022	11,763	---	191,290	---		225,990		---	10,737	1,399	441,179	
Bradley	63,765	27,591	---	35,631	---		2,258,357	148,453*		3,505	17,368	2,342,452	
Grundy	5,662	---	---	136,582	---		216,600	---		10,645	1,642	365,469	
Marion	21,831	18,077	22,994	398,752			982,180	Diversion 146,288		8,122	6,128	1,582,541	
Hamilton- County	52,409	224,664	---	448,145	---		2,125,010	---		4,254	131,477	2,933,550	
Hamilton- Chattanooga	569,618	525,595	0	3,548,535			5,638,937	Diversion 2,615,843		7,817	included above	12,336,727	
McMinn	41,366	5,405	31,350*	14,752			1,383,659	157,917*		2,458	11,725	1,417,999	
Meigs	2,851	4,992	---	73,756	---		95,366	---		2,458	780	177,352	
Polk	6,004	5,160	---	210,202	---		200,834	114,936*		2,458	1,708	420,362	
Rhea	18,468	25,272	---	174,606	---		1,027,101	155,081		3,687	5,233	1,390,980	
Total Region	792,538	\$862,393	\$22,994	\$5,468,688			\$14,403,424	\$2,917,212		\$69,452	\$178,992	\$23,923,155 (\$30.19) per Ton	

* Not included in the total cost since waste was not subtracted from the Class I waste disposal total. Use of Class III/IV facility will result in a slightly reduced overall cost. Class III/IV disposal is required to achieve the 25% reduction goal.

**INDIVIDUAL COUNTY BUDGET(S)
2001 ANNUAL COSTS**

	Waste Quantity Tons/Year	Curbside or Drop-Off		Sludge or Yard Waste Compost	Collection	Class III/IV Landfill	Disposal	Problem Waste	Regional Cost	Total
		Recycling	Recycling							
Bledsoe	5,552	\$14,568		---	\$226,501	---	\$249,840	\$15,978	\$1,578	\$508,465
Sequatchie	5,028	12,351		---	179,097	---	226,260	13,274	1,441	432,423
Bradley	64,108	28,551		---	36,878	148,453*	2,367,828	3,135	17,889	2,454,281
Grundy	5,630	---		---	143,411	---	216,600	13,179	1,692	374,882
Marion	21,874	18,981		23,416	418,689	Diversion 151,754	984,130	10,529	6,312	1,613,811
Hamilton- County	52,200	235,897		---	470,552	---	10,926,092	4,467	135,421	11,772,429
Hamilton- Chattanooga	571,238	551,875		0	3,725,962	Diversion 2,725,116	6,327,664	11,752	included above	13,342,369
McMinn	41,287	5,594	32,250*		15,268	157,917*	1,572,622	2,544	12,077	1,608,105
Meigs	2,865	5,167		---	76,337	---	109,128	2,544	803	193,979
Polk	6,000	5,341		---	217,559	118,959*	228,540	2,544	1,760	455,744
Rhea	18,433	26,157		---	180,717	155,081	1,024,789	3,816	5,390	1,395,950
Total Region	794,215	\$904,482		\$23,416	\$5,690,971	\$3,031,951	\$24,233,493	\$83,762	\$184,363	\$34,152,438 (\$43.00) per Ton

* Not included in the total cost since waste was not subtracted from the Class I waste disposal total. Use of Class III/IV facility will result in a slightly reduced overall cost. Class III/IV disposal is required to achieve the 25% reduction goal.

**INDIVIDUAL COUNTY BUDGET(S)
2002 ANNUAL COSTS**

	Waste Quantity Tons/Year	Curbside or Drop-Off		Sludge or Yard Waste Compost	Collection	Class III/IV Landfill	Disposal	Problem Waste	Regional Cost	Total
		Recycling	Recycling							
Bledsoe	5,578	\$15,296		---	\$237,826	---	\$251,010	\$16,151	\$1,625	\$521,908
Sequatchie	5,046	12,969		---	188,052	---	227,070	13,313	1,484	442,888
Bradley	64,621	29,556		---	38,169	153,475*	2,476,945	2,726	18,426	2,565,822
Grundy	5,657	---		---	150,582	---	216,600	13,212	1,742	382,136
Marion	21,918	19,930		23,859	439,624	Diversion 157,494	1,117,331	10,430	6,501	1,775,169
Hamilton- County	52,294	247,691		---	494,080	---	2,133,511	4,690	139,484	3,019,456
Hamilton- Chattanooga	575,279	579,469		0	3,912,260	Diversion 2,868,728	7,274,409	11,232	included above	14,646,098
McMinn	41,288	5,790		33,150*	15,802	164,433*	1,572,660	2,633	12,439	1,609,324
Meigs	2,885	5,347		---	79,009	---	109,890	2,633	827	197,706
Polk	5,981	5,528		---	225,174	123,123*	227,816	2,633	1,812	462,963
Rhea	18,435	27,072		---	187,042	164,980	1,093,723	3,950	5,551	1,482,318
Total Region	798,982	\$948,648		\$23,859	\$5,967,620	\$3,191,202	\$16,700,965	\$83,603	\$189,891	\$27,105,788 (\$33.93) per Ton

* Not included in the total cost since waste was not subtracted from the Class I waste disposal total. Use of Class III/IV facility will result in a slightly reduced overall cost. Class III/IV disposal is required to achieve the 25% reduction goal.

**INDIVIDUAL COUNTY BUDGET(S)
2003 ANNUAL COSTS**

	Waste Quantity Tons/Year	Curbside or Drop-Off Recycling	Sludge or Yard Waste Compost	Collection	Class III/IV Landfill	Disposal	Problem Waste	Regional Cost	Total
Bledsoe	5,604	\$16,061	---	\$249,717	---	\$252,108	\$18,834	\$1,674	\$538,394
Sequatchie	5,059	13,617	---	197,454	---	227,655	15,853	1,529	456,108
Bradley	65,137	30,590	---	39,505	153,475*	2,568,974	2,278	18,979	2,660,326
Grundy	5,684	---	---	158,111	---	233,700	15,748	1,795	409,354
Marion	21,960	20,926	24,324	461,605	Diversion 163,521	1,119,488	12,827	6,696	1,809,387
Hamilton- County	52,388	260,076	---	518,784	---	2,335,550	4,925	143,668	3,263,003
Hamilton- Chattanooga	579,388	608,442	0	4,107,873	Diversion 2,991,721	7,909,836	15,117	included above	15,632,989
McMinn	41,288	5,993	34,150*	16,355	164,433*	1,572,660	2,725	12,813	1,610,546
Meigs	2,906	5,535	---	81,774	---	110,690	2,725	852	201,576
Polk	5,987	5,722	---	233,055	127,432*	288,045	2,725	1,867	531,414
Rhea	18,437	28,020	---	193,589	164,980	1,093,793	4,088	5,718	1,490,188
Total Region	803,838	\$994,982	\$24,324	\$6,257,822	\$3,320,222	\$17,712,499	\$97,845	\$195,591	\$28,603,285 (\$35.58) per Ton

* Not included in the total cost since waste was not subtracted from the Class I waste disposal total. Use of Class III/IV facility will result in a slightly reduced overall cost. Class III/IV disposal is required to achieve the 25% reduction goal.

3. Financing of Capital Improvements

It is recommended that capital expenditures for relatively short term requirements such as vehicles, drop-off containers, etc. be accomplished through short term (3 to 5 years) bank notes at the local level in the normal public works fashion.

Large expenditures for convenience centers, landfill construction, etc. should be financed through the sale of long term (10 to 20 year) revenue bonds using "tip fee" revenues to pay the attendant debt service.

Financing of the regional expenses will be addressed by an assessment of each governing jurisdiction within the region as a function of their respective waste generation rate.

Obviously, expert advice will be required from the financial community and bond underwriters in structuring specific funding programs.

CHAPTER XII

ALLOCATION OF IMPLEMENTATION RESPONSIBILITIES:

PLAN ADOPTION AND SUBMISSION

**CHAPTER XII
ALLOCATION OF IMPLEMENTATION RESPONSIBILITIES:
PLAN ADOPTION AND SUBMISSION**

A. Allocation Of Implementation Responsibilities

As indicated in Chapter XI herein the waste management system(s) and the various elements of each system, will be implemented by the respective counties and municipalities which comprise the Southeast Tennessee Planning Region.

The elements of the regional solid waste plan which are allocated to the regional jurisdiction will be administered by the Regional Solid Waste Planning Board which can delegate the implementation to the Southeast Tennessee Development District. If desired, elements of the plan which are allocated to the regional jurisdiction include:

1. Education and waste reduction programs (see Chapter IX).
2. Additional (Phase II) evaluation of the potential for a waste-to-energy system within the region as described in Chapter VII.
3. Continuing evaluation of the potential of the "TVA Companion Boiler Program".
4. Continuous monitoring of the plan schedule, cost and implementation including data collection and reporting.

The recommended budget for the regional jurisdiction for the preceding elements of the plan is \$154,400 for 1995 and \$154,400 per year thereafter escalated at 3% per year. The remaining elements of the plan are allocated to the individual member counties and municipalities for implementation and funding including:

Collection programs	Drop-off recycling
Convenience centers	Curbside recycling
Transfer stations	Yard waste composting
Class I landfills	Sludge composting
Class III/IV landfills	Problem wastes
Hauling	Education (local)

B. Plan Adoption

The plan requires formal adoption by resolution of the regional Administrative Board and signed by the Board Chairman. The County Commission of each member county must ratify acceptance of the plan and acknowledge their respective jurisdictional responsibilities as part of the region.

Three copies of the plan should be submitted to the Division of Solid Waste Assistance, State of Tennessee, on the required date. A copy of the adoption resolution and minutes of each County Commission's meeting ratifying the plan must be included with the submittal letter.

CHAPTER XIII

FLOW CONTROL AND PERMIT APPLICATION REVIEW

CHAPTER XIII

FLOW CONTROL AND PERMIT APPLICATION REVIEW

A. Flow Control

The Solid Waste Management Act of 1991 authorizes regions with approved plans to exercise certain flow control powers in accordance with the plan. The Act permits regions to exercise two (2) types of flow control as follows:

1. Out-of-region waste ban

Out-of-region bans are permitted in order to permit a region to carefully shepherd the capacity of its solid waste management facilities. The ban must apply equally to all waste generated outside of the region's boundaries. The Act does exclude certain existing waste source arrangements from the exercise of flow control under a "grandfather" clause and an impairment of contract clause.

2. Intra-region flow control

Intra-region flow control is permitted in order to address public health and safety and transportation management concerns in a coordinated manner, and to permit regions to guarantee a flow of waste as a revenue stream for financing bonds for municipal solid waste management facilities.

Out-Of-Region Waste Bans

The only solid waste management facility (landfill) within the Southeast Tennessee Region which is knowingly or by agreement accepting waste from outside the region is Marion County. Marion County is receiving waste from Dade County, Georgia and plans to continue accepting this waste during the duration of the plan. For this reason combined with the potential development of a waste-to-energy facility which could benefit from additional waste from outside the region, it is not considered reasonable or prudent for the region to exercise its power to ban out-of-region waste at this time.

This is not meant, however, to preclude any city, county, authority or the planning region from invoking a ban on out-of-region waste should it become necessary or desired at some future date.

Intra-Region Flow Control

Implementation of the base integrated solid waste management plan as presented herein does not require flow control regulation beyond that afforded by current or planned agreements between public entities. However, the potential development of a waste-to-energy facility combined with one or more regional recycling/refuse derived fuel (RDF) processing facilities may require flow control regulation at some point in the future.

Specific flow control regulation is not designed into the plan at this time; however, future development and/or revisions to the plan may dictate that the issue of flow control be revisited in the future.

The following report on flow control presents some general information on the topic from a legal perspective. The report was prepared by Mr. John Williams, an environmental attorney in private practice, located in Nashville, Tennessee.

FLOW CONTROL

The term "flow control" refers to the power of a state or local government to direct the flow of municipal solid waste to a particular processing or disposal facility or facilities. Flow control is not a new concept. Several states have enacted statutes (or have allowed local governments to enact ordinances) requiring that the solid waste collected in a particular jurisdiction be taken to a particular landfill, incinerator, processing facility, or transfer station.

If the solid waste facility is publicly owned and financed through bonds, the revenue received from tipping fees is generally used to pay the principal and interest on the bonds. Therefore, the facility must receive sufficient waste to generate revenue adequate for that purpose. The tipping fee revenue may also be used to pay for recycling and composting programs and other components of an integrated solid waste management program.

Many states (including Tennessee) have enacted solid waste management acts which set waste reduction goals. Flow control is considered an essential tool to enable a local government to meet the waste reduction goal because it allows the local government to direct waste to recycling and composting facilities.

Opponents of flow control contend that it undermines competition and may result in inefficiencies in the solid waste management system.

This memorandum discusses the legal authority by which a municipal solid waste region in Tennessee may exercise flow control power and the legal issues related to that exercise of flow control power.

I. Solid Waste Management Act of 1991

For most municipal solid waste regions in Tennessee, the Solid Waste Management Act of 1991 will be the legal basis for enacting flow control. The only exception is counties with municipal solid waste incinerators (Davidson and Sumner), which may also utilize the Energy Production Facilities law (T.C.A. §7-54-103(d)) as a legal basis for imposing flow control.

The Solid Waste Management Act is Public Chapter 451 of the Public Acts of 1991. Most of the act is codified at T.C.A. §§68-211-801 et seq.

Pursuant to T.C.A. §68-211-814(b)(1)(A), a municipal solid waste region may "regulate the flow of collected municipal solid waste generated within the region." Such regulation may occur only after the region's 10-year plan has been approved by the State Planning Office.

If a region decides to implement flow control, the mechanics for doing so are set forth in T.C.A. §68-211-814(b)(1)(A). First, the region's board must conduct a public hearing. Then the board must adopt a resolution stating that it is implementing flow control. Then each county and municipality in the region must adopt an ordinance implementing flow control. The resolution and ordinances should specify the facility or facilities to which the flow of municipal solid waste is being directed.

Before a region's board may adopt a flow control resolution, the region must demonstrate to the State Planning Office that the region has considered the utilization of any municipal solid waste management facility in existence within the region on July 1, 1991, which meets Subtitle D regulations. If the region decides not to use an existing facility, the region must show that its decision not to use the facility is based upon three findings:

- 1) the facility is environmentally unsound or inadequate to meet the region's 10-year capacity assurance plan;
- 2) the costs for using the facility are inconsistent with (i.e., higher than) comparable facilities in Tennessee, or the facility is operating in a manner which is inconsistent with the plan; and
- 3) the waste subject to flow control will be sent to a facility or facilities which meet all state and federal regulations.

T.C.A. §68-211-814(b)(1)(C) allows an "aggrieved person" to appeal the region's decision to implement flow control to any chancery court within the region.

A region's flow control power extends only to solid waste. A region may not restrict the flow of "recovered materials" (i.e., those materials which have been removed from the solid waste stream for sale, use, reuse, or recycling). T.C.A. §68-211-814(b)(5).

Another part of Public Chapter 451 of the Public Acts of 1991 was the Solid Waste Authority Act of 1991, which contains flow control provisions applicable to a solid waste authority. If any local government(s) within a municipal solid waste region choose(s) to establish a solid waste authority, T.C.A. §68-211-906(b) gives that Authority the power "to exercise exclusive jurisdiction and exclusive right to control the collection of solid waste within its boundaries, and to control the disposition of solid waste collected within its boundaries." The governing body of each county and municipality which formed the Authority must concur in the exercise of flow control power by the Authority.

Under §68-211-906(b), then, a Solid Waste Authority is given the power to control the collection and disposal of municipal solid waste within its boundaries. By contrast, a region may regulate only the flow of collected municipal solid waste generated within the region. This means that a

region may regulate the place of disposal of the waste, but not the collection itself.

T.C.A. §68-211-907 contains additional flow control language for solid waste authorities, supplemental to that of §68-211-906(b). §68-211-907 provides that a Solid Waste Authority may "regulate the flow of all municipal solid waste within the county or counties constituting the authority" and may "require the disposal of any transported waste at a specific solid waste disposal facility."

Violation of any ordinance or resolution enacted by any local government which has formed an Authority is a Class A misdemeanor, and each day of continued violation is a separate offense. Any court of competent jurisdiction is empowered to enjoin violations of an ordinance enacted by a local government which has formed an Authority. T.C.A. §68-211-918.

An Authority's decision to exercise flow control power is appealable to any chancery court in the county or counties which have formed the Authority. T.C.A. §68-211-814(b)(1)(C).

No Solid Waste Authority may be formed unless each county governing body in the municipal solid waste region has approved its creation. T.C.A. §68-211-903(a). However, an Authority may be formed prior to the State Planning Office's approval of a region's 10-year plan.

Once an Authority has been formed, there is nothing in the Solid Waste Authority Act of 1991 which expressly forbids the Authority from exercising flow control power before the region's plan has been approved by the State Planning Office. The use of the words "region or solid waste authority" in T.C.A. §68-211-814(b)(1)(A) could be interpreted to forbid the Authority from exercising flow control power before the region's plan has been approved. This is an ambiguous point in the statute.

Another ambiguity is whether an Authority must justify its decision not to use an existing municipal solid waste management facility within the region served by the Authority (as a region's board is required to do). The use of the

words "region or authority" in T.C.A. §68-211-814(b)(1)(A) suggests that an Authority must do so. However, no comparable language is found in T.C.A. §68-211-906(b) or §68-211-907, and those sections do not adopt by reference the requirements of §68-211-814(b)(1)(A).

II. Court Cases Involving Challenges to Flow Control

Just as flow control is not a new concept, neither is the litigation over flow control. In 1896 the Board of Supervisors of the City of San Francisco granted by ordinance to a particular company the exclusive right to collect and incinerate the city's garbage. The ordinance made it unlawful for any person to take the city's garbage anywhere except to the grantee's incinerator. A competitor challenged the constitutionality of the ordinance. In California Reduction Co. v. Sanitary Reduction Works, 199 U.S. 306 (1905), the U.S. Supreme Court upheld the ordinance as a valid exercise of the city's police power. The Court rejected the argument that the ordinance deprived people of their property without due process of law in violation of the Fourteenth Amendment. The Court found that the ordinance was enacted as a means to protect the public health.

In recent years the primary legal challenge to flow control laws has been under the Commerce Clause of the United States Constitution. Article I, Section 8, Clause 3 of the Constitution provides: "The Congress shall have Power ... To regulate Commerce ... among the several States." This Clause gives Congress the power to enact laws regulating interstate commerce. It has also been interpreted to limit the power of states to erect barriers to interstate trade. This latter doctrine is known as the "dormant Commerce Clause" doctrine.

In the last 12 years, several federal courts have evaluated the constitutionality of state and local laws

in light of the dormant Commerce Clause doctrine. The courts are evenly divided between those which have upheld flow control laws and those which have invalidated flow control laws.

These cases have one common element: they all involve the transportation of solid waste from one state to another state. The plaintiff is generally a hauler who collects waste in one state and transports it to a landfill or incinerator in another state. The enactment of a flow control ordinance has the effect of preventing the hauler from taking the waste to the out-of-state disposal facility.

Two federal circuit courts of appeals (the First and the Eighth) have ruled that the flow control ordinance places an unconstitutional burden on interstate commerce. Two other circuit courts of appeals (the Third and the Sixth) have ruled that the flow control ordinance does not discriminate against interstate commerce and is therefore constitutional.

Because of this split of authority in the federal courts, the U.S. Supreme Court has agreed to hear an appeal involving a flow control ordinance enacted by the Town of Clarkston, New York. The Supreme Court's decision will likely be rendered sometime in 1994.

Because Tennessee is located within the jurisdiction of the Sixth Circuit Court of Appeals, the decisions of that court are binding on federal courts in Tennessee. In Hybud Equipment Corp. v. Akron, 654 F.2d 1187 (6th Cir. 1981), remanded on another issue, 455 U.S. 931 (1982), the Sixth Circuit upheld the constitutionality of a flow control ordinance adopted by the city council in Akron, Ohio. That decision is the law in Tennessee until the Supreme Court renders its decision in the Clarkston case.

Appendix A to this memorandum contains a discussion of each reported federal court decision on flow control, as well as a discussion of the case pending before the U.S. Supreme Court.

III. Likely Effect of the Supreme Court Decision on Tennessee

If the Supreme Court upholds the Town of Clarkston's flow ordinance, the constitutionality of flow control ordinances under Tennessee law will be absolutely clear.

If the Supreme Court invalidates the Town of Clarkston's flow control ordinance, the Court's decision will be a problem only in municipal solid waste regions where waste is being transported to a landfill or incinerator in another state. If such a region adopted a flow control resolution, it might impose an unconstitutional burden on interstate commerce in waste. However, in those regions where no hauler is transporting waste across state lines, the Court's decision will likely have no impact. A flow control ordinance will be held invalid only if it places a significant burden on interstate commerce. The courts are unanimous in holding that a flow control law is a valid exercise of the state's police power and its power to protect the public health and safety, so long as no significant burden is placed on interstate commerce.

IV. Possible Congressional Action on Flow Control

Flow control is a widely discussed subject throughout the country. The U.S. Environmental Protection Agency recently conducted three public meetings to gather information for a report on flow control which will be submitted to Congress in September 1994.

Under the Commerce Clause, Congress has the power to regulate commerce "among the several States." This means that Congress could pass a federal statute expressly allowing state and local governments to enact flow control laws. The EPA study may include a recommendation as to the need for federal legislation. Two bills have already been

introduced in Congress this year to allow the use of flow control by state and local governments.

Congress will not likely act until the Supreme Court has decided the Town of Clarkston case. If the Town loses that case, there will be strong pressure from state and local governments to enact federal legislation.

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APPENDIX A

I. Cases Upholding Flow Control Laws

Because Tennessee is one of four states within the jurisdiction of the Sixth Circuit Court of Appeals, the decisions of that court are binding on federal district courts in Tennessee. In Hybud Equipment Corp. v. Akron, 654 F.2d 1187 (6th Cir. 1981), remanded on another issue, 455 U.S. 931 (1982), the Sixth Circuit Court of Appeals upheld the constitutionality of an Akron, Ohio flow control ordinance requiring that all solid waste collected in the city be taken to an incinerator owned and financed by the city. The ordinance adversely affected the plaintiffs in three ways:

- 1) the income of landfills which previously received the waste was reduced;
- 2) there was no longer any competition among disposal sites, which meant the tipping fee at the incinerator was artificially high; and
- 3) collectors could no longer recover and sell recyclables from the waste they collected.

The court rejected the plaintiffs' Due Process and Commerce Clause arguments, finding that the ordinance was a valid exercise of the police power and not a protective measure which discriminated against or otherwise burdened interstate commerce.

The most frequently cited decision upholding a flow control ordinance against a Commerce Clause challenge is J. Filiberto Sanitation, Inc. v. New Jersey Department of Environmental Protection, 857 F.2d 913 (3rd Cir. 1988). In that case a New Jersey county adopted a rule requiring that solid waste collected in that county be deposited at a county-owned transfer station which charged tipping fees to the haulers who brought waste there. Plaintiff (a hauler of solid waste) objected to the rule because the tipping fee

at the transfer station was \$100 a ton, whereas the tipping fee at a nearby Pennsylvania landfill was about \$50 a ton. Ironically, the waste taken to the transfer station was eventually taken to that same Pennsylvania landfill. The operation of the transfer station was paid for by the tipping fees charged to the haulers who were required to bring waste there.

The Third Circuit Court of Appeals defined the issue in Filiberto as "whether the challenged regulation confers an advantage upon in-state economic interests -- either directly or through imposition of a burden upon out-of-state interests -- vis-a-vis out-of-state competitors." 857 F.2d at 919. The court concluded that the plaintiff failed to establish that the ordinance was "protectionist in purpose."

The court found in Filiberto that the flow control rule serves several purposes:

- 1) to assure that all trash produced in the county is properly disposed of;
- 2) to reduce truck traffic on county roads;
- 3) to give the county an accurate gauge for planning purposes of the amount of waste generated;
- 4) to allow the county to enter long-term and short-term contracts for final disposal of waste generated in the county;
- 5) to assure that all haulers have a practical outlet for trash as the distance to landfills grows longer; and
- 6) to allow trash to be compacted for long-distance transport.

The court also found that the burden of the rule fell equally on in-state as well as out-of-state haulers operating in this county, and that the transfer station was not in competition with out-of-state landfills because the transfer station was a customer of the out-of-state landfills. The court held that "the Rule was, both in purpose and in effect, a proper exercise of the state's authority to protect the welfare of its citizenry which

placed no cognizable burden on interstate commerce." 857 F.2d at 923.

Another decision upholding a flow control statute is Harvey & Harvey v. Delaware Solid Waste Authority, 600 F. Supp. 1369 (D. Del. 1985), in which a federal district court upheld a statute requiring all waste originating in Delaware to be disposed of at public facilities in Delaware. The statute stopped the interstate transportation of waste from Delaware to out-of-state landfills and placed an economic burden on transporters who had to pay more to dispose of the waste at Delaware disposal facilities, but the court nevertheless concluded that the statute did not violate the Commerce Clause because it did not "impose a significant economic burden on out-of-state economic interests." 600 F. Supp. at 1380.

II. Cases Invalidating Flow Control Laws

Two recent federal appellate court decisions reveal a different approach to Commerce Clause analysis of flow control regulations. In Stephen D. DeVito, Jr. Trucking, Inc. v. Rhode Island Solid Waste Management Corp., 770 F. Supp. 775 (D. R.I.), aff'd, 947 F.2d 1004 (1st Cir. 1991), the court preliminarily enjoined enforcement of a resolution adopted by the Rhode Island Solid Waste Management Corporation (RISWMC) (a public corporation created by state statute) requiring that all waste collected in Rhode Island be disposed of at the state's publicly owned Central Landfill (CLF). Because the tipping fee at the CLF was so high, the plaintiff trucking company preferred to haul waste collected in Rhode Island to waste-to-energy facilities in Massachusetts and Maine, where the tipping fees were considerably lower. The court found that this flow control rule would put the plaintiff out of business. The court concluded that "the proscriptions of the Commerce Clause apply to restrictions on transporting items out of a state as well as into a state."

770 F. Supp. at 780. The court said this rule is "an essentially protectionist measure" and its "immediate purpose and effect are to increase RISWMC's revenues by preventing commercially generated waste from being transported out of Rhode Island for disposal and requiring instead that it be deposited at the CLF." 770 F. Supp. at 781. RISWMC would gain a direct benefit from this rule at the expense of out-of-state facilities and interstate commerce in waste, which is totally eliminated. After analyzing the purposes of the rule, the court held that "RISWMC has failed to establish that a total ban on interstate commerce is necessary to achieve this long term goal and that it cannot be accomplished by some less intrusive alternative." 770 F. Supp. at 785.

A similar result was reached in Waste Systems Corp. v. County of Martin, 985 F.2d 1381 (8th Cir. 1993). In that case, two Minnesota counties built an \$8 million composting facility and then enacted flow control ordinances requiring that all the compostable waste collected in those counties (about 40% of the total waste stream) be taken to the composting facility. Prior to the enactment of the flow control ordinances, about 2/3 of this waste had been going to an Iowa landfill. The county-guaranteed bonds issued to finance the composting facility were to be paid primarily from the tipping fees collected at the facility.

The Eighth Circuit Court of Appeals found that the ordinances discriminate against interstate commerce and that the burden they place on interstate commerce is "not incidental." 985 F.2d at 1387. The tipping fee at the Iowa landfill was \$30 a ton, whereas the tipping fee at the composting facility was \$72 a ton. The court found that the ordinances are "economic protectionist measures" because they "insulate the [composting facility] from competition with cheaper out-of-state alternatives." 985 F.2d at 1387-1388. The court recognized that the purpose behind the composting facility included legitimate environmental concerns, but found that "the purpose behind the Ordinances is solely economic." 985 F.2d at 1389.

In Waste Recycling, Inc. v. Southeast Alabama Solid Waste Disposal Authority, 814 F. Supp. 1566 (M.D. Ala. 1993), the plaintiff companies collect solid waste in southeastern Alabama and transport it for disposal at a landfill in northern Florida. The defendant is a public nonprofit Alabama corporation which plans to build a regional solid waste disposal facility and three transfer stations to serve a four-county area in Alabama. Three Alabama cities have signed "user contracts" with the defendant, requiring each city to adopt a flow control ordinance directing that all waste collected in each city be delivered only to the Authority's facilities. The cities adopted these ordinances.

The court held that these ordinances "impermissibly interfere with and discriminate against interstate trade" and that "the intended effect of the ordinances is pure economic protectionism." 814 F. Supp. at 1577. "By expressly limiting the disposal of waste to the Authority's facility, the ordinances have at the same time prohibited disposal outside the state of Alabama." 814 F. Supp. at 1578. One of the three ordinances allowed waste to be taken out-of-state, but imposed additional recordkeeping requirements on such waste shipments. The court found this to be impermissible discrimination against interstate commerce because the same recordkeeping requirements were not imposed on waste disposed of at the Authority's facilities.

The court rejected the defendant's argument that the ordinances "support the legitimate public purpose of ensuring a steady waste stream by creating an infrastructure of public facilities for the transportation and disposal of waste." 814 F. Supp. at 1581. The court suggested that the Authority finance its facilities through any one of several alternative means (other than tipping fees): direct bank loans, county financing, charging competitive rates, private investors, property taxes, or utility bill assessments.

The court invalidated all three flow control ordinances because they violate the Commerce Clause by "insulating [the] four-county region from the rough and tumble of interstate commerce and the economic competition that comes with it."

III. Case Pending Before the Supreme Court

C & A Carbone, Inc. v. Town of Clarkston, 182 A.D.2d 213,
587 N.Y.S.2d 681 (1992), cert. granted, 61 U.S.L.W.
3783 (U.S. May 25, 1993) (No. 92-1402)

C & A Carbone, Inc. and Recycling Products of Rockland, Inc. are interrelated corporations which receive and process solid waste at a facility located within the Town of Clarkston, New York. At that facility, the waste is sorted into two portions: waste which is recyclable and waste which is not recyclable. The waste which is not recyclable is shipped to disposal facilities outside the state of New York.

This privately owned facility received a permit from the New York Department of Environmental Conservation in 1987, authorizing it to operate as a transfer station. C & A charges a tipping fee of \$70 per ton to process waste at its facility. Its permit was valid for five years.

The Town of Clarkston closed its municipal landfill in 1989, but decided to open a transfer station on the closed landfill site and contracted with Clarkston Recycling Center, Inc. to build and operate the transfer station. Under its contract with Clarkston Recycling, the Town must deliver to the transfer station a specified tonnage of waste annually or pay a penalty to Clarkston Recycling. Under an ordinance adopted by the Town, Clarkston Recycling is allowed to charge haulers a tipping fee of \$81 per ton for processing the waste. The New York Department of Environmental Conservation issued a permit for this transfer station, valid for five years.

The Town amended its zoning code to provide that the Town shall have only one designated transfer station. The Town also enacted Local Laws 1990, No. 9, which provides that all solid waste generated within the Town must be delivered to the Town's transfer station. This ordinance also makes it unlawful to import waste from outside the Town and dump it on any property within the Town other than the Town's transfer station. In effect, then, Local Law No. 9 mandates that all solid waste

processed or otherwise handled within the Town of Clarkston (regardless of the point of origin of the waste) be processed or handled at the Town's transfer station.

Despite the passage of Local Law No. 9, C & A continued to receive and process solid waste at its transfer station. The waste processed at C & A's transfer station had been generated both within and outside the Town, including some waste from New Jersey. Vehicles leaving the C & A transfer station were headed to locations in Illinois, Indiana, West Virginia, and Florida.

The Town sought injunctive relief against C & A in the Supreme Court for Rockland County. (In New York, the trial court for a county is called the Supreme Court.) The Town alleged that C & A's actions were depriving the Town of thousands of dollars daily in uncollected revenues. The Supreme Court for Rockland County granted the Town's motion for summary judgment and enjoined C & A from operating its business in violation of the Town's ordinances.

On appeal, the Appellate Division of the New York Supreme Court held that the regulation of solid waste collection and disposal is "a function traditionally entrusted to State and local governments," is "fundamentally related to the public health and welfare," and is within the scope of the Town's police power. 587 N.Y.S.2d at 685. The Appellate Division also rejected C & A's Commerce Clause challenge to Local Law No. 9 (the "flow control" ordinance).

While recognizing that garbage is an article of commerce and that neither states nor municipalities may erect barriers to the free flow of commerce, the court stated that "the Commerce Clause protects the interstate market, not particular interstate firms." 587 N.Y.S.2d at 686. The court said the Town's ordinance "imposes no special fees, taxes, prohibitions, or duties on those transporting out-of-state articles of commerce. Rather, the local law applies evenhandedly to all solid waste processed within the Town, regardless of point of origin." Id.

The court noted the \$11 difference in the tipping

fee charged at the two transfer stations, but found that the higher fee charged at the Town's transfer station could have "nothing more than an incidental effect on interstate commerce." Therefore, the court concluded that this effect was not "impermissibly burdensome..., particularly when the 'burden' is weighed against the legitimate and significant public concerns underlying the local law." 587 N.Y.S.2d at 687. The Appellate Division upheld the lower court's grant of summary judgment in favor of the Town.

The New York Court of Appeals (New York's highest court) denied leave to appeal. Town of Clarkston v. C & A Carbone, Inc., 591 N.Y.S.2d 138 (N.Y. Ct. App. Oct. 27, 1992).

On May 25, 1993, the U. S. Supreme Court granted certiorari and will hear arguments in the case this fall. C & A Carbone, Inc. v. Town of Clarkston, 61 U.S.L.W. 3783 (U.S. May 25, 1993). In its petition for certiorari, C & A Carbone argued that the Town's flow-control ordinance ensured a captive supply of waste for the Town's transfer station, forced waste haulers to subsidize the Town's facility, and prevented waste haulers from selecting a more competitive facility in the interstate market. 24 ER 186 (May 28, 1993).

The issue upon which the Supreme Court based its grant of certiorari is stated as follows:

"Does a local law requiring the disposal of all trash, regardless of origin, at a designated local facility, and prohibiting the export of such trash out of state, constitute a burden on and discrimination against interstate commerce in violation of the Commerce Clause?"

DISINCENTIVES TO OUT-OF-REGION WASTE

Under the Solid Waste Management Act of 1991, a municipal solid waste region has two options to discourage the delivery of waste generated outside the region to a landfill located within the region.

I. Restrictions on Access

T.C.A. §68-211-814(b)(1)(B) allows a region to "restrict access" to a landfill located within the region "by excluding waste originating with persons or entities outside the region" in order to effectuate the region's 10-year plan. However, §68-211-814(b)(1)(B) contains a "grandfather" clause which provides that a landfill may continue to accept "waste from a specific source outside the region" if the landfill received waste from that source prior to July 1, 1991. The words "specific source" are not defined in the statute, although the legislative history indicates that the word "source" refers to a county or municipality.

There is also an exception to the grandfather clause. It does not apply if a landfill's acceptance of waste generated outside the region would "significantly impair" the region's ability to effectuate its 10-year plan.

If a solid waste authority is formed by one or more counties in a municipal solid waste region, the Authority may "restrict access to its solid waste disposal facilities by excluding waste originating with persons or entities outside the region." T.C.A. §68-211-907. However, an Authority may exercise this power only to the extent that the region's plan permits the Authority to do so. §68-211-907 does not contain the grandfather clause found in §68-211-814(b)(1)(B), but the use of the word "its" in §68-211-907 suggests that, under §68-211-907, an Authority is allowed to restrict access to its own solid waste

disposal facilities, but is not allowed to restrict access to those facilities which are owned by others. An Authority's power to restrict access to facilities owned by others depends upon §68-211-814(b)(1)(B), which contains the grandfather clause previously discussed.

Is there any question about the constitutionality of these provisions of the Solid Waste Management Act of 1991? Ironically, the answer is: only with respect to out-of-state waste.

In Fort Gratiot Sanitary Landfill, Inc. v. Michigan Department of Natural Resources, 112 S. Ct. 2019 (1992), the U.S. Supreme Court held that solid waste is an article of commerce and that neither a state nor a political subdivision of the state (e.g., a solid waste region) may impose a substantial burden on interstate commerce by excluding solid waste coming to a landfill from another state. The constitutional basis for this decision is the Commerce Clause of the U.S. Constitution, which provides: "The Congress shall have Power ... To regulate Commerce ... among the several States." The Commerce Clause gives Congress the power to enact laws regulating interstate commerce and has been interpreted to limit the power of states to erect barriers to interstate trade. The latter doctrine is known as the "dormant Commerce Clause" doctrine.

By its very terms, however, the Commerce Clause applies only to interstate commerce. It does not apply to intrastate commerce (i.e., articles moving in commerce within a state).

Therefore, while a region could not constitutionally rely upon T.C.A. §68-211-814(b)(1)(B) as a basis for excluding waste originating in another state, there is no reason to believe that a court would invalidate T.C.A. §68-211-814(b)(1)(B) as a proper basis for excluding waste moving from one solid waste region in Tennessee to another region.

It is also possible that Congress will enact federal legislation overruling the Supreme Court's decision in the Fort Gratiot case and expressly allowing state and local governments to enact laws erecting barriers to out-of-state waste. Such legislation would clarify the legal uncertainties which exist in this area. Several bills have been introduced in Congress this year to accomplish this goal.

II. Local Surcharge

T.C.A. §68-211-835(f)(1)(A) allows a county, municipality, or solid waste authority to impose a local "surcharge on each ton of municipal solid waste" received at a private landfill located within the county, municipality, or solid waste authority. There is no upper limit or "cap" on the amount of the local surcharge which may be imposed. However, the revenues generated by the local surcharge must be used by the county, municipality, or solid waste authority "for solid waste collection or disposal purposes." The local surcharge is sometimes referred to as a "host fee."

Where the region chooses to allow out-of-region waste to go to a landfill within the region or where the grandfather clause allows delivery of waste to a landfill from a specific source, the county hosting the landfill may desire to impose a local surcharge to fund its own solid waste management program in whole or in part. A local surcharge would also discourage the delivery of large quantities of out-of-region waste to a landfill located within the region if the surcharge were high enough.

B. Permit Application Review

The 1991 Solid Waste Management Act requires that the planning region review plans for new solid waste disposal facilities to determine compatibility of the proposal with the regional plan. The following is the proposed permit review process with estimated time periods:

New Facility Permit Application Review

A. Basis For Review

The review of any application for landfill approval with the Southeast Tennessee Region will be based upon compliance with the intent of the plan as written, approved, and adopted. The primary questions which must be answered will be as follows:

1. Will the additional landfill volume be needed for the Region to maintain environmentally acceptable and cost-effective Class I disposal volume for the waste generated within the region?
2. Will the location of the new landfill or extension within the region provide for more cost-effective disposal of Class I waste without sacrificing environmental acceptability?
3. Is the location of the facility suitable for a landfill to serve the Southeast Tennessee Region? In other words, landfills which are located at the outer edges of the region (away from major Southeast Tennessee population centers) and designed to serve out-of-region waste will be considered to be not suitably located to serve the region.
4. Will the cost impacts for providing infrastructure (roads, water, etc.) for bringing out-of-region waste into the region exceed the cost savings provided by the additional landfill facility?

B. Application And Review Procedure

1. A copy of the Part I Solid Waste Disposal Facility Permit Application shall be submitted to the chairman of the Solid Waste Planning Board prior to submittal of said document to the Division of Solid Waste Management. In addition to the DSWM Part I Application, this submittal shall include the following:

- a. Estimated total volume of the facility in tons of waste.
 - b. Proposed daily tonnage of the facility.
 - c. Proposed service area of the facility.
 - d. Map showing the location of the site suitable for advertisement.
 - e. Map showing current zoning of the site with a description of any special permits or re-zonings required and the status of same.
 - f. General site layout map showing proposed approximate landfill footprint, access roads, and solid waste management facilities proposed, etc.
 - g. Any preliminary site evaluation studies available (hydrogeologic, environmental, engineering, etc.).
 - h. An application fee will be established to cover the costs of the advertisement, public hearing, etc.
2. The Solid Waste Board Chairman will advertise the proposal in the local newspapers of the county in which the disposal facility is proposed as well as in the newspapers of any region which has a portion of their land mass within 5 miles of the proposed facility. This advertisement will include the following information:
- a. General description of the proposed facility.
 - b. Road address and location relative to incorporated or unincorporated municipalities.
 - c. Map showing the location of the site.
 - d. Date, time, and location of public hearing (must be at least 28 days after advertisement runs).
 - e. Dates of public comment period.
 - f. Address for mailing of public comments.
3. The Planning Board Chairman will send copies of the application to each member of the Planning Board, County Executives in the region, and the TN Division of Solid Waste Management.
4. The Planning Board will call a special meeting which will act as the public hearing.
5. The public hearing will be in presentation format. The applicant will present a 15 minute discussion of the proposed project. This will be followed by a fifteen minute report from a representative of the Planning Board. The public comment period will follow with comments limited to 5 minutes per person. The hearings will be documented through a court recorder.

6. At the end of the public hearing, the Planning Board will schedule another special meeting to be a minimum of two weeks and a maximum of four weeks after the public hearing.
7. At the second special meeting the Planning Board will discuss the issue and then will vote to reject or not to reject the application.
8. The region may reject an application for a new solid waste disposal facility or incinerator, or expansion of an existing solid waste disposal facility or incinerator within the region only upon determining that the application is inconsistent with the solid waste management plan adopted by the region and approved by the state planning office. The region shall document in writing the specific grounds on which the application is inconsistent with the plan. The vote will be decided by simple majority. In the event of a tie vote, any abstentions will be re-pollled for a vote. In the event that the vote remains tied, a new special meeting will be called within two weeks and the application will be voted on again. In the event that the outcome remains a tie, the application will be automatically rejected. The outcome will be provided to the Owner and the TN Division of Solid Waste Management.
9. If the Board does not reject the application, the applicant can proceed with the full permitting process of the State. The State review process will determine the technical acceptability of the proposal. The Board's decision is based on siting and need for the facility.
10. Rejection of the proposal will result in the decision that the proposal is not consistent with the Solid Waste Management plan and therefore the facility cannot proceed through the State permitting process. Where a region rejects an application, the DSWM shall not issue the permit unless they find that the decision of the region is arbitrary and capricious and unsupported in the record developed before the region.
11. Appeal of final actions of the region, shall be taken by an aggrieved person within thirty (30) days to the Davidson County Chancery Court. The court shall exercise the same review as it would in a case arising under Tennessee Code Annotated, Title 4, Chapter 5. For the purposes of this section, an "aggrieved person" shall be limited to persons applying for permits, persons who own property or live within a three (3) mile radius of the facility or site that is proposed for permitting, or cities and counties in which the proposed facility is located.

APPENDICES

Appendices

Table of Contents

APPENDIX A

- I.1 Resolutions Forming the Region**
- I.2 List of Planning Board Members**
- I.2.b Appointment Letters/Meeting Minutes with Appointments for each Member**
- I.2.c List of Current Officers**
- I.5.a Advisory Committee List of Members**
- I.5.b Advisory Committee Mission Statement**
- I.5.c Advisory Committee Activities During Plan Development**
- I.5.d Advisory Committee Probable Role in Implementation**
- II. Financial Accounting Requirement Letters**

APPENDIX B

- 1.a &**
- 1.b Copies of County Letters to Director of State Planning Office Requesting Adjustments to the 1989 Base Line Data along with Supporting Documentation**
- 1.c Copy of Letter from the Director of State Planning Office Approving the Adjustments**

APPENDIX C

- 1. Summary of Workshops and Public Meetings**

APPENDIX D

not applicable

APPENDIX E

- 1. Letters to Planning Commissions**

APPENDIX F

Miscellaneous

Planning Board Meeting Minutes

Resolutions Adopting 10-Year Plan

Information on Southeast Tennessee Planning Region Landfills

APPENDIX A

I.1 RESOLUTIONS FORMING THE REGION

BLEDSON COUNTY

DATE: July 19, 1993

RE: Solid Waste

Planning Resolution

UPON MOTION BY COMMISSIONER, Carol Swafford WHICH MOTION WAS

SECONDED BY COMMISSIONER, Haskell Mills, TO:

approve the solid waste planning resolution- does away with previous one

THE VOTE WAS AS FOLLOWS:

the motion was approved by a voice vote.

CHARLES RAINS _____

HENRY CLAY SAPP _____

OLEN WOODEN _____

GRACE SEALS _____

BOB L. DAVIS _____

GORDON SMITH _____

MICKEY HARWOOD _____

BILLY R. (POSS) MERRIMAN _____

TOM FARMER _____

WENTON HANKINS _____

HASKELL MILLS _____

CAROL SWAFFORD _____

MIKE HUTCHESON _____

RES: _____

BY: _____

ASS: _____

RESOLUTION NO. _____
A RESOLUTION

CREATING THE SOUTHEAST TENNESSEE MUNICIPAL SOLID WASTE PLANNING REGION

WHEREAS, the adoption of the Subtitle D landfill regulations by the United States Environmental Protection Agency and companion regulations adopted by the Tennessee Solid Waste Control Board will impact on both the cost and method of disposal of municipal solid waste; and

WHEREAS, at the urging and support of a coalition of local government environmental, commercial, and industrial leaders, the 97th Tennessee General Assembly enacted T.C.A. Section 68-211-801 et. seq. titled "Solid Waste Management Act of 1991"; and

WHEREAS, with the view that better planning for solid waste will help control the additional costs that will be imposed by the new landfill regulations, help protect the environment, provide an improved solid waste management system, better utilize our natural resources, and promote the education of the citizens of Tennessee in the areas of solid waste management including the need for and desirability of reduction and minimization of solid waste, local governments in Tennessee supported and work for the passage of this Act; and

WHEREAS, one of the stated public policies of this Act is to institute and maintain a comprehensive, integrated, statewide program for solid waste management; and

WHEREAS, as per T.C.A. Section 68-211-811, the nine development districts in the State of Tennessee have completed a district needs assessment which are inventories of the solid waste systems in Tennessee; and

WHEREAS, Bledsoe County's Board of County Commissioners has given consideration to the needs assessment prepared by the Southeast Tennessee Development District; and

WHEREAS, T.C.A. Section 68-211-813, requires that counties in the State of Tennessee form municipal solid waste regions no later than December 12, 1992; and

WHEREAS, the Act's state preference is the formation of multi-county regions with counties having the option of forming single or multi-county municipal solid waste regions; and

WHEREAS, the State of Tennessee will provide grant monies of varying amounts to single county, two county, and three or more county municipal solid waste region plans; and

WHEREAS, the primary and prevailing purpose of the municipal solid waste regions are the preparation of municipal solid waste regional plans which among other requirements must identify how each region will reduce its solid waste disposal per capita by twenty-five percent (25%) by December 31, 1995, and a planned capacity assurance of its disposal for a ten (10) year period; and

WHEREAS, the development of a municipal solid waste regional plan that results in the most cost effective and efficient management of municipal solid waste is in the best interest of the citizens of Bledsoe County.

NOW, THEREFORE BE IT RESOLVED, by the Board of county Commissioners of Bledsoe County, Tennessee acting pursuant to T.C.A. Section 68-211-801 et seq., that there is hereby established a Municipal Solid Waste Region for and by Bledsoe, Bradley, Grundy, Hamilton, McMinn, Marion, Meigs, Polk, Rhea, and Sequatchie Counties, Tennessee; and

BE IT FURTHER RESOLVED, that this Resolution by the Board of County Commissioners of Bledsoe County evidences and constitutes the agreement of Southeast Tennessee Counties in the joint formation of a multi-county municipal solid waste region; and

BE IT FURTHER RESOLVED, that pursuant to T.C.A. Section 68-211-813(b)(1), a Municipal Solid Waste Region Board is hereby established to administer the activities of this Region; and

BE IT FURTHER RESOLVED, that this Municipal Solid Waste Region Board shall be composed of 15 members serving six year terms except that the initial terms shall be staggered with five members having two year terms; five members having four year terms; and five members having six year terms; and

BE IT FURTHER RESOLVED, that pursuant to T.C.A. Section 68-211-813(b)(1) and as part of the participating counties' agreement as evidenced and constituted by this Resolution, the Municipal Solid Waste Region Board shall be composed of members representing their respective County, and in the instance of Cities or Towns which collect or provide disposal services through their own initiative or by contract, members representing the cities or towns; and

BE IT FURTHER RESOLVED, that a member of the Municipal Solid Waste Region Board shall be appointed by each County Executive and a member shall be appointed by each Mayor of the Cities of Cleveland and Chattanooga; and that the Mayors of other eligible Cities or Towns shall appoint one of three members selected by the Southeast Tennessee City Managers Group or join in the appointment of a County Executive's appointment or the appointment of the Mayor of Chattanooga or the Mayor of Cleveland and that all members so appointed, shall be approved by the respective Board of County Commissioners and Municipal governing bodies; and

BE IT FURTHER RESOLVED, that this Municipal Solid Waste Region Board shall have all powers and duties as granted it by T.C.A. Section 68-211-813 et seq. and, as part of the participating counties agreement as evidenced and constituted by this Resolution, it shall have the additional rights and is empowered to utilize existing governmental personnel, services, facilities, and records of the counties which are parties to this agreement and to employ or contract with persons, private consulting firms, and/or governmental, quasi-governmental, and public entities and agencies in the performance of its duty to cause a municipal solid waste region plan to be produced; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board shall serve in a planning capacity, and implementation of the municipal solid waste region plan shall require a resolution by the constituent counties of the Municipal Solid Waste Region; and

BE IT FURTHER RESOLVED, that at the Municipal Solid Waste Region Board's initial organizational 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 the 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, the counties and municipalities that are within the region, and to apply for and receive donations and grants from private corporations and foundations; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board, its agents or contractors, shall not infringe on the right of any member of the Municipal Solid Waste Region to own, operate and maintain solid waste collection and disposal facilities; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board, its agents or contractors, shall not require any member of the Municipal Solid Waste Region to accept or dispose of solid waste from any other member of the region; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board shall not interfere with or attempt to abrogate existing agreements or contractual relationships, regarding solid waste collection, transportation, or disposal among Municipal Solid Waste Region members; and

BE IT FURTHER RESOLVED, that as part of the participating counties' agreement, as evidenced and constituted by this Resolution, a single county or the Southeast Tennessee Development District 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 the passage of this Resolution, the County Clerk of Bledsoe County shall transmit a copy of this Resolution to the Tennessee State Planning Office.

RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF BLEDSOE COUNTY, TENNESSEE, this 14 day of July, 1993, the welfare of the citizens of Bledsoe County requiring it.

Attest:

Candy McHenry
County Clerk

Approved:

Ed Frazier
County Executive

Approved as to form:

[Signature]
County Attorney

RECEIVED
JUL 15 1993
I, the undersigned, County Clerk of Bledsoe County, Tennessee, do hereby certify that the foregoing is a true and correct copy of the original as the same appears in the records of said County.
Witness my hand and the seal of said County this 14th day of July, 1993.
Candy McHenry
Bledsoe County Clerk

BRADLEY COUNTY

REGULAR SESSION

May 3rd, 1993

STATE OF TENNESSEE)

COUNTY OF BRADLEY)

BE IT REMEMBERED that on the 3rd day of May, 1993, the Bradley County Commission met in REGULAR SESSION at the Courthouse In Cleveland, Tennessee, at 7:00 P.M. EDST. Present were Donna J. Hubbard, County Executive; Claude H. Climer, County Clerk; James Webb, County Attorney, and Ron Arnett, the County's Financial Advisor. On roll call the following Commissioners announced present: W. MAX AKINS, MIKE SMITH, JACKIE CALLAWAY, D. GARY DAVIS, LINDSAY HATHCOCK, JR., ROY RAGSDALE, JIMMY R. KIBLER, C. G. "JACK" KIRKPATRICK, BILL LEDFORD, J. WAYNE MOORE, LEON AUSTIN, ROY E. SMITH, BILL CREECH and H. BERNARD DIXON. TOTAL PRESENT: 14; ABSENT: NONE. There being a quorum present, Jimmy Kibler, Chairman of the Commission, called the meeting to order.

Following the Pledge of Allegiance to the Flag, Commissioner Gary Davis led in the invocation.

Commissioner Bill Ledford moved that the Minutes of the April 19th, 1993, REGULAR SESSION be approved as submitted and made an official record of the Commission; Commissioner Leon Austin seconded the motion. On roll call the Commissioners voted as follows: Akins, aye; M. Smith, aye; Callaway, aye; Davis, aye; Hathcock, aye; Ragsdale, aye; Kibler, aye; Kirkpatrick, aye; Ledford, aye; Moore, aye; Austin, aye; R. Smith, aye; Creech, aye; and Dixon, aye. TOTAL FOR: 14; OPPOSED: NONE. The motion carries.

Commissioner H. Bernard Dixon moved that the amended resolution creating the Southeast Tennessee Municipal Solid Waste Planning Region be adopted; Commissioner Jackie Callaway seconded the motion. On roll call the Commissioners voted as follows: Akins, aye; M. Smith, aye; Callaway, aye; Davis, aye; Hathcock, aye; Ragsdale, aye; Kibler, aye; Kirkpatrick, aye; Ledford, aye; Moore, aye; Austin, aye; R. Smith, aye; Creech, aye; and Dixon, aye. TOTAL FOR: 14; OPPOSED: NONE. The motion carries.

THE AMENDED RESOLUTION FOLLOWS:

RESOLUTION NO. _____
A RESOLUTION
CREATING THE SOUTHEAST TENNESSEE MUNICIPAL SOLID WASTE PLANNING
REGION

WHEREAS, the adoption of the Subtitle D landfill regulations by the United States Environmental Protection Agency and companion regulations adopted by the Tennessee Solid Waste Control Board will impact on both the cost and method of disposal of municipal solid waste; and

WHEREAS, at the urging and support of a coalition of local government environmental, commercial, and industrial leaders, the 97th Tennessee General Assembly enacted T.C.A. Section 68-211-801 et. seq., titled "Solid Waste Management Act of 1991"; and

WHEREAS, with the view that better planning for solid waste will help control the additional costs that will be imposed by the new landfill regulations, help protect the environment, provide an improved solid waste management system, better utilize our natural resources, and promote the education of the citizens of Tennessee in the areas of solid waste management including the need for and desirability of reduction and minimization of solid waste, local governments in Tennessee supported and work for the passage of this Act; and

WHEREAS, one of the stated public policies of this Act is to institute and maintain a comprehensive, integrated, statewide program for solid waste management; and

WHEREAS, as per T.C.A. Section 68-211-811, the nine development districts in the State of Tennessee have completed a district needs assessment which are inventories of the solid waste systems in Tennessee; and

WHEREAS, Bradley County's Board of County Commissioners has given consideration to the needs assessment prepared by the Southeast Tennessee Development District; and

WHEREAS, T.C.A. Section 68-211-813, requires that counties in the State of Tennessee form municipal solid waste regions no later than December 12, 1992; and

WHEREAS, the Act's state preference is the formation of multi-county regions with counties having the option of forming single or multi-county municipal solid waste regions; and

WHEREAS, the State of Tennessee will provide grant monies of varying amounts to single county, two county, and three or more county municipal solid waste region plans; and

WHEREAS, the primary and prevailing purpose of the municipal solid waste regions are the preparation of municipal solid waste regional plans which among other requirements must identify how each region will reduce its solid waste disposal per capita by twenty-five percent (25%) by December 31, 1995, and a planned capacity assurance of its disposal for a ten (10) year period; and

WHEREAS, the development of a municipal solid waste regional plan that results in the most cost effective and efficient management of municipal solid waste is in the best interest of the citizens of Bradley County.

NOW, THEREFORE BE IT RESOLVED, by the Board of county Commissioners of Bradley County, Tennessee acting pursuant to T.C.A. Section 68-211-801 et. seq., that there is hereby established a Municipal Solid Waste Region for and by Bledsoe, Bradley, Grundy, Hamilton, McMinn, Marion, Meigs, Polk, Rhea, and Sequatchie Counties, Tennessee; and

BE IT FURTHER RESOLVED, that this Resolution by the Board of County Commissioners of Bradley County evidences and constitutes the agreement of Southeast Tennessee Counties in the joint formation of a multi-county municipal solid waste region; and

BE IT FURTHER RESOLVED, that pursuant to T.C.A. Section 68-211-813(b)(1), a Municipal Solid Waste Region Board is hereby established to administer the activities of this Region; and

BE IT FURTHER RESOLVED, that this Municipal Solid Waste Region Board shall be composed of 15 members serving six year terms except that the initial terms shall be staggered with five members having two year terms; five members having four year terms; and five members having six year terms; and

BE IT FURTHER RESOLVED, that pursuant to T.C.A. Section 68-211-813(b)(1) and as part of the participating counties' agreement as evidenced and constituted by this Resolution, the Municipal Solid Waste Region Board shall be composed of members representing their respective County, and in the instance of Cities or Towns which collects or provides disposal services through their own initiative or by contract, members representing the cities or towns; and

BE IT FURTHER RESOLVED, that a member of the Municipal Solid Waste Region Board shall be appointed by each County Executive and a member shall be appointed by each Mayor of the Cities of Cleveland and Chattanooga; and that the Mayors of other eligible Cities or Towns shall appoint one of three members selected by the Southeast Tennessee City Managers Group or join in the appointment of a County Executive's appointment or the appointment of the Mayor of Chattanooga or the Mayor of Cleveland and that all members so appointed, shall be approved by the respective Board of County Commissioners and Municipal governing bodies; and

BE IT FURTHER RESOLVED, that this Municipal Solid Waste Region Board shall have all powers and duties as granted it by T.C.A. Section 68-211-813 et seq. and, as part of the participating counties agreement as evidenced and constituted by this Resolution, it shall have the additional rights and is empowered to utilize existing governmental personnel, services, facilities, and records of the counties which are parties to this agreement and to employ or contract with persons, private consulting firms, and/or governmental, quasi-governmental, and public entities and agencies in the performance of its duty to cause a municipal solid waste region plan to be produced; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board shall serve in a planning capacity, and implementation of the municipal solid waste region plan shall require a resolution by the constituent counties of the Municipal Solid Waste Region; and

BE IT FURTHER RESOLVED, that at the Municipal Solid Waste Region Board's initial organizational 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 the 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, the counties and municipalities that are within the region, and to apply for and receive donations and grants from private corporations and foundations; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board, its agents or contractors, shall not infringe on the right of any member of the Municipal Solid Waste Region to own, operate and maintain solid waste collection and disposal facilities; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board, its agents or contractors, shall not require any member of the Municipal Solid Waste Region to accept or dispose of solid waste from any other member of the region; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board shall not interfere with or attempt to abrogate existing agreements or contractual relationships, regarding solid waste collection, transportation, or disposal among Municipal Solid Waste Region members; and

BE IT FURTHER RESOLVED, that as part of the participating counties' agreement, as evidenced and constituted by this Resolution, a single county or the Southeast Tennessee Development District 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 the passage of this Resolution, the County Clerk of Bradley County shall transmit a copy of this Resolution to the Tennessee State Planning Office.

RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF BRADLEY COUNTY, TENNESSEE, this 3rd day of May, 1993, the welfare of the citizens of Bradley County requiring it.

Attest:

Approved:

Claude H. Climer
County Clerk

David S. Hubbard
County Executive

Approved as to form:

James S. Will
County Attorney

STATE OF TENNESSEE } ss
COUNTY OF BRADLEY }

I, Claude H. Climer Clerk of the County Court of said county, do hereby certify that the foregoing is a true & perfect copy of the Resolution
Re: Solid Waste Planning
Region Board 18 pages 282-288

as same appears of record in my office.

Witness my hand and official seal, in Cleveland, Tennessee, this 12 day of July, 1993

Claude H. Climer, Clerk

GRUNDY COUNTY

A RESOLUTION

CREATING THE SOUTHEAST TENNESSEE MUNICIPAL SOLID WASTE PLANNING REGION

WHEREAS, the adoption of the Subtitle D landfill regulations by the United States Environmental Protection Agency and companion regulations adopted by the Tennessee Solid Waste Control Board will impact on both the cost and method of disposal of municipal solid waste; and

WHEREAS, at the urging and support of a coalition of local government environmental, commercial, and industrial leaders, the 97th Tennessee General Assembly enacted T.C.A. Section 68-211-801 et. seq. titled "Solid Waste Management Act of 1991"; and

WHEREAS, with the view that better planning for solid waste will help control the additional costs that will be imposed by the new landfill regulations, help protect the environment, provide an improved solid waste management system, better utilize our natural resources, and promote the education of the citizens of Tennessee in the areas of solid waste management including the need for and desirability of reduction and minimization of solid waste, local governments in Tennessee supported and work for the passage of this Act; and

WHEREAS, one of the stated public policies of this Act is to institute and maintain a comprehensive, integrated, statewide program for solid waste management; and

WHEREAS, as per T.C.A. Section 68-211-811, the nine development districts in the State of Tennessee have completed a district needs assessment which are inventories of the solid waste systems in Tennessee; and

WHEREAS, Grundy County's Board of County Commissioners has given consideration to the needs assessment prepared by the Southeast Tennessee Development District; and

WHEREAS, T.C.A. Section 68-211-813, requires that counties in the State of Tennessee form municipal solid waste regions no later than December 12, 1992; and

WHEREAS, the Act's state preference is the formation of multi-county regions with counties having the option of forming single or multi-county municipal solid waste regions; and

WHEREAS, the State of Tennessee will provide grant monies of varying amounts to single county, two county, and three or more county municipal solid waste region plans; and

WHEREAS, the primary and prevailing purpose of the municipal solid waste regions are the preparation of municipal solid waste regional plans which among other requirements must identify how each region will reduce its solid waste disposal per capita by twenty-five percent (25%) by December 31, 1995, and a planned capacity assurance of its disposal for a ten (10) year period; and

WHEREAS, the development of a municipal solid waste regional plan that results in the most cost effective and efficient management of municipal solid waste is in the best interest of the citizens of Grundy County.

NOW, THEREFORE BE IT RESOLVED, by the Board of county Commissioners of Grundy County, Tennessee acting pursuant to T.C.A. Section 68-211-801 et. seq., that there is hereby established a Municipal Solid Waste Region for and by Bledsoe, Bradley, Grundy, Hamilton, McMinn, Marion, Meigs, Polk, Rhea, and Sequatchie Counties, Tennessee; and

BE IT FURTHER RESOLVED, that this Resolution by the Board of County Commissioners of Grundy County evidences and constitutes the agreement of Southeast Tennessee Counties in the joint formation of a multi-county municipal solid waste region; and

BE IT FURTHER RESOLVED, that pursuant to T.C.A. Section 68-211-813(b)(1), a Municipal Solid Waste Region Board is hereby established to administer the activities of this Region; and

BE IT FURTHER RESOLVED, that this Municipal Solid Waste Region Board shall be composed of 15 members serving six year terms except that the initial terms shall be staggered with five members having two year terms; five members having four year terms; and five members having six year terms; and

BE IT FURTHER RESOLVED, that pursuant to T.C.A. Section 68-211-813(b)(1) and as part of the participating counties' agreement as evidenced and constituted by this Resolution, the Municipal Solid Waste Region Board shall be composed of members representing their respective County, and in the instance of Cities or Towns which collects or provides disposal services through their own initiative or by contract, members representing the cities or towns; and

BE IT FURTHER RESOLVED, that a member of the Municipal Solid Waste Region Board shall be appointed by each County Executive and a member shall be appointed by each Mayor of the Cities of Cleveland and Chattanooga; and that the Mayors of other eligible Cities or Towns shall appoint one of three members selected by the Southeast Tennessee City Managers Group or join in the appointment of a County Executive's appointment or the appointment of the Mayor of Chattanooga or the Mayor of Cleveland and that all members so appointed, shall be approved by the respective Board of County Commissioners and Municipal governing bodies; and

BE IT FURTHER RESOLVED, that this Municipal Solid Waste Region Board shall have all powers and duties as granted it by T.C.A. Section 68-211-813 et seq. and, as part of the participating counties agreement as evidenced and constituted by this Resolution, it shall have the additional rights and is empowered to utilize existing governmental personnel, services, facilities, and records of the counties which are parties to this agreement and to employ or contract with persons, private consulting firms, and/or governmental, quasi-governmental, and public entities and agencies in the performance of its duty to cause a municipal solid waste region plan to be produced; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board shall serve in a planning capacity, and implementation of the municipal solid waste region plan shall require a resolution by the constituent counties of the Municipal Solid Waste Region; and

BE IT FURTHER RESOLVED, that at the Municipal Solid Waste Region Board's initial organizational 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 the 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, the counties and municipalities that are within the region, and to apply for and receive donations and grants from private corporations and foundations; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board, its agents or contractors, shall not infringe on the right of any member of the Municipal Solid Waste Region to own, operate and maintain solid waste collection and disposal facilities; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board, its agents or contractors, shall not require any member of the Municipal Solid Waste Region to accept or dispose of solid waste from any other member of the region; and

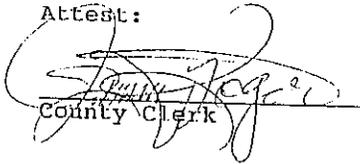
BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board shall not interfere with or attempt to abrogate existing agreements or contractual relationships, regarding solid waste collection, transportation, or disposal among Municipal Solid Waste Region members; and

BE IT FURTHER RESOLVED, that as part of the participating counties' agreement, as evidenced and constituted by this Resolution, a single county or the Southeast Tennessee Development District 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 the passage of this Resolution, the County Clerk of Grundy County shall transmit a copy of this Resolution to the Tennessee State Planning Office.

RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF GRUNDY COUNTY, TENNESSEE, this 9th day of April, 1993, the welfare of the citizens of Grundy County requiring it.

Attest:

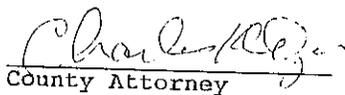

County Clerk

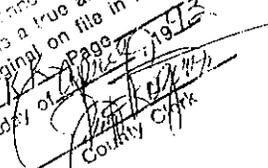
Approved:


County Executive



Approved as to form:


County Attorney

I, _____, County Clerk of Grundy County, Tennessee do hereby certify that this is a true and exact copy of the original on file in my office. Book _____ Page _____ this the _____ day of _____, 1993.

County Clerk

HAMILTON COUNTY



HAMILTON COUNTY

Office Of The County Clerk

ROOM 201, COURTHOUSE, CHATTANOOGA, TENNESSEE 37402

MAY - 7 1993

ROUTING

WILLIAM F. (BILL) KNOWLES
County Clerk

Original	<i>File</i>		
Copies			
	<i>30</i>	<i>May 5, 1993</i>	

Dr. Ruth Neff
Governor's State Planning Office
307 John Sevier Building
500 Charlotte Avenue
Nashville TN 37243-0001

Dear Dr. Neff:

Enclosed is Hamilton County Resolution 593-18. The Hamilton County Commission directed that I submit a copy to your office.

If we can provide additional information as to the minutes surrounding the adoption of this resolution, please let me know.

With best wishes,

Sincerely,

Handwritten signature of William F. (Bill) Knowles in cursive.

William F. (Bill) Knowles

WFK/bck
Enclosure

cc: Commission Chairman Rheubin Taylor
County Executive Dalton Roberts
Joe Guthrie, Executive Director, CARCOG ✓



Hamilton County Board of Commissioners

RESOLUTION

No. 593-18

A RESOLUTION CREATING THE SOUTHEAST TENNESSEE MUNICIPAL SOLID WASTE PLANNING REGION.

- WHEREAS, the adoption of the Subtitle D landfill regulations by the United States Environmental Protection Agency and companion regulations adopted by the Tennessee Solid Waste Control Board will impact on both the cost and method of disposal of municipal solid waste; and,
- WHEREAS, at the urging and support of a coalition of local government environmental, commercial, and industrial leaders, the 97th Tennessee General Assembly enacted T.C.A. Section 68-211-801 et. seq. titled "Solid Waste Management Act of 1991"; and,
- WHEREAS, with the view that better planning for solid waste will help control the additional costs that will be imposed by the new landfill regulations, help protect the environment, provide an improved solid waste management system, better utilize our natural resources, and promote the education of the citizens of Tennessee in the areas of solid waste management including the need for and desirability of reduction and minimization of solid waste, local governments in Tennessee supported and work for the passage of this Act; and,
- WHEREAS, one of the stated public policies of this Act is to institute and maintain a comprehensive, integrated, statewide program for solid waste management; and,
- WHEREAS, as per T.C.A. Section 68-211-811, the nine development districts in the State of Tennessee have completed a district needs assessment which are inventories of the solid waste systems in Tennessee; and,
- WHEREAS, Hamilton County's Board of County Commissioners has given consideration to the needs assessment prepared by the Southeast Tennessee Development District; and,
- WHEREAS, T.C.A. Section 68-211-813, requires that counties in the State of Tennessee form municipal solid waste regions no later than December 12, 1992; and,

- WHEREAS, the Act's state preference is the formation of multi-county regions with counties having the option of forming single or multi-county municipal solid waste regions; and,
- WHEREAS, the State of Tennessee will provide grant monies of varying amounts to single county, two county, and three or more county municipal solid waste region plans; and,
- WHEREAS, the primary and prevailing purpose of the municipal solid waste regions are the preparation of municipal solid waste regional plans which among other requirements must identify how each region will reduce its solid waste disposal per capita by twenty-five percent (25%) by December 31, 1995, and a planned capacity assurance of its disposal for a ten (10) year period; and,
- WHEREAS, the development of a municipal solid waste regional plan that results in the most cost effective and efficient management of municipal solid waste is in the best interest of the citizens of Hamilton County.

NOW, THEREFORE, BE IT RESOLVED BY THIS COUNTY LEGISLATIVE BODY IN SESSION ASSEMBLED:

Acting pursuant to T.C.A. Section 68-211-801 *et. seq.*, that there is hereby established a Municipal Solid Waste Region for and by Bledsoe, Bradley, Grundy, Hamilton, McMinn, Marion, Meigs, Polk, Rhea, and Sequatchie Counties, Tennessee; and,

BE IT FURTHER RESOLVED, that this Resolution by the Board of County Commissioners of Hamilton County evidences and constitutes the agreement of Southeast Tennessee Counties in the joint formation of a multi-county municipal solid waste region; and,

BE IT FURTHER RESOLVED, that pursuant to T.C.A. Section 68-211-813 (b) (1), a Municipal Solid Waste Region Board is hereby established to administer the activities of this Region; and,

BE IT FURTHER RESOLVED, that this Municipal Solid Waste Region Board shall be composed of 15 members serving six year terms except that the initial terms shall be staggered with five members having two year terms; five members having four year terms; and five members having six year terms; and,

BE IT FURTHER RESOLVED, that pursuant to T.C.A. Section 68-211-813 (b) (1) and as part of the participating counties' agreement as evidenced and constituted by this Resolution, the Municipal Solid Waste Region Board shall be composed of members representing their respective County, and in the instance of

Cities or Towns which collect or provide disposal services through their own initiative or by contract, members representing the cities or towns; and,

BE IT FURTHER RESOLVED, that a member of the Municipal Solid Waste Region Board shall be appointed by each County Executive and a member shall be appointed by each Mayor of the Cities of Cleveland and Chattanooga; and that the Mayors of other eligible Cities or Towns shall appoint one of three members selected by the Southeast Tennessee City Managers Group or join in the appointment of a County Executive's appointment or the appointment of the Mayor of Chattanooga or the Mayor of Cleveland and that all members so appointed, shall be approved by the respective Board of County Commissioners and Municipal governing bodies; and,

BE IT FURTHER RESOLVED, that this Municipal Solid Waste Region Board shall have all powers and duties as granted it by T.C.A. Section 68-211-813 et seq. and, as part of the participating counties agreement as evidenced and constituted by this Resolution, it shall have the additional rights and is empowered to utilize existing governmental personnel, services, facilities, and records of the counties which are parties to this agreement and to employ or contract with persons, private consulting firms, and/or governmental, quasi-governmental, and public entities and agencies in the performance of its duty to cause a municipal solid waste region plan to be produced; and,

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board shall serve in a planning capacity, and implementation of the municipal solid waste region plan shall require a resolution by the constituent counties of the Municipal Solid Waste Region; and,

BE IT FURTHER RESOLVED, that at the Municipal Solid Waste Region Board's initial organizational 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 the 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, the counties and municipalities that are within the region, and to apply for and receive donations and grants from private corporations and foundations; and,

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board, its agents or contractors, shall not infringe on the right of any member of the Municipal Solid Waste Region to own, operate

and maintain solid waste collection and disposal facilities;
and,

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board, its agents or contractors, shall not require any member of the Municipal Solid Waste Region to accept or dispose of solid waste from any other member of the region; and,

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board shall not interfere with or attempt to abrogate existing agreements or contractual relationships, regarding solid waste collection, transportation, or disposal among Municipal Solid Waste Region members; and,

BE IT FURTHER RESOLVED, that as part of the participating counties' agreement, as evidenced and constituted by this Resolution, a single county or the Southeast Tennessee Development District 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 the passage of this Resolution, the County Clerk of Hamilton County shall transmit a copy of this Resolution to the Tennessee State Planning Office.

BE IT FURTHER RESOLVED THAT THIS RESOLUTION TAKE EFFECT FROM AND AFTER ITS PASSAGE, THE PUBLIC WELFARE REQUIRING IT.

Hamilton County, Chattanooga, Tenn.

A. CERTIFIED TRUE COPY

This: 5th day of May, 1993

W. F. (BILL) KNOWLES, County Clerk

By Beth C. Kyle, Deputy Clerk

Approved: W. F. Knowles CERTIFICATION OF ACTION

Rejected: W. F. Knowles
County Clerk

Approved: [Signature]
County Executive

Vetoed: May 5, 1993
Date

MARION COUNTY

RESOLUTION NO. 11
A RESOLUTION
CREATING THE SOUTHEAST TENNESSEE MUNICIPAL SOLID WASTE PLANNING
REGION

WHEREAS, the adoption of the Subtitle D landfill regulations by the United States Environmental Protection Agency and companion regulations adopted by the Tennessee Solid Waste Control Board will impact on both the cost and method of disposal of municipal solid waste; and

WHEREAS, at the urging and support of a coalition of local government environmental, commercial, and industrial leaders, the 97th Tennessee General Assembly enacted T.C.A. Section 68-211-801 et. seq. titled "Solid Waste Management Act of 1991"; and

WHEREAS, with the view that better planning for solid waste will help control the additional costs that will be imposed by the new landfill regulations, help protect the environment, provide an improved solid waste management system, better utilize our natural resources, and promote the education of the citizens of Tennessee in the areas of solid waste management including the need for and desirability of reduction and minimization of solid waste, local governments in Tennessee supported and work for the passage of this Act; and

WHEREAS, one of the stated public policies of this Act is to institute and maintain a comprehensive, integrated, statewide program for solid waste management; and

WHEREAS, as per T.C.A. Section 68-211-811, the nine development districts in the State of Tennessee have completed a district needs assessment which are inventories of the solid waste systems in Tennessee; and

WHEREAS, Marion County's Board of County Commissioners has given consideration to the needs assessment prepared by the Southeast Tennessee Development District; and

WHEREAS, T.C.A. Section 68-211-813, requires that counties in the State of Tennessee form municipal solid waste regions no later than December 12, 1992; and

WHEREAS, the Act's state preference is the formation of multi-county regions with counties having the option of forming single or multi-county municipal solid waste regions; and

WHEREAS, the State of Tennessee will provide grant monies of varying amounts to single county, two county, and three or more county municipal solid waste region plans; and

WHEREAS, the primary and prevailing purpose of the municipal solid waste regions are the preparation of municipal solid waste regional plans which among other requirements must identify how each region will reduce its solid waste disposal per capita by twenty-five percent (25%) by December 31, 1995, and a planned capacity assurance of its disposal for a ten (10) year period; and

WHEREAS, the development of a municipal solid waste regional plan that results in the most cost effective and efficient management of municipal solid waste is in the best interest of the citizens of Marion County.

NOW, THEREFORE BE IT RESOLVED, by the Board of county Commissioners of Marion County, Tennessee acting pursuant to T.C.A. Section 68-211-801 et. seq., that there is hereby established a Municipal Solid Waste Region for and by Rledsoe, Bradley, Grundy, Hamilton, McMinn, Marion, Meigs, Polk, Rhea, and Sequatchie Counties, Tennessee; and

BE IT FURTHER RESOLVED, that this Resolution by the Board of County Commissioners of Marion County evidences and constitutes the agreement of Southeast Tennessee Counties in the joint formation of a multi-county municipal solid waste region; and

BE IT FURTHER RESOLVED, that pursuant to T.C.A. Section 68-211-813(b)(1), a Municipal Solid Waste Region Board is hereby established to administer the activities of this Region; and

BE IT FURTHER RESOLVED, that this Municipal Solid Waste Region Board shall be composed of 15 members serving six year terms except that the initial terms shall be staggered with five members having two year terms; five members having four year terms; and five members having six year terms; and

BE IT FURTHER RESOLVED, that pursuant to T.C.A. Section 68-211-813(b)(1) and as part of the participating counties' agreement as evidenced and constituted by this Resolution, the Municipal Solid Waste Region Board shall be composed of members representing their respective County, and in the instance of Cities or Towns which collect or provides disposal services through their own initiative or by contract, members representing the cities or towns; and

BE IT FURTHER RESOLVED, that a member of the Municipal Solid Waste Region Board shall be appointed by each County Executive and a member shall be appointed by each Mayor of the Cities of Cleveland and Chattanooga; and that the Mayors of other eligible Cities or Towns shall appoint one of three members selected by the Southeast Tennessee City Managers Group or join in the appointment of a County Executive's appointment or the appointment of the Mayor of Chattanooga or the Mayor of Cleveland and that all members so appointed, shall be approved by the respective Board of County Commissioners and Municipal governing bodies; and

BE IT FURTHER RESOLVED, that this Municipal Solid Waste Region Board shall have all powers and duties as granted it by T.C.A. Section 68-211-813 et seq. and, as part of the participating counties agreement as evidenced and constituted by this Resolution, it shall have the additional rights and is empowered to utilize existing governmental personnel, services, facilities, and records of the counties which are parties to this agreement and to employ or contract with persons, private consulting firms, and/or governmental, quasi-governmental, and public entities and agencies in the performance of its duty to cause a municipal solid waste region plan to be produced; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board shall serve in a planning capacity, and implementation of the municipal solid waste region plan shall require a resolution by the constituent counties of the Municipal Solid Waste Region; and

BE IT FURTHER RESOLVED, that at the Municipal Solid Waste Region Board's initial organizational 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 the 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, the counties and municipalities that are within the region, and to apply for and receive donations and grants from private corporations and foundations; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board, its agents or contractors, shall not infringe on the right of any member of the Municipal Solid Waste Region to own, operate and maintain solid waste collection and disposal facilities; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board, its agents or contractors, shall not require any member of the Municipal Solid Waste Region to accept or dispose of solid waste from any other member of the region; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board shall not interfere with or attempt to abrogate existing agreements or contractual relationships, regarding solid waste collection, transportation, or disposal among Municipal Solid Waste Region members; and

BE IT FURTHER RESOLVED, that as part of the participating counties' agreement, as evidenced and constituted by this Resolution, a single county or the Southeast Tennessee Development District 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 the passage of this Resolution, the County Clerk of Marion County shall transmit a copy of this Resolution to the Tennessee State Planning Office.

RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF MARION COUNTY, TENNESSEE, this 26 day of April, 1993, the welfare of the citizens of Marion County requiring it.

Attest:

Odell Minter
County Clerk

Approved:

Howell Moore
County Executive

Approved as to form:

County Attorney

I, ODELL MINTER, COUNTY CLERK OF MARION COUNTY, TENNESSEE, DO HEREBY CERTIFY THIS IS A TRUE AND CORRECT COPY OF THE MATTER OF State & Waste Planning Region AS RECORDED IN BOOK 9, PAGE 201-203 THIS THE 26 DAY OF April, 1993
Odell Minter
COUNTY CLERK

MC MINN COUNTY

RESOLUTION NO. 308

A RESOLUTION

CREATING THE SOUTHEAST TENNESSEE MUNICIPAL SOLID WASTE PLANNING REGION

WHEREAS, the adoption of the Subtitle D landfill regulations by the United States Environmental Protection Agency and companion regulations adopted by the Tennessee Solid Waste Control Board will impact on both the cost and method of disposal of municipal solid waste; and

WHEREAS, at the urging and support of a coalition of local government environmental, commercial, and industrial leaders, the 97th Tennessee General Assembly enacted T.C.A. Section 68-211-801 et. seq. titled "Solid Waste Management Act of 1991"; and

WHEREAS, with the view that better planning for solid waste will help control the additional costs that will be imposed by the new landfill regulations, help protect the environment, provide an improved solid waste management system, better utilize our natural resources, and promote the education of the citizens of Tennessee in the areas of solid waste management including the need for and desirability of reduction and minimization of solid waste, local governments in Tennessee supported and work for the passage of this Act; and

WHEREAS, one of the stated public policies of this Act is to institute and maintain a comprehensive, integrated, statewide program for solid waste management; and

WHEREAS, as per T.C.A. Section 68-211-811, the nine development districts in the State of Tennessee have completed a district needs assessment which are inventories of the solid waste systems in Tennessee; and

WHEREAS, McMinn County's Board of County Commissioners has given consideration to the needs assessment prepared by the Southeast Tennessee Development District; and

WHEREAS, T.C.A. Section 68-211-813, requires that counties in the State of Tennessee form municipal solid waste regions no later than December 12, 1992; and

WHEREAS, the Act's state preference is the formation of multi-county regions with counties having the option of forming single or multi-county municipal solid waste regions; and

WHEREAS, the State of Tennessee will provide grant monies of varying amounts to single county, two county, and three or more county municipal solid waste region plans; and

WHEREAS, the primary and prevailing purpose of the municipal solid waste regions are the preparation of municipal solid waste regional plans which among other requirements must identify how each region will reduce its solid waste disposal per capita by twenty-five percent (25%) by December 31, 1995, and a planned capacity assurance of its disposal for a ten (10) year period; and

WHEREAS, the development of a municipal solid waste regional plan that results in the most cost effective and efficient management of municipal solid waste is in the best interest of the citizens of McMinn County.

NOW, THEREFORE BE IT RESOLVED, by the Board of county Commissioners of McMinn County, Tennessee acting pursuant to T.C.A. Section 68-211-801 et. seq., that there is hereby established a Municipal Solid Waste Region for and by Bledsoe, Bradley, Grundy, Hamilton, McMinn, Marion, Meigs, Polk, Rhea, and Sequatchie Counties, Tennessee; and

BE IT FURTHER RESOLVED, that this Resolution by the Board of County Commissioners of McMinn County evidences and constitutes the agreement of Southeast Tennessee Counties in the joint formation of a multi-county municipal solid waste region; and

BE IT FURTHER RESOLVED, that pursuant to T.C.A. Section 68-211-813(b)(1), a Municipal Solid Waste Region Board is hereby established to administer the activities of this Region; and

BE IT FURTHER RESOLVED, that this Municipal Solid Waste Region Board shall be composed of 15 members serving six year terms except that the initial terms shall be staggered with five members having two year terms; five members having four year terms; and five members having six year terms; and

BE IT FURTHER RESOLVED, that pursuant to T.C.A. Section 68-211-813(b)(1) and as part of the participating counties' agreement as evidenced and constituted by this Resolution, the Municipal Solid Waste Region Board shall be composed of members representing their respective County, and in the instance of Cities or Towns which collects or provides disposal services through their own initiative or by contract, members representing the cities or towns; and

BE IT FURTHER RESOLVED, that a member of the Municipal Solid Waste Region Board shall be appointed by each County Executive and a member shall be appointed by each Mayor of the Cities of Cleveland and Chattanooga; and that the Mayors of other eligible Cities or Towns shall appoint one of three members selected by the Southeast Tennessee City Managers Group or join in the appointment of a County Executive's appointment or the appointment of the Mayor of Chattanooga or the Mayor of Cleveland and that all members so appointed, shall be approved by the respective Board of County Commissioners and Municipal governing bodies; and

BE IT FURTHER RESOLVED, that this Municipal Solid Waste Region Board shall have all powers and duties as granted it by T.C.A. Section 68-211-813 et seq. and, as part of the participating counties agreement as evidenced and constituted by this Resolution, it shall have the additional rights and is empowered to utilize existing governmental personnel, services, facilities, and records of the counties which are parties to this agreement and to employ or contract with persons, private consulting firms, and/or governmental, quasi-governmental, and public entities and agencies in the performance of its duty to cause a municipal solid waste region plan to be produced; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board shall serve in a planning capacity, and implementation of the municipal solid waste region plan shall require a resolution by the constituent counties of the Municipal Solid Waste Region; and

BE IT FURTHER RESOLVED, that at the Municipal Solid Waste Region Board's initial organizational 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 the 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, the counties and municipalities that are within the region, and to apply for and receive donations and grants from private corporations and foundations; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board, its agents or contractors, shall not infringe on the right of any member of the Municipal Solid Waste Region to own, operate and maintain solid waste collection and disposal facilities; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board, its agents or contractors, shall not require any member of the Municipal Solid Waste Region to accept or dispose of solid waste from any other member of the region; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board shall not interfere with or attempt to abrogate existing agreements or contractual relationships, regarding solid waste collection, transportation, or disposal among Municipal Solid Waste Region members; and

BE IT FURTHER RESOLVED, that as part of the participating counties' agreement, as evidenced and constituted by this Resolution, a single county or the Southeast Tennessee Development District 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 the passage of this Resolution, the County Clerk of McMinn County shall transmit a copy of this Resolution to the Tennessee State Planning Office.

RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF McMINN COUNTY, TENNESSEE, this 17th day of May, 1993, the welfare of the citizens of McMinn County requiring it.

Attest:

Approved:

Helen Haskin
County Clerk

Donald L. Conner
County Executive

Approved as to form:

Carroll Allen
County Attorney

94 2
Helen Haskin
8/31/98

MEIGS COUNTY

County of Meigs)

The Meigs County Legislative Body met in a regular session meeting on Monday, January, 18, 1993, in the courtroom of the Meigs County Courthouse in Decatur, Tennessee.

Garland Lankford, County Executive; Chevi Bearden, County Clerk; Mike Verstynen, County Attorney; and the following Commissioner were present:

Carlos Crisp
K.G. Edgemon, Jr.
Charles Ellison
Ralph Jarvis
Eugene Lankford
Carter Nelson
C.O. Peace
Joyce Proffitt
Jim Welch
Earl Wright

Resolution #1 Made by Commissioner Proffitt and seconded by Commissioner Lankford to approve the minutes of the December meeting.

Vote: 10 Aye 1 Absent

Resolution #2 Made by Commissioner Peace and seconded by Commissioner Nelson to approve the Trustee's Report.

Vote: 10 Aye 1 Absent

Resolution #3 Made by Commissioner Wright and seconded by Commissioner Lankford for our county to join in the Southeast Local Development Corporation for Farmers Home Revolving Home Fund at \$3,000. a year for the next 3 years.

Vote: 8 Aye 2 Nay (Peace & Welch) 1 Absent

* Resolution #4 Made by Commissioner Proffitt and seconded by Commissioner Crisp to amend Resolution #6 of the November, 1992, meeting and add Marion County as the tenth county to the Planning Region.

Vote: 10 Aye 1 Absent

Resolution #5 Made by Commissioner Crisp and seconded by Commissioner Nelson to appoint Garland Lankford to the Solid Waste Board. And Also To put \$20,000. in the budget for Regional Solid Waste Plan as though it was needed.

Vote: 10 Aye 1 Absent

Resolution #6 Made by Commissioner Proffitt and seconded by Commissioner Crisp to approve Wilma Jean Wright as a notary.

Vote: 10 Aye 1 Absent

Resolution #7 Made by Commissioner Peace and seconded by Commissioner Nelson to approve Linda Bain as a notary-at-large.

Vote: 10 Aye 1 Absent

Resolution #8 Made by Commissioner Nelson and seconded by Commissioner Welch to approve the quarterly reports for the County General, Highway Dept., and Dept. of Education.

Vote: 10 Aye 1 Absent

Resolution #9 Made by Commissioner Peace and seconded by Commissioner Proffitt to approve the amendments to the County General. (see attached)

Vote: 10 Aye 1 Absent

Resolution #10 Made by Commissioner Peace and seconded by Commissioner Nelson to approve \$1,097.37 from Beginning Undesignated Fund Balance (39000) to Liability Insurance (58400/506).

Vote: 10 Aye 1 Absent

POLK COUNTY

STATE OF TENNESSEE I
 I
COUNTY OF POLK I

I, ANGIE C. SANFORD, hereby certify that I am the duly qualified and acting County Clerk of POLK County, Tennessee, and as such official I further certify that the attached hereto is a copy of excerpts from the minutes of the meeting of the Board of County Commissioners of said county held on MAY 20, 1993; that I have compared said copy with the original minute record of said meeting in my official custody; and that said copy is a true, correct and complete transcript from said original minute record insofar as said original record related to the matters therein set out.

WITNESS my official signature and the seal of said County this 9TH day of JUNE, 1993.

Angie C. Sanford
COUNTY CLERK

(SEAL)

900

JUN 10 1933

ROLLING

Original	File
Count	File
File	File

RESOLUTION NO. 5-4-93

A RESOLUTION

CREATING THE SOUTHEAST TENNESSEE MUNICIPAL SOLID WASTE PLANNING REGION

WHEREAS, the adoption of the Subtitle D landfill regulations by the United States Environmental Protection Agency and companion regulations adopted by the Tennessee Solid Waste Control Board will impact on both the cost and method of disposal of municipal solid waste; and

WHEREAS, at the urging and support of a coalition of local government environmental, commercial, and industrial leaders, the 97th Tennessee General Assembly enacted T.C.A. Section 68-211-801 et. seq. titled "Solid Waste Management Act of 1991"; and

WHEREAS, with the view that better planning for solid waste will help control the additional costs that will be imposed by the new landfill regulations, help protect the environment, provide an improved solid waste management system, better utilize our natural resources, and promote the education of the citizens of Tennessee in the areas of solid waste management including the need for and desirability of reduction and minimization of solid waste, local governments in Tennessee supported and work for the passage of this Act; and

WHEREAS, one of the stated public policies of this Act is to institute and maintain a comprehensive, integrated, statewide program for solid waste management; and

WHEREAS, as per T.C.A. Section 68-211-811, the nine development districts in the State of Tennessee have completed a district needs assessment which are inventories of the solid waste systems in Tennessee; and

WHEREAS, Polk County's Board of County Commissioners has given consideration to the needs assessment prepared by the Southeast Tennessee Development District; and

WHEREAS, T.C.A. Section 68-211-813, requires that counties in the State of Tennessee form municipal solid waste regions no later than December 12, 1992; and

WHEREAS, the Act's state preference is the formation of multi-county regions with counties having the option of forming single or multi-county municipal solid waste regions; and

WHEREAS, the State of Tennessee will provide grant monies of varying amounts to single county, two county, and three or more county municipal solid waste region plans; and

WHEREAS, the primary and prevailing purpose of the municipal solid waste regions are the preparation of municipal solid waste regional plans which among other requirements must identify how each region will reduce its solid waste disposal per capita by twenty-five percent (25%) by December 31, 1995, and a planned capacity assurance of its disposal for a ten (10) year period; and

WHEREAS, the development of a municipal solid waste regional plan that results in the most cost effective and efficient management of municipal solid waste is in the best interest of the citizens of Polk County.

NOW, THEREFORE BE IT RESOLVED, by the Board of county Commissioners of Polk County, Tennessee acting pursuant to T.C.A. Section 68-211-801 et seq., that there is hereby established a Municipal Solid Waste Region for and by Bledsoe, Bradley, Grundy, Hamilton, McMinn, Marion, Meigs, Polk, Rhea, and Sequatchie Counties, Tennessee; and

BE IT FURTHER RESOLVED, that this Resolution by the Board of County Commissioners of Polk County evidences and constitutes the agreement of Southeast Tennessee Counties in the joint formation of a multi-county municipal solid waste region; and

BE IT FURTHER RESOLVED, that pursuant to T.C.A. Section 68-211-813(b)(1), a Municipal Solid Waste Region Board is hereby established to administer the activities of this Region; and

BE IT FURTHER RESOLVED, that this Municipal Solid Waste Region Board shall be composed of 15 members serving six year terms except that the initial terms shall be staggered with five members having two year terms; five members having four year terms; and five members having six year terms; and

BE IT FURTHER RESOLVED, that pursuant to T.C.A. Section 68-211-813(b)(1) and as part of the participating counties' agreement as evidenced and constituted by this Resolution, the Municipal Solid Waste Region Board shall be composed of members representing their respective County, and in the instance of Cities or Towns which collect or provides disposal services through their own initiative or by contract, members representing the cities or towns; and

BE IT FURTHER RESOLVED, that a member of the Municipal Solid Waste Region Board shall be appointed by each County Executive and a member shall be appointed by each Mayor of the Cities of Cleveland and Chattanooga; and that the Mayors of other eligible Cities or Towns shall appoint one of three members selected by the Southeast Tennessee City Managers Group or join in the appointment of a County Executive's appointment or the appointment of the Mayor of Chattanooga or the Mayor of Cleveland and that all members so appointed, shall be approved by the respective Board of County Commissioners and Municipal governing bodies; and

BE IT FURTHER RESOLVED, that this Municipal Solid Waste Region Board shall have all powers and duties as granted it by T.C.A. Section 68-211-813 et seq. and, as part of the participating counties agreement as evidenced and constituted by this Resolution, it shall have the additional rights and is empowered to utilize existing governmental personnel, services, facilities, and records of the counties which are parties to this agreement and to employ or contract with persons, private consulting firms, and/or governmental, quasi-governmental, and public entities and agencies in the performance of its duty to cause a municipal solid waste region plan to be produced; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board shall serve in a planning capacity, and implementation of the municipal solid waste region plan shall require a resolution by the constituent counties of the Municipal Solid Waste Region; and

BE IT FURTHER RESOLVED, that at the Municipal Solid Waste Region Board's initial organizational 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 the 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, the counties and municipalities that are within the region, and to apply for and receive donations and grants from private corporations and foundations; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board, its agents or contractors, shall not infringe on the right of any member of the Municipal Solid Waste Region to own, operate and maintain solid waste collection and disposal facilities; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board, its agents or contractors, shall not require any member of the Municipal Solid Waste Region to accept or dispose of solid waste from any other member of the region; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board shall not interfere with or attempt to abrogate existing agreements or contractual relationships, regarding solid waste collection, transportation, or disposal among Municipal Solid Waste Region members; and

BE IT FURTHER RESOLVED, that as part of the participating counties' agreement, as evidenced and constituted by this Resolution, a single county or the Southeast Tennessee Development District 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 the passage of this Resolution, the County Clerk of Polk County shall transmit a copy of this Resolution to the Tennessee State Planning Office.

RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF POLK COUNTY, TENNESSEE, this 20th day of May, 1993, the welfare of the citizens of Polk County requiring it.

Attest:

Approved:

Aggie C. Crawford County Clerk Ray J. Furstone County Executive

Approved as to form:

Wm. E. McRob
County Attorney

RHEA COUNTY

A RESOLUTION CREATING THE
SOUTHEAST TENNESSEE MUNICIPAL SOLID
WASTE PLANNING REGION

WHEREAS, the adoption of the Subtitle D landfill regulations by the United States Environmental Protection Agency and companion regulations adopted by the Tennessee Solid Waste Control Board will impact on both the cost and method of disposal of municipal solid waste; and

WHEREAS, at the urging and support of a coalition of local government environmental, commercial, and industrial leaders, the 97th Tennessee General Assembly enacted T.C.A. Section 68-211-801 et. seq. titled "Solid Waste Management Act of 1991"; and

WHEREAS, with the view that better planning for solid waste will help control the additional costs that will be imposed by the new landfill regulations, help protect the environment, our natural resources, and promote the education of the citizens of Tennessee in the areas of solid waste management including the need for and desirability of reduction and minimization of solid waste, local governments in Tennessee supported and work for the passage of this Act; and

WHEREAS, one of the stated public policies of this Act is to institute and maintain a comprehensive, integrated, statewide program for solid waste management; and

WHEREAS, as per T.C.A. Section 68-211-811, the nine development districts in the State of Tennessee have completed a district needs assessment which are inventories of the solid waste systems in Tennessee; and

WHEREAS, Rhea County's Board of County Commissioners has given consideration to the needs assessment prepared by the Southeast Tennessee Development District; and

WHEREAS, T.C.A. Section 68-211-813, required that counties in the State of Tennessee form municipal solid waste regions no later than December 12, 1992; and

WHEREAS, the Act's state preference is the formation of multi-county regions with counties having the option of forming single or multi-county municipal solid waste regions; and

WHEREAS, the State of Tennessee will provide grant monies of varying amounts to single county, two county, and three or more county municipal solid waste region plans; and

WHEREAS, the primary and prevailing purpose of the municipal solid waste regions are the preparation of municipal solid waste regional plans which among other requirements must identify how each region will reduce its solid waste disposal per capita by twenty-five percent (25%) by December 31, 1995, and a planned capacity assurance of its disposal for a ten (10) year period; and

WHEREAS, the development of a municipal solid waste regional plan that results in the most cost effective and efficient management of municipal solid waste is in the best interest of the citizens of Rhea County.

NOW, THEREFORE BE IT RESOLVED, by the Board of County Commissioners of Rhea County, Tennessee acting pursuant to T.C.A. Section 68-211-801 et seq., that there is hereby established a Municipal Solid Waste Region for and by Bledsoe, Bradley, Grundy, Hamilton, McMinn, Marion, Meigs, Polk, Rhea, and Sequatchie Counties, Tennessee; and

BE IT FURTHER RESOLVED, that this Resolution by the Board of County Commissioners of Rhea County evidences and constitutes the agreement of Southeast Tennessee Counties in the joint formation of a multi-county municipal solid waste region; and

BE IT FURTHER RESOLVED, that pursuant to T.C.A. Section 68-211-813 (b)(1), a Municipal Solid Waste Region Board is hereby established to administer the activities of this Region; and

BE IT FURTHER RESOLVED, that this Municipal Solid Waste Region Board shall be composed of 15 members serving six year terms except that the initial terms shall be staggered with five members having two year terms; five members having four year terms; and five members having six year terms; and

BE IT FURTHER RESOLVED, that pursuant to T.C.A. Section 68-211-813(b)(1) and as part of the participating counties' agreement as evidenced and constituted by this Resolution, the Municipal Solid Waste Region Board shall be composed of members representing their respective County, and in the instance of Cities or Towns which collect or provides disposal services through their own initiative or by contract, members representing the cities or towns; and

BE IT FURTHER RESOLVED, that a member of the Municipal Solid Waste Region Board shall be appointed by each County Executive and a member shall be appointed by each Mayor of the Cities of Cleveland and Chattanooga; and that the Mayors of other eligible Cities or Towns shall appoint one of three members selected by the Southeast Tennessee City Managers Group or join in the appointment of a County Executive's appointment or the appointment of the Mayor of Chattanooga or the Mayor of Cleveland and that all members so appointed, shall be approved by the respective Board of County Commissioners and Municipal governing bodies; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board shall have all powers and duties as granted it by T.C.A. Section 68-211-813 et. seq. and, as part of the participating counties agreement as evidenced and constituted by this Resolution, it shall have the additional rights and is empowered to utilize existing governmental personnel, services, facilities, and records of the counties which are parties to this agreement and to employ or contract with persons, private consulting firms, and/or governmental, quasi-governmental, and public enti-

ties and agencies in the performance of its duty to cause a municipal solid waste region plan to be produced; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board shall serve in a planning capacity, and implementation of the municipal solid waste region plan shall require a resolution by the constituent counties of the Municipal Solid Waste Region; and

BE IT FURTHER RESOLVED, that at the Municipal Solid Waste Region Board's initial organizational 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 the 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, the counties and municipalities that are within the region, and to apply for and receive donations and grants from private corporation and foundations; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board, its agents or contractors, shall not infringe on the right of any member of the Municipal Solid Waste Region to own, operate and maintain solid waste collection and disposal facilities; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board, its agents or contractors, shall not require any member of the Municipal Solid Waste Region to accept or dispose of solid waste from any other member of the region; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board shall not interfere with or attempt to abrogate existing agreements or contractual relationships, regarding solid waste collection, transportation, or disposal among Municipal Solid Waste Region members; and

BE IT FURTHER RESOLVED, that as part of the participating counties' agreement, as evidenced and constituted by this Resolution, a single county or the Southeast Tennessee Development District 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 the passage of this Resolution, the County Clerk of Rhea County shall transmit a copy of this Resolution to the Tennessee State Planning Office.

RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF RHEA COUNTY, TENNESSEE, this 20th day of April, 1993, the welfare of the citizens of Rhea County requiring it.

Attest:

Approved:

Jimmy Wilkey

Robert M. Aikman

County Clerk

County Executive

CERTIFIED COPY

Approved as to form:

I, Jimmy Wilkey, Rhea County Clerk do hereby

C. Philip Swafford

certify this to be

County Attorney

a true and correct copy of the

Original as recorded in Book # 6

Page # 244-248 in my Office this

5th day of May, 1993

A RESOLUTION
APPOINTING A REPRESENTATIVE TO THE
SOUTHEAST MUNICIPAL SOLID WASTE
PLANNING REGION BOARD

WHEREAS, the 97th Tennessee Assembly enacted T.C.A. Section 68-211-801 et. seq. titled "Solid Waste Management Act of 1991"; and

WHEREAS, per T.C.A. Section 68-211-801, Rhea County's Board of Commissioners have joined by resolution with Bledsoe, Bradley, Grundy, Hamilton, McMinn, Marion, Meigs, Polk, and Sequatchie Counties in forming the Southeast Tennessee Municipal Solid Waste Planning Region; and

WHEREAS, PER T.C.A. Section 68-211-801, each municipal solid waste planning region is required to create a board consisting of no less than five (5) members nor more than fifteen (15); and

WHEREAS, per T.C.A. Section 68-211-801, the County Executive of Rhea County has the authority to appoint a member of the Solid Waste Planning Region Board; and

NOW, THEREFORE BE IT RESOLVED, by the County Commission of Rhea County, Tennessee, that Robert Aikman is approved for appointment to the Municipal Solid Waste Planning Region Board and that this appointment represents the best interests and welfare of the citizens of Rhea County.

Attest:

Approved:

Jimmy Wilkey

Robert M. Aikman

County Clerk

County Executive

Approved as to form:

C. Philip Swafford

County Attorney

SEQUATCHIE COUNTY

RESOLUTION NO. 324
A RESOLUTION

CREATING THE SOUTHEAST TENNESSEE MUNICIPAL SOLID WASTE PLANNING REGION

WHEREAS, the adoption of the Subtitle D landfill regulations by the United States Environmental Protection Agency and companion regulations adopted by the Tennessee Solid Waste Control Board will impact on both the cost and method of disposal of municipal solid waste; and

WHEREAS, at the urging and support of a coalition of local government environmental, commercial, and industrial leaders, the 97th Tennessee General Assembly enacted T.C.A. Section 68-211-801 et. seq. titled "Solid Waste Management Act of 1991"; and

WHEREAS, with the view that better planning for solid waste will help control the additional costs that will be imposed by the new landfill regulations, help protect the environment, provide an improved solid waste management system, better utilize our natural resources, and promote the education of the citizens of Tennessee in the areas of solid waste management including the need for and desirability of reduction and minimization of solid waste, local governments in Tennessee supported and work for the passage of this Act; and

WHEREAS, one of the stated public policies of this Act is to institute and maintain a comprehensive, integrated, statewide program for solid waste management; and

WHEREAS, as per T.C.A. Section 68-211-811, the nine development districts in the State of Tennessee have completed a district needs assessment which are inventories of the solid waste systems in Tennessee; and

WHEREAS, Sequatchie County's Board of County Commissioners has given consideration to the needs assessment prepared by the Southeast Tennessee Development District; and

WHEREAS, T.C.A. Section 68-211-813, requires that counties in the State of Tennessee form municipal solid waste regions no later than December 12, 1992; and

WHEREAS, the Act's state preference is the formation of multi-county regions with counties having the option of forming single or multi-county municipal solid waste regions; and

WHEREAS, the State of Tennessee will provide grant monies of varying amounts to single county, two county, and three or more county municipal solid waste region plans; and

WHEREAS, the primary and prevailing purpose of the municipal solid waste regions are the preparation of municipal solid waste regional plans which among other requirements must identify how each region will reduce its solid waste disposal per capita by twenty-five percent (25%) by December 31, 1995, and a planned capacity assurance of its disposal for a ten (10) year period; and

WHEREAS, the development of a municipal solid waste regional plan that results in the most cost effective and efficient management of municipal solid waste is in the best interest of the citizens of Sequatchie County.

NOW, THEREFORE BE IT RESOLVED, by the Board of county Commissioners of Sequatchie County, Tennessee acting pursuant to T.C.A Section 68-211-801 et. seq., that there is hereby established a Municipal Solid Waste Region for and by Bledsoe, Bradley, Grundy, Hamilton, McMinn, Marion, Meigs, Polk, Rhea, and Sequatchie Counties, Tennessee; and

BE IT FURTHER RESOLVED, that this Resolution by the Board of County Commissioners of Sequatchie County evidences and constitutes the agreement of Southeast Tennessee Counties in the joint formation of a multi-county municipal solid waste region; and

BE IT FURTHER RESOLVED, that pursuant to T.C.A. Section 68-211-813(b)(1), a Municipal Solid Waste Region Board is hereby established to administer the activities of this Region; and

BE IT FURTHER RESOLVED, that this Municipal Solid Waste Region Board shall be composed of 15 members serving six year terms except that the initial terms shall be staggered with five members having two year terms; five members having four year terms; and five members having six year terms; and

BE IT FURTHER RESOLVED, that pursuant to T.C.A. Section 68-211-813(b)(1) and as part of the participating counties' agreement as evidenced and constituted by this Resolution, the Municipal Solid Waste Region Board shall be composed of members representing their respective County, and in the instance of Cities or Towns which collect or provides disposal services through their own initiative or by contract, members representing the cities or towns; and

BE IT FURTHER RESOLVED, that a member of the Municipal Solid Waste Region Board shall be appointed by each County Executive and a member shall be appointed by each Mayor of the Cities of Cleveland and Chattanooga; and that the Mayors of other eligible Cities or Towns shall appoint one of three members selected by the Southeast Tennessee City Managers Group or join in the appointment of a County Executive's appointment or the appointment of the Mayor of Chattanooga or the Mayor of Cleveland and that all members so appointed, shall be approved by the respective Board of County Commissioners and Municipal governing bodies; and

BE IT FURTHER RESOLVED, that this Municipal Solid Waste Region Board shall have all powers and duties as granted it by T.C.A. Section 68-211-813 et seq. and, as part of the participating counties agreement, as evidenced and constituted by this Resolution, it shall have the additional rights and is empowered to utilize existing governmental personnel, services, facilities, and records of the counties which are parties to this agreement and to employ or contract with persons, private consulting firms, and/or governmental, quasi-governmental, and public entities and agencies in the performance of its duty to cause a municipal solid waste region plan to be produced; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board shall serve in a planning capacity, and implementation of the municipal solid waste region plan shall require a resolution by the constituent counties of the Municipal Solid Waste Region; and

BE IT FURTHER RESOLVED, that at the Municipal Solid Waste Region Board's initial organizational 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 the 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, the counties and municipalities that are within the region, and to apply for and receive donations and grants from private corporations and foundations; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board, its agents or contractors, shall not infringe on the right of any member of the Municipal Solid Waste Region to own, operate and maintain solid waste collection and disposal facilities; and

BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board, its agents or contractors, shall not require any member of the Municipal Solid Waste Region to accept or dispose of solid waste from any other member of the region; and

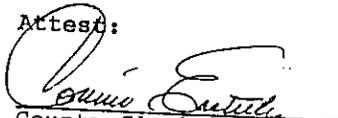
BE IT FURTHER RESOLVED, that the Municipal Solid Waste Region Board shall not interfere with or attempt to abrogate existing agreements or contractual relationships, regarding solid waste collection, transportation, or disposal among Municipal Solid Waste Region members; and

BE IT FURTHER RESOLVED, that as part of the participating counties' agreement, as evidenced and constituted by this Resolution, a single county or the Southeast Tennessee Development District 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 the passage of this Resolution, the County Clerk of Sequatchie County shall transmit a copy of this Resolution to the Tennessee State Planning Office.

RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF SEQUATCHIE COUNTY, TENNESSEE, this 17th day of May, 1993, the welfare of the citizens of Sequatchie County requiring it.

Attest:


County Clerk

Approved:


County Executive

Approved as to form:


County Attorney

CERTIFICATION


Connie Eastley, Clerk of Sequatchie County, State of Tennessee, do hereby certify that the foregoing is a true and correct copy of the Resolution # 324 as recorded in 10 Book, Page 322 on file in this office.

Given under my hand and Seal of Office this 18th day of November, 1993.


Connie Eastley
Sequatchie County Clerk

APPENDIX A

I.2 LIST OF PLANNING BOARD MEMBERS

Southeast Tennessee Municipal Solid Waste Planning Board

<u>Member</u>	<u>Term (years)</u>	<u>Appointed By:</u>
William Reed	2	Bledsoe County Commission
Donna Hubbard	4	Bradley County Commission
Riley Anderson	6	Grundy County Commission
Ken Castleberry	6	Hamilton County Commission
Ron Banks	4	McMinn County Commission
Howell Moss	2	Marion County Commission
Garland Lankford	2	Meigs County Commission
Hoyt Firestone	6	Polk County Commission
Billy Ray Patton	4	Rhea County Commission
Bill Harmon	4	Sequatchie County Commission
Frank Welch	4	Regional Municipalities
Jack Marcellis	2	Mayor of Chattanooga
Craig Bivens	6	Mayor of Cleveland
Jerry Robinson	2	Regional Municipalities
Rick Sonnenburg	6	Regional Municipalities

APPENDIX A

**I.2.b. APPOINTMENT LETTERS/MEETING MINUTES WITH APPOINTMENTS
FOR EACH MEMBER**

BLEDSON COUNTY

DATE: July 19, 1993

RE: Rep. to the Southeast

Municipal Solid Waste Planning
Region Board

UPON MOTION BY COMMISSIONER, Bob Davis WHICH MOTION WAS

SECONDED BY COMMISSIONER, Gordon Smith, TO:

approve resolution

THE VOTE WAS AS FOLLOWS: the motion was approved by a voice vote.

- CHARLES RAINS _____
- HENRY CLAY SAPP _____
- OLEN WOODEN _____
- GRACE SEALS _____
- BOB L. DAVIS _____
- GORDON SMITH _____
- MICKEY HARWOOD _____
- BILLY R. (POSS) MERRIMAN _____
- TOM FARMER _____
- UNION HANKINS _____
- MASKEY MILLS _____
- AROL WAFFORD _____
- ICE HUTCHESON _____

ES: _____
Y: _____
SS: _____

BRADLEY COUNTY

Southeast Tennessee Solid Waste Planning Board Member

Donna Hubbard

of Bradley County

Ms. Hubbard explains that there was no "formal" meeting minutes or resolution appointing her to membership in the Planning Board.

GRUNDY COUNTY

Southeast Tennessee Solid Waste Planning Board Member

Riley Anderson

of Grundy County

Formal appointment letter/meeting minutes were not located as of plan printing/submission date.

HAMILTON COUNTY

STATE OF TENNESSEE

Hamilton County



May 19, 1993

DATE (Month, Day, Year)

Hamilton County Board of Commissioners

RESOLUTION

No. 593-61

A RESOLUTION TO CONFIRM THE APPOINTMENT BY THE COUNTY EXECUTIVE OF ONE MEMBER TO THE SOUTHEAST MUNICIPAL SOLID WASTE PLANNING REGION BOARD.

WHEREAS, the 97th Tennessee General Assembly enacted T.C.A. Section 68-211-801 et. seq. titled "Solid Waste Management Act of 1991"; and,

WHEREAS, per T.C.A. Section 68-211-801, Hamilton County's Board of Commissioners have joined by resolution with Bledsoe, Bradley, Grundy, Marion, McMinn, Meigs, Polk, Rhea, and Sequatchie Counties in forming the Southeast Tennessee Municipal Solid Waste Planning Region; and,

WHEREAS, per T.C.A. Section 68-211-801, each municipal solid waste planning region is required to create a board consisting of no less than five (5) members nor more than fifteen (15); and,

WHEREAS, per T.C.A. Section 68-211-801, the County Executive of Hamilton County has the authority to appoint a member of the Solid Waste Planning Region Board.

NOW, THEREFORE, BE IT RESOLVED BY THIS COUNTY LEGISLATIVE BODY IN SESSION ASSEMBLED:

That the County Executive's appointment of Ken Castleberry to the Municipal Solid Waste Planning Region Board is hereby confirmed and represents the best interests and welfare of the citizens of Hamilton County.

BE IT FURTHER RESOLVED THAT THIS RESOLUTION TAKE EFFECT FROM AND AFTER ITS PASSAGE, THE PUBLIC WELFARE REQUIRING IT.

BECAME LAW UNDER TEN (10) DAY PROVISION
CHAPTER 934, TENNESSEE PUBLIC ACTS OF 1978

ATTEST Debbie Reelino
Deputy County Clerk

DATE June 1, 1993

Approved: _____
 Rejected: Ken Castleberry
 County Clerk

Approved: _____
 County Executive

Vetoed: May 19, 1993

CERTIFICATION OF ACTION

HAMILTON COUNTY COMMISSION
MAY 19, 1993

1

2 County Executive Roberts addressed questions from
3 Commissioner McDaniel regarding the role of the wastewater
4 board after this authority was established. County
5 Attorney Mahn addressed questions regarding the role of the
6 authority and present copies of State law pertaining to the
7 sewer authority.

8

9 Mr. Bob Scott, with the Savannah Valley Utility District,
10 questioned the role of the utility districts in this
11 decision. Mr. Mahn assured Mr. Scott that this sewer
12 authority would not affect the role of the various utility
13 districts or the employees working for them. They would
14 have the ability to participate in the process should they
15 desire to do so. Chairman Taylor noted there were other
16 persons present in the audience interested in this who had
17 spoken at the public hearing last Thursday in support of
18 the Resolution. There was no one further desiring to speak
19 on this topic.

20

21 The foregoing Resolution was unanimously adopted on a roll
22 call vote, with Commissioner Vandergriff being absent.

23

24 RESOLUTION NO. 593-61 TO CONFIRM THE APPOINTMENT BY THE
25 COUNTY EXECUTIVE OF ONE MEMBER TO THE SOUTHEAST MUNICIPAL
26 SOLID WASTE PLANNING REGION BOARD.

27

28 Chairman Taylor noted this names Mr. Ken Castleberry to
29 serve on this board.

30

31 ON MOTION of Commissioner Bennett, seconded by
32 Commissioner Adams, to adopt the foregoing Resolution.

HAMILTON COUNTY COMMISSION
MAY 19, 1993

1

2 The foregoing Resolution was unanimously adopted on a roll
3 call vote, with Commissioner Vandergriff being absent.

4

5 RESOLUTION NO. 593-62 APPROVING THE LEASE PURCHASE OF ONE
6 (1) COPIER AMOUNTING TO \$4,796.04 PER YEAR FOR THREE (3)
7 YEARS FROM PITNEY BOWES FROM THE STATE CONTRACT AND TO
8 AUTHORIZE THE COUNTY EXECUTIVE TO SIGN ANY CONTRACTS
9 NECESSARY TO IMPLEMENT THIS RESOLUTION.

10

11 ON MOTION of Commissioner Berger, seconded by Commissioner
12 Adams, to adopt the foregoing Resolution.

13

14 The foregoing Resolution was unanimously adopted on a roll
15 call vote, with Commissioner Vandergriff being absent.

16

17 RESOLUTION NO. 593-63 ACCEPTING THE BID OF G&J EXERCISE
18 EQUIPMENT COMPANY FOR EXERCISE EQUIPMENT AMOUNTING TO
19 \$14,840.00 AND TO AUTHORIZE THE COUNTY EXECUTIVE TO SIGN
20 ANY CONTRACTS NECESSARY TO IMPLEMENT THIS RESOLUTION.

21

22 Mr. Browder indicated this was for the new jail facility
23 and these funds will come from the bond issue for jail
24 renovation. It was the low bid meeting specifications.

25

26 ON MOTION of Commissioner Berger, seconded by Commissioner
27 Adams, to adopt the foregoing Resolution.

28

29 The foregoing Resolution was unanimously adopted on a roll
30 call vote, with Commissioner Vandergriff being absent.

31

32 RESOLUTION NO. 593-64 TO APPOINT ONE (1) MEMBER TO THE

MARION COUNTY

April 26, 1993

Brown, Randall	P
Case, Jerry Don	P
Cookston, Gary	P
Haggard, Winfred	P
Hudson, Robert	P
Jordan, Shellie	P
Lawson, Lester	P
McDowell, Burnie	P
Payne, David	P
Price, Les	P
Sartain, Robert	P
Simcox, Larry	P
Smith, Keith	P
Thompson, Thomas	P
Turner, Melvin	P

Attn: John

The Marion County Commissioners met in regular session April 26, 1993, at 6:30 pm, in the Marion County Commission Building with fifteen members present and none absent.

The meeting was called to order by Chairman Moss, the invocation was given by Commissioner Turner, and the roll call was taken by Odell Minter, County Clerk.

- 1.) Motion by Commissioner Simcox, seconded by Commissioner Turner, to approve the March 22, 1993 minutes. 15 aye
- 2.) Motion by Commissioner Thompson, seconded by Commissioner McDowell, to approve a resolution to establish the Marion County Health Department as a Smoke Free Environment. (see book 9, page 198) 15 aye
- 3.) Motion by Commissioner Simcox, seconded by Commissioner Payne, authorizing the County Executive, Howell Moss, to submit application for up to \$500,000 in grant funds to assist with the industrial location costs; the matching funds will be supplied by Rock-Tenn who has announced plans to locate a manufacturing facility in Marion County. (see Book 9, page 177) 15 aye
- 4.) Motion by Commissioner McDowell, seconded by Commissioner Simcox, to refer the hiring of a Certified Building Inspector for the county to the finance committee and for the committee to report back at the May meeting. 15 aye
- 5.) Motion by Commissioner Payne, seconded by Commissioner Simcox, for the County Attorney to consult the State Department of Transportation to see if they can maintain the road through the City of Orme that was taken off the county road system at the March 8, 1993 meeting. Road Project 5801. 15 aye
- 6.) Motion by Commissioner Payne, seconded by Commissioner Hudson, to purchase a bulldozer in the name of Marion County Landfill, the motion was rejected. 4 aye, 11 nay
- 7.) Motion by Commissioner Payne, seconded by Commissioner Simcox, to title the bulldozer in the name of Marion County. 13 aye, 2 nay
- 8.) Chairman Moss read letters from the cities of Whitwell, Kimball, Jasper and South Pittsburg concerning the proposal of the county wide garbage service. A further study is to be made concerning this project, Whitwell being the only one to agree at this date. 15 aye
- 9.) Motion by Commissioner Payne, seconded by Commissioner Hudson, to authorize the County Executive, Howell Moss, to see that Southeast Tennessee Development expands services over the county and buy or lease other dumpsters to be placed over the county wherever they are needed. 15 aye
- 10) * Motion by Commissioner Lawson, seconded by Commissioner Turner, to appoint the County Executive, Howell Moss, to the Solid Waste Planning Region Board. (see book 9, page 20) 15 aye

April 26, 1993

Page 2

- (1) Motion by Commissioner Payne, seconded by Commissioner Simcox, to approve the resolution creating the Southeast Tennessee Municipal Solid Waste Planning Region. (see book 9, page ¹⁵¹~~109~~) 15 aye
- (2) Motion by Commissioner Payne, seconded by Commissioner Turner, for a further study to be made concerning the Bond and Sinking Fund. 15 aye
- (3) Motion by Commissioner McDowell, seconded by Commissioner Brown, to wait until the next meeting to vote on the School Superintendent to be elected by the voters in 1994, or to be appointed by the School Board, which the appointment will be mandatory after the 1994 election. 15 aye
- (4) Motion by Commissioner Brown, seconded by Commissioner McDowell, for the County Executive to publish in the paper for bids on the old ambulance. 13 aye, 2 nay
- (5) Motion by Commissioner Sartain, seconded by Commissioner McDowell, to give the Sequatchie Fire Department the pump truck at the Marion County Jail, and that it be titled by Sequatchie Fire Department. 14 aye, 1 nay
- (6) Motion by Commissioner Lawson, seconded by Commissioner Simcox, to approve the following notaries: Teresa J. Ladd, Marty S. Murphy, Kathryn Hampton, Wilma L. Peoples, and Kay Price. 15 aye
- (7) Motion by Commissioner Price, seconded by Commissioner Jordan, to adjourn. 15 aye

Respectfully submitted,

Howell Moss, Chairman

Odell Minter, Clerk

MC MINN COUNTY

Motion carried by roll call vote, as recorded:

Bobby Carter - Aye
Jack King - Aye
Max Mason - Aye
Rex Moses - Aye
Billy Jo Murphy - Aye
Fred Hicks - Aye
George Tuell - Aye
Owen Vincent - Aye
Charles Waddell - Aye
Chairman Jack Powers - Aye

9. FLOOD INSURANCE RESOLUTION - MCMINN COUNTY PLANNING COMMISSION

Commissioner Carter said that the Planning Commission voted to delay action on this until a later date.

10. COMMENTS FROM THE AUDIENCE

A. Complaint of Landowner Adjacent to Landfill - Mr. Marvin Hammonds.

Mr. Hammonds, who has a verbal agreement with the owner, Mr. Paisley, to buy the farm next to the landfill, complained that what the County considers to be a water runoff problem at the landfill is really seepage coming from the landfill. Mr. Hammonds circulated pictures of the site which he said he just took and he invited all the Commissioners to go out and look at it. He said that some of his calves became sick from the runoff from the landfill. He also complained that an article in the paper said that Commissioner Carter said he had demanded \$10,000.00 an acre for the land the County was interested in purchasing. He said he did not demand \$10,000.00, he said he could subdivide the property and make \$10,000.00 per acre by selling off the property located at the back of the landfill. A lengthy discussion followed with Mr. Hammonds and some members of the Commission giving their perception of what had taken place and clarifying what was said. (Note: This issue is addressed again later in this meeting under Solid Waste Committee.)

11. RESOLUTIONS

Mr. Banks said there is one resolution but it will be brought up later.

12. ELECTIONS, APPOINTMENTS AND CONFIRMATIONS

A. Appointment of County Executive to Southeast Tennessee Municipal Solid Waste Planning Region.

Mr. Banks requested Commission approval of his appointment as McMinn County's Representative to the Southeast Tennessee Municipal Solid Waste Planning Region.

MOTION made by Commissioner Moses, and seconded by Commissioner Waddell, to approve Mr. Banks' appointment.

Motion carried by voice vote.

13. REPORTS FROM COMMITTEES, COUNTY OFFICIALS, COMMENTS FROM COMMISSIONERS

A. Public Safety Committee - Commissioner King.

Commissioner King said the Public Safety Committee met tonight at 6:30 pm and he asked the Commissioner of Highways to explain the purpose of the meeting. Highway Commissioner Moss said that the Tennessee Department of Transportation wants to put up a caution light at the intersection of Piney Grove Road and State Route 163. There have been several accidents at

This is a true copy of the original document on file in the McMinn County Clerk's Office.

This 28th day of Oct 1994

Chen Hester
McMinn County Clerk ... Comm. Exp. 8-31-98

MEIGS COUNTY

County of Meigs)

The Meigs County Legislative Body met in a regular session meeting on Monday, January, 18, 1993, in the courtroom of the Meigs County Courthouse in Decatur, Tennessee.

Garland Lankford, County Executive; Chevi Bearden, County Clerk; Mike Verstynen, County Attorney; and the following Commissioner were present:

Carlos Crisp
K.G. Edgemon, Jr.
Charles Ellison
Ralph Jarvis
Eugene Lankford
Carter Nelson
C.O. Peace
Joyce Proffitt
Jim Welch
Earl Wright

Resolution #1 Made by Commissioner Proffitt and seconded by Commissioner Lankford to approve the minutes of the December meeting.

Vote: 10 Aye 1 Absent

Resolution #2 Made by Commissioner Peace and seconded by Commissioner Nelson to approve the Trustee's Report.

Vote: 10 Aye 1 Absent

Resolution #3 Made by Commissioner Wright and seconded by Commissioner Lankford for our county to join in the Southeast Local Development Corporation for Farmers Home Revolving Home Fund at \$3,000. a year for the next 3 years.

Vote: 8 Aye 2 Nay (Peace & Welch) 1 Absent

Resolution #4 Made by Commissioner Proffitt and seconded by Commissioner Crisp to amend Resolution #6 of the November, 1992, meeting and add Marion County as the tenth county to the Planning Region.

Vote: 10 Aye 1 Absent

* Resolution #5 Made by Commissioner Crisp and seconded by Commissioner Nelson to appoint Garland Lankford to the Solid Waste Board. And Also To put \$20,000. in the budget for Regional Solid Waste Plan as though it was needed.

Vote: 10 Aye 1 Absent

Resolution #6 Made by Commissioner Proffitt and seconded by Commissioner Crisp to approve Wilma Jean Wright as a notary.

Vote: 10 Aye 1 Absent

Resolution #7 Made by Commissioner Peace and seconded by Commissioner Nelson to approve Linda Bain as a notary-at-large.

Vote: 10 Aye 1 Absent

Resolution #8 Made by Commissioner Nelson and seconded by Commissioner Welch to approve the quarterly reports for the County General, Highway Dept., and Dept. of Education.

Vote: 10 Aye 1 Absent

Resolution #9 Made by Commissioner Peace and seconded by Commissioner Proffitt to approve the amendments to the County General. (see attached)

Vote: 10 Aye 1 Absent

Resolution #10 Made by Commissioner Peace and seconded by Commissioner Nelson to approve \$1,097.37 from Beginning Undesignated Fund Balance (39000) to Liability Insurance (58400/506).

Vote: 10 Aye 1 Absent

POLK COUNTY

Southeast Tennessee Solid Waste Planning Board Member

Hoyt Firestone

of Polk County

Formal appointment letter/meeting minutes were not located as of plan printing/submission date.

RHEA COUNTY

SEQUATCHIE COUNTY

Post-It™ brand fax transmittal memo 7671		# of pages » 10
To John Belcher	From Bill Harmon	
Co.	Co. Sec. Co. Exec.	
Dept.	Phone #	615-949-3479
Fax # 615-259-4067	Fax #	

MINUTES OF REGULAR MEETING OF THE COUNTY
COMMISSION OF SEQUATCHIE COUNTY, TENNESSEE

Be it remembered that a regular meeting of the County Commission of Sequatchie County, Tennessee was held on the 25th day of January, 1993, at 7:00 p.m., at the Courthouse in Dunlap, Tennessee.

Present and presiding was Bill W. Harmon, County Executive, Connie Easterly, County Clerk, and the following County Commissioners:

Randall Johnson
Lynn Merriman
Walter B. Thompson
Alvin Stockwell
Dwain Land
Rufus Mosley
Overton Johnson
Haskell Barker
Ralph Green

Randall Phillips
J. C. Christian, Sr.
Jimmy Garren
John Griswold, Jr.
Bobby Gene Turner
David Martin
Ronald Miller
Jimmy Harvey
Ray Hobbs

There being a quorum present, the following business was transacted:

The minutes of the regular Commissioners' Meeting of November 16, 1992, were read by the County Clerk. Upon motion of Bobby Gene Turner, second by Ralph Green, the Minutes were approved as read by a unanimous vote of the commission.

The Highway Department Report for the quarter ending December 31, 1992 was presented by Roy Johnson, Sequatchie County Road Supervisor. Upon motion by Rufus Mosley, second by Bobby Gene Turner, and upon a unanimous vote of the Commission, the Highway Department Report was approved and accepted as presented. (Said report is attached hereto and made apart hereof.)

The Trustee's report (along with an attached change of assessment list) for the quarter ending December 31, 1992, was presented by Trustee Larry Lockhart. Upon a motion by Jimmy Harvey, seconded by Randall Phillips, and upon a unanimous vote of the Commission, the Trustee's Report was approved and accepted as presented. (Said Report is attached hereto and made a part hereof.)

The Superintendent's Report for the period ending December 31, 1992, was presented by Superintendent Johnny Brown. Upon a motion by Overton Johnson, second by Rufus Mosley, and upon a unanimous vote of the commission, the Superintendent's Report was approved and accepted as presented. (Said Report is attached hereto and made a part hereof.)

Superintendent Brown also requested approval of a school budget amendment in the amount of \$56,352.00 for additional State teachers' salaries. A motion was made by Haskell Barker, second by Overton Johnson, and passed by a majority vote of the Commission.

The Building and Grounds Committee Report was presented by Ray Hobbs, who made a motion to hire an architect to develop plans for the Sequatchie County Courthouse which would enable the Courthouse to meet the American Disabilities Act requirements. This architect would plan, design, and oversee any changes made to the existing Courthouse. The cost (\$7,900.00) to be paid out of the Fund Balance Account (39000). This motion was seconded by Ellis Barker, and passed by a unanimous vote of the Commission. A motion was made by Ray Hobbs to sell three parcels of County property. One located in the City of Dunlap (minimum bid price of \$1,000); one located on the Cartwright Loop Road (minimum bid price of \$250.00); and one in the Fredonia Community (minimum bid price of \$500.00). The motion was seconded by Ellis Barker and passed by a unanimous vote of the Commission. After discussion on the 23,000 acres located on the side of Fredonia Mountain which the County proposed to sell, Ray Hobbs made a motion to refer this matter to the County Attorney and County Assessor who would bring a report to the next meeting at which time the sale of this property would be reconsidered.

Haskell Barker gave the Sanitation Report. All dumpster sites were cleaned up by Road Supervisor Roy Johnson and Fletcher Trucking Company at a cost of \$4,793.30. Haskell Barker made a motion to approve the Sanitation Report, Lynn Merriman seconded the motion, and it passed by a unanimous vote of the Commission.

Haskell Barker made a motion to study fencing the dumpster site on Highway 8 and put a gate up, a gate be put on the Signal Mountain dumpster site, and that two people be hired to keep these two sites open 28 hours a week and to supervise them. Hourly rate of pay to be \$4.35 an hour. This motion to be in effect until the end of this fiscal year. (Said hours and days of operation attached hereto and made a part hereof.) Sanitation funds which have already been allocated are to be used to pay the cost of \$3,992.40 to enact this motion. The motion was seconded by David Martin and passed by a unanimous vote of the Commission.

Road Supervisor Roy Johnson gave the Commission a list of six roads which he and the Road Committee recommended be approved by the Commission as County roads: 1. Window Rock Road, 500 ft; 2. Boynton Road, 600 ft; 3. Lewis Road, 4,200 ft; 4. Taylor Lane, 1,350 ft; 5. Hobbs Drive, 700 ft; and 6. River Drive, 2,400 ft. Ronald Miller, Road committee Chairman, made a motion to accept these as County roads, the motion was seconded by Ellis Barker and passed by a unanimous vote of the Commission. Ronald Miller made a motion to close 600 ft of Hitchcock Road at the request of the owner. The motion was seconded by Rufus Mosley and passed by a unanimous vote of the Commission.

Budget Chairman Jimmy Harvey presented a list of budget amendments and made a motion to approve these amendments. The motion was seconded by Rufus Mosley and approved by a unanimous vote of the Commission. (Said Budget Report is attached hereto and made a part hereof.) Jimmy harvey made a motion to buy a new copy machine at a cost of \$6,155.00 and to allow the Sheriff's Department to have the old one from the Counthouse. Monies for this expenditure to be taken out of Debt Service. The motion was seconded by John Griswold and passed by a unanimous vote of the Commission. Jimmy Harvey made a motion that the County purchase 10 acres as a site for the proposed National Guard Armory and that the current proposed site on Highway 28 be used for part of a proposed airport. Cost of this additional 10 acres not to exceed \$40,000.00 and must meet the approval of the National Guard. The

motion was seconded by Dwain Land and passed by a unanimous vote of the Commission. Jimmy Harvey made a motion to purchase a 1988 car for use by the Sheriff's Department, cost not to exceed \$2,800.00 and to be paid out of the Fund Balance Account (39000). The motion was seconded by Rufus Mosley and passed by a unanimous vote of the Commission. Jimmy Harvey made a motion to reduce to five (5) years the amount of time required for vestiture in the Tennessee Consolidated Retirement System. The motion was seconded by John Griswold and passed by a unanimous vote of the Commission. Jimmy Harvey made a motion to raise to \$200.00 the amount charged for a County Bear Permit (based upon approval by the Legislature). The motion was seconded by Randall Phillips and passed by a unanimous vote of the Commission.

The next order of business was to fill the unexpired term of the school board member from the 9th District. Jimmy Harvey nominated Beverly Gaston. Dwain Land made a motion that nominations cease. The motion was seconded by Ronald Miller and Mrs. Gaston was approved by a unanimous vote of the Commission.

David Martin made a motion to amend Resolution #316 to include Marion County in creating the Southeast Tennessee Municipal Solid Waste Planning Region and to name Bill W. Harmon, County Executive, to represent Sequatchie County on the Solid Waste Regional Board. The motion was seconded by Bobby Gene Turner and passed by a unanimous vote of the Commission. (Resolution #316 Attached)

John Griswold made a motion to approve Resolution #317 which amends the Surface Mining Control Act of 1977. Bobby Gene Turner seconded the motion and it passed by a unanimous vote of the Commission. (Resolution #317 Attached)

Jimmy Harvey made a motion to approve Resolution #319 Regarding Support of Prayer in Schools, Public Assemblies, and Sporting Events. The motion was seconded by Dwain Land and passed by a unanimous vote of the Commission. (Resolution #319 Attached)

John Griswold made a motion to approve Resolution #320 which Supports Extending the One Half Cent State Sales Tax for the Benefit of Local K-12 Education. The motion was seconded by Ralph

Green and passed by a unanimous vote of the Commission. (Resolution #320 Attached)

Jimmy Harvey made a motion to approve Resclution #321 which authorizes Group 1 members of the Tennessee Consolidated Retirement System to qualify for retirement benefits with five (5) years of creditable service. The motion was seconded by Dwain Land and passed by a unanimous vote of the Commission. (Resolution #321 Attached)

David martin made a motion to approve the Mutual Aid Agreement between the City of Dunlap and Sequatchie County. The motion was seconded by Bobby Gene Turner and passed by a unanimous vote of the Commission. (Copy Attached)

Chairman Bill W. Harmon gave an update on the Gypsy Moth Experiment. A discussion was held on the Bi-Centennial 5' x 7' Portrait to be placed in the Courthouse and each Commissioner was asked to donate \$100.00 toward the cost of the portrait and was told that each elected official would also donate \$100.00. It is to be unveiled in April, 1993.

Chairman Bill W. Harmon named the following to the Agricultural Extension Committee: Norman Christian, Brownie Ewton, and Overton Johnson. A motion was made by Rufus Mosley to approve these nominations. The motion was seconded by Ellis Barker and passed by a unanimous vote of the Commission.

County Attorney Tommy Austin gave an update on the Court Case between Sessions Judge Hollis Barker and the County. Judge Barker was awarded the \$2,500.00 per year increase due to additional duties. Ellis Barker made a motion to appeal the judgment. The motion was seconded by Ray Hobbs, and passed by a majority vote of the Commission.

Chairman Bill W. Harmon read a request from the county funeral homes to allow Gary Kilgore to be paid once a month directly by the County for digging graves of County residents. Mr. Kilgore will be required to send statements approved by the funeral homes before receiving payment. Rufus Mosley made a motion to approve this

request. The motion was seconded by John Griswold and passed by a unanimous vote of the Commission.

Discussion was held on the validity of a \$10,000.00 Bond in the Sessions Judge/County Court Case. No action was taken.

Upon motion by Rufus Mosley, and a second by Alvin Stockwell, and upon a unanimous vote of the Commission the following Notaries Public were appointed: Thomas Hall, Melba Albrecht, Marie Grant, Brenda D. Cockston, Marvin L. Jenkins, Adrian L. McWilliams, and Angela Johnson.

Upon a motion by Jimmy Harvey and a second by Ronald Miller and upon a unanimous vote of the Commission, the following Constable Bonds were approved: George Michael Green, Ronnie Hitchcock, Clyde Wilson Harvey, Franklin Eugene Moore, Daniel R. Smith, Rogers G. Tucker, and Raymond A. Spangler, Jr.

There being no further business, the meeting was adjourned by County Executive Bill W. Harmon.


CHAIRMAN

ATTESTED;

COUNTY CLERK

SEAL

CITY OF CHATTANOOGA

RESOLUTION NO. 19851

A RESOLUTION AUTHORIZING THE MAYOR TO APPOINT JACK MARCELLIS AS CHATTANOOGA'S REPRESENTATIVE TO THE SOUTHEAST MUNICIPAL SOLID WASTE PLANNING REGION BOARD.

WHEREAS, the 97th Tennessee General Assembly enacted T.C.A. Section 68-211-801 et seq. titled "Solid Waste Management Act of 1991"; and

WHEREAS, per T.C.A. Section 68-211-801, Hamilton County's Board of Commissioners have joined by resolution with Bledsoe, Bradley, Grundy, McMinn, Marion, Meigs, Polk, Rhea, and Sequatchie Counties in forming the Southeast Tennessee Municipal Solid Waste Planning Region; and

WHEREAS, per T.C.A. Section 68-211-801, each municipal solid waste planning region is required to create a board consisting of no less than five (5) members nor more than fifteen (15); and

WHEREAS, per T.C.A. Section 68-211-801, the Mayor of the City of Chattanooga has the authority to appoint a member of the Solid Waste Planning Region Board; and

NOW, THEREFORE,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF CHATTANOOGA, TENNESSEE, That the Mayor be and is hereby authorized

to appoint Jack Marcellis to the Municipal Solid Waste Planning
Region Board.

ADOPTED: June 1, 1993

MAM:cjc

CITY OF CLEVELAND

The following resolution was then presented and read in full:

RESOLUTION

WHEREAS, Stanley M. Thompson, Assessor of Property, has notified the Board of Mayor and Commissioners of the City of Cleveland, Tennessee, that an error has been made in the 1991 tax rolls wherein a parcel of land assessed in the name of Billy Joe Smith and wife, Helen I. Smith, was erroneously assessed and they are due a refund of \$96.52 for overpayment of their 1991 real property taxes (M-42J; G-1; P-8).

NOW, THEREFORE, BE IT RESOLVED by the Board of Mayor and Commissioners of the City of Cleveland, Tennessee, that the Clerk be, and hereby is, authorized to refund to Billy Joe Smith and wife, Helen I. Smith, the sum of \$96.52 as an overpayment of their 1991 real property taxes.

Commissioner Lyle moved that this resolution be adopted as read. The motion was seconded by Commissioner Ratterman; and upon roll call, unanimously passed.

The following resolution was then presented and read in full:

RESOLUTION

WHEREAS, Plan Graphics, Inc. has submitted to the GIS Board of Cleveland/Bradley County, Tennessee; and

WHEREAS, the Board of Mayor and Commissioners of the City of Cleveland desire to authorize the GIS Board of Cleveland/Bradley County to enter into said agreement with Plan Graphics, Inc.

NOW, THEREFORE, BE IT RESOLVED by the Board of Mayor and Commissioners of the City of Cleveland that the Mayor be, and hereby is, authorized to execute the attached agreement on behalf of the City of Cleveland.

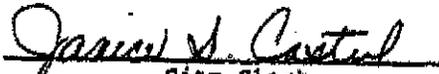
Commissioner Lyle moved that this resolution be adopted as read. The motion was seconded by Commissioner Ratterman; and upon roll call, unanimously passed.

Commissioner Ratterman moved that Craig Rivers be appointed to serve as the City's nomination to the Southeast Tennessee Solid Waste Planning Region Board. The motion was seconded by Commissioner Hicks; and upon roll call, unanimously passed.

Mayor Rowland announced that City offices will be closed Wednesday, November 11, 1992 in observance of Memorial Day.

There being no further business, the Board adjourned in regular order.


Mayor


City Clerk

P 411 th brand fax transmittal memo 7671 # of pages 1	From	Craig Rivers		
	To	City of Cleveland		
	Dept.	John Belcher	Phone #	
	Fax	Draper Acker	Fax #	(615) 259-4067

CITY OF RED BANK

MINUTES OF MEETING OF THE BOARD OF COMMISSIONERS
OF THE CITY OF RED BANK, TENNESSEE, MARCH 16, 1993

I. Call to Order

The meeting of the Board of Commissioners was called to order by Mayor Barnette at 7:30 PM, Tuesday, March 16, 1993.

II. Roll Call

Present and answering the roll call were: Commissioner Barger, Vice-Mayor Lewis, Mayor Barnette, Commissioner Eberhart and Commissioner Moore. Also present were City Manager Robinson, Assistant City Manager Dillard and City Attorney Stulce, as well as those citizens and employees listed on the attached exhibit "A" to these Minutes.

III. Invocation

The invocation was given by Reverend Brian Johnson, Assistant Pastor of the Red Bank Baptist Church.

IV. Pledge of Allegiance to the Flag

The pledge of allegiance was led by Matt Braxton and Boy Scout Troup #223 of the Grace Church of the Nazarene.

V. Consideration of Minutes of March 2, 1993

Commissioner Barger made a motion, which was seconded by Commissioner Moore that the minutes be approved omitting the reading with one correction. The motion carried with four "ayes" and Commissioner Eberhart abstaining.

VI. Citizen Comments

Former Mayor and Commissioner Tom Collins complimented the City for the excellent job during the recent snow storm.

VII. Public Hearings-None

VIII. Ordinances-Third and Final Reading

Ordinance No. 93-646-An Ordinance to amend Chapter 3, Title 8, the Red Bank Municipal Code by providing for revised rules pertaining to ambient air quality standards; new source performance standards; emission standards for hazardous air pollutants including asbestos; and by providing a new rule pertaining to a fee schedule for building demolition and renovation permits; and certain miscellaneous housekeeping revisions.

Commissioner Moore made a motion, which was seconded by Commissioner Barger to pass the Ordinance on third and final reading. The motion carried unanimously.

IX. Ordinances-Second Reading-None

X. Ordinances-First Reading-None

XI. Resolutions

Resolution No. 93-527-A Resolution appointing a representative to the Southeast Municipal Solid Waste Planning Region Board.

Commissioner Barger made a motion, which was seconded by Commissioner Moore to adopted Resolution No. 93-527. The motion carried unanimously.

XII. Business Items

1. Approval of Bid for Turn-Out Clothing

Commissioner Barger made a motion, which was seconded by Vice-Mayor Lewis to approve the low bid of \$3,111.50.

2. Approval of Bid for Breathing Apparatus

Vice-Mayor Lewis made a motion, which was seconded by Commissioner Moore to approve the low bid of \$2,209.31 submitted by Harless Fire Equipment. The motion carried unanimously.

3. Approval of Bid for Pit Burner Incinerator

Commissioner Moore made a motion, which was seconded by Commissioner Eberhart to approve the low bid of \$66,050 submitted by Crochet Equipment.

XIII. Reports

Vice-Mayor Lewis commended the City Manager for his extended stint at City Hall during the snow storm and applauded Public Works, the Police Department, the Fire Department and all City forces involved in the emergency proceedings. Commissioner Barger echoed the complements and thanked Sam Swope for his generosity in obtaining a generator for an elderly resident's home during the power outage. Mayor Barnette, Commissioner Moore and Commissioner Eberhart also praised the City for their outstanding efforts during the blizzard.

XIV. Adjournment

There being no further business, the meeting was adjourned.

Lester Barnette
Mayor

Margaret Sells
City Recorder

RESOLUTION NO. 93-527

A RESOLUTION APPOINTING A REPRESENTATIVE TO THE SOUTHEAST MUNICIPAL SOLID WASTE PLANNING REGION BOARD.

WHEREAS, the 97th Tennessee General Assembly enacted T.C.A. Section 68-211-801 et. seq. titled "Solid Waste Management Act of 1991"; and

WHEREAS, per T.C.A. Section 68-211-801 the Hamilton County's Board of Commissioners has joined by resolution with Bledsoe, Bradley, Grundy, Hamilton, McMinn, Meigs, Polk, Rhea, and Sequatchie Counties in forming the Southeast Tennessee Municipal Solid Waste Planning Region; and

WHEREAS, per T.C.A. Section 68-211-801, each municipal solid waste planning region is required to create a board consisting of no less than five (5) members nor more than fifteen (15); and

WHEREAS, per T.C.A. Section 58-211-801, the Mayor of the City of Red Bank has the authority to appoint a member of the Solid Waste Planning Region Board;

NOW, THEREFORE BE IT RESOLVED by the City Commission of Red Bank, Tennessee, that the Mayor's appointment of Jerry Robinson to the Municipal Solid Waste Planning Region Board represents the best interests and welfare of the residents of the City of Red Bank.

Attest:

Margaret Seward
City Recorder

Approved:

Lester Barnett
Mayor

Approved as to form
Arnold Hutto, Jr.

WANDA JAMES WJW
City Attorney

FROM ADMIN BLDG WBNP 10/31/94 17:29 P. 2 TOTAL P. 2

TOWN OF SIGNAL MOUNTAIN

R. PHIL CORKER
Mayor

JOSEPH C. WAGNER
Town Attorney

RICHARD SONNENBURG
Town Manager



R. FREDERICK DECOSIMO
Vice Mayor & Councilman

LEE ABELSON
Councilman

JAMES H. ALTHAUS
Councilman

ROBERT E. STEEL, JR.
Councilman

Town of Signal Mountain

1111 RIDGEWAY AVENUE
SIGNAL MOUNTAIN, TENNESSEE 37377
615-886-2177

December 15, 1992

Mr. Dalton Roberts, County Executive
Hamilton County Courthouse
Chattanooga, TN 37402

Dear Mr. Roberts:

Tennessee Code Annotated, Section 68-211-813 requires that municipalities providing solid waste collection or disposal services designate a representative to the regional board to be established by Hamilton County, Tennessee. We do provide this service and therefore are required to be represented on the regional board for the purpose of solid waste regional planning.

On December 14, 1992, our Town Council met and approved my appointment of Town Manager Rick Sonnenburg or his designee as the representative of the Town of Signal Mountain, Tennessee. Copies of the minutes evidencing this approval are attached to this letter, as required by law.

Sincerely,

THE TOWN OF SIGNAL MOUNTAIN

R. Phil Corker
Mayor

Enclosure
CC: Mr. Joe Guthrie

***** DECEMBER 14, 1992 *****

The Town Council of the Town of Signal Mountain held its regular meeting on Monday, December 14, 1992, at 7:00 p.m. in the Town Hall. Those present were:

Mayor R. Phil Corker
 Vice-Mayor R. Frederic Decosimo
 Councilmember Lee Abelson
 Councilmember James Althaus
 Councilmember Robert Steel, Jr.

Also present were: Town Attorney Joe Wagner
 Town Manager Rick Sonnenburg
 See attached list for others present

The Mayor called the meeting to order at 7:00 p.m. and Councilmember Steel offered the prayer.

Councilmember Althaus moved that the minutes of the November 9, 23, and December 7, 1992, meetings be approved. The motion was seconded by Councilmember Decosimo and passed unanimously.

Councilmember Steel moved that Messrs. Jim Caldwell, Sam Hoyer and Steve Bullard be reappointed to the Board of Zoning Appeals. The motion was seconded by Councilmember Althaus and passed unanimously.

Councilmember Steel moved that Mmes. Nancy Dragoo, Kay Pearce, and Ann Ozburn be reappointed to the Parks Board. The motion was seconded by Councilmember Althaus and passed unanimously.

Councilmember Althaus moved that Messrs. Hale Hamilton and Dan Saieed be reappointed to the Planning Commission. The motion was seconded by Councilmember Steel and passed unanimously.

Councilmember Althaus moved that Mrs. Connie Muldoon be reappointed to the Recreation Board. The motion was seconded by Councilmember Abelson and passed unanimously.

Councilmember Decosimo moved that Mr. Bome Patten be appointed Town liaison to the Signal Mountain Golf and Country Club Board. The motion was seconded by Councilmember Steel. The motion passed with Councilmembers Steel, Decosimo and

Althaus voting yes; Mayor Corker voting no; and Councilmember Abelson abstaining.

Councilmember Steel moved that Mr. Sonnenburg or his designee be appointed to the County Solid Waste Regional Planning Board. The motion was seconded by Councilmember Althaus and passed unanimously.

The Council will make appointments to the Planning Commission, Recreation Board, and Sidewalk Committee at the next meeting.

Councilmember Althaus moved that the Ordinance rezoning 406 Georgia Avenue from High Density Residential to Moderate Density Zoning be approved on Second/ Final Reading. The motion was seconded by Councilmember Steel and passed unanimously.

Councilmember Althaus moved that Ordinance 11-1102 regarding unauthorized posting of notices be eliminated. The motion was seconded by Councilmember Steel and passed unanimously. Councilmember Althaus moved that the Ordinance revising Ordinance 11-1101 regarding unauthorized posting of notices be approved. The motion was seconded by Councilmember Steel and passed unanimously.

Councilmember Abelson moved that the Council approve the recommendation of the Town Manager that the property owners at the end of Brady Point Road must bear the cost of any construction of a cul-de-sac in front of their property. Councilmember Althaus seconded the motion and it passed unanimously.

Councilmember Althaus moved that the contract with W.R.U.D. for Fire Department access to fire hydrants in St. Ives be approved. The motion was seconded by Councilmember Abelson and passed unanimously.

Councilmember Althaus moved that the revised administrative services agreement with ICMA Retirement Corporation be approved. The motion was seconded by Councilmember Steel and passed unanimously.

Councilmember Steel moved that the legislature be requested to approve a private act to amend the Town Charter to allow the Council to create a Design Review Commission. The motion was seconded by Councilmember Althaus and passed unanimously.

After a discussion of the December 7 meeting with citizens regarding the possibility of the County taking over the Signal Mountain Library, Councilmember Steel moved that a letter be sent to the Bicentennial Library requesting the Chattanooga-Hamilton County Bicentennial Library Board to advise the Council as to the possibility, practicality, and necessary steps for the Signal Mountain Library to become a branch of the Chattanooga-Hamilton County Bicentennial Library. The motion was seconded by Councilmember Decosimo and passed unanimously. The letter will be faxed to Dr. Barbara Wofford and Ms. Jane McFarland on Tuesday.

Councilmember Steel moved that Mr. Sonnenburg's recommendation to pursue option 5 (wait to hear the results of our grant application for sidewalk assistance) in regard to the proposed sidewalk from Thrasher School to Skyline Park Drive be approved. The Motion was seconded by Councilmember Althaus and passed unanimously.

Councilmember Steel moved that the low bid of JWT, Inc. in the amount of \$112,409.25 be accepted for the sewer main replacement project. The motion was seconded by Councilmember Abelson and passed unanimously.

There was a motion by Councilmember Steel to approve Directions Data Research to conduct a citizen survey from among three options \$6,400, \$5,800, or \$5,200 depending upon the length of the questionnaire which is ultimately developed. The motion was seconded by Councilman Althaus and passed unanimously. Mr. Sonnenburg will get in touch with Dr. Swansbrough to express the Council's appreciation for his help.

Mrs. Jean Dolan inquired about the proposed shooting range. After much discussion, it was agreed that a press release should be issued to the citizens on this issue.

Rachael Decosimo expressed her concern about citizens calling the pound on dog problems first instead of calling the owner and giving them a chance to take care of the problem.

Mr. John Houstrup reported that his water pressure is greatly increased since

Councilmember Steel advised that the county will put an officer at the bottom and at the top of the W Road with radios when there is an accident or problem on the highway coming up the mountain to help direct traffic.

The Mayor expressed his appreciation for the EMS on the mountain. He also reported he is trying to arrange a meeting with the Deputy Commissioner of Transportation in Nashville. The Council decided on January 4 or 5. The Council also set a special meeting for December 21 at 9:30 a.m. to prepare for the meeting in Nashville. He also suggested a get-together with the new Aldermen of Walden. A date of January 13 at 7:00 p.m. was set.

Mrs. Olyphant reported that the Planning Commission did not meet this month.

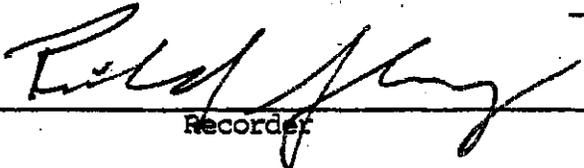
The Council agreed to participate in the Hamilton County Housing Improvement Program.

Mr. Sonnenburg informed the Council of the TML Legislative Reception and Conference in Nashville on February 8-9.

Mr. Sonnenburg reported that the Watkins house on Short Creek is ready to be demolished. He will work up specifications and send them out for bids.

Mr. Sonnenburg showed the Council and residents present sketches from the architect for the proposed addition to Town Hall. The Council agreed the architect should be requested to provide estimates for the construction of this addition.

There being no further business, the meeting was adjourned at 9:40 p.m.


Recorder

Mayor

Southeast Tennessee Solid Waste Planning Board Member

Frank Welch

of the City of Dayton

Mr. Welch explains that there was no "formal" meeting minutes or resolution appointing him to membership in the PLanning Board.

APPENDIX A

I.2.c. LIST OF CURRENT OFFICERS

Southeast Tennessee Municipal Solid Waste Planning Board Officers

<u>Position</u>	<u>Member</u>	<u>Jurisdiction</u>
Chairman	Jack Marcellis	City of Chattanooga
Vice Chairman	Howell Moss	Marion County
Vice Chairman	Ron Banks	McMinn County

APPENDIX A

I.5.a. ADVISORY COMMITTEE LIST OF MEMBERS

Advisory Committee

<u>Name/Address</u>	<u>Representing:</u>
Larry Angel BFI 1018 E. 38th St. Chattanooga, TN 37407	Private hauler
Becky Browder Real Property Office 123 E. 7th St. Chattanooga, TN 37402-1904	Hamilton Co.
Hal Baker Orange Grove Center P.O. Box 3249 Chattanooga, TN 37405	Chattanooga MRF operator
Harold Coker Coker Tire Co. 5100 Brainerd Rd. Chattanooga, TN 37411	Tire Dealer/Co. Commissioner
Ann Gray Marion Co. Planning & Development P.O. Box 310 Jasper, TN 37347	Marion Co. Planner
Bob Goins Commercial Metals Co. P.O. Box 6187 Chattanooga, TN 37401	Metals recycling
Cheryl Green SANTEK 1306 S. Lee Highway Cleveland, TN 37311	Landfill operator (Bradley Co.)
Dennis Haldeman 2702 Poe Rd. Soddy-Daisy, TN 37379	Environmental activist
John Harmon P.O. Box 651 Dunlap, TN 37327	Sequatchie Co.
Dyan Hayes Keep America Beautiful 160 Second St. Cleveland, TN 37311	KAB

Michael Mallen
Southern Foundry Supply, Inc.
P.O. Box 6216
Chattanooga, TN 37401

Metals end-user

Barney Morgan
Co. Executives Office
208 Courthouse
Chattanooga, TN 37402

Hamilton Co.

Stan Moses
McMinn Co. Sanitation Dept.
Rt. 2, Box 152
Athens, TN 37303

McMinn Co.

David Payne
City Hall
Rt. 4, Box 705
South Pittsburg, TN 37380

South Pittsburg

Mark Payne
22 Walnut St.
Kimball, TN 37347

Marion Co.

Bill Penn
3100 E. 11th St.
Chattanooga, TN 37402

City of Chattanooga

Bill Pollard
Holston Southeast
P.O. Box 6069
Chattanooga, TN 37401

Used oil recycling

Sam Powell
TVA
1101 Market St.
SP-5-D
Chattanooga, TN 37402

TVA

APPENDIX A

I.5.b. ADVISORY COMMITTEE MISSION STATEMENT

Southeast Tennessee Regional Solid Waste Plan

Advisory Committee Mission Statement

It is the mission of the Southeast Tennessee Solid Waste Citizen's Advisory Committee to provide a sounding board of the Solid Waste Planning Board which represents a cross section of the Southeast Tennessee community.

Further, it is the mission of the Southeast Tennessee Solid Waste Citizen's Advisory Committee to provide a means of disseminating information concerning the solid waste planning process throughout the Southeast Tennessee communities.

Further, it is the mission of the Southeast Tennessee Solid Waste Citizen's Advisory Committee to provide feedback and input into the planning process from the different economic sectors throughout the Southeast Tennessee communities.

APPENDIX A

I.5.c. ADVISORY COMMITTEE ACTIVITIES DURING PLAN DEVELOPMENT

Advisory Committee activity during the planning process was on an informal basis consisting of networking with the planning board, the consultant and others. No formal meetings or actions were recorded.

APPENDIX A

I.5.d. ADVISORY COMMITTEE PROBABLE ROLE IN IMPLEMENTATION

Southeast tennessee Regional Solid Waste Plan

Advisory Committee Role in Implementation

The Citizen's Advisory Committee will continue to fulfill its mission as per the mission statement and will be advised of all meetings of the Solid Waste Planning Board.

APPENDIX A

II. FINANCIAL ACCOUNTING REQUIREMENT LETTERS

BLEDSON COUNTY

Bledson County shares landfill facilities with Sequatchie County; the Honorable Bill Harmon (Sequatchie County Executive) is the treasurer of landfill operations and handles all financial records/accounting for both counties.



Office of the
Bradley County Executive

P.O. Box 1167 - Cleveland, Tennessee 37364-1167
(615) 476-0600

October 31, 1994

Mr. Paul E Davis:
Solid Waste Assistance Division
14th Floor, L & C Tower
401 Church Street
Nashville, Tennessee 37243-0455

Dear Mr. Davis:

This letter is to certify that Bradley County has complied with the financial accounting requirements of TCA 68-31-874 (a) amended.

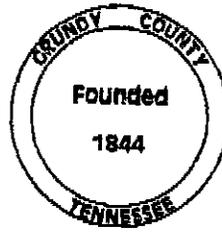
Sincerely,

A handwritten signature in cursive script, appearing to read "Donna J. Hubbard".

Donna J. Hubbard
County Executive

DJH/sw

Grundy County Executive
Michael Partin
LAMONT, TENNESSEE 37301
OFFICE: 615/692-3718 OR 3167



"NATURE'S BEAUTY AT
ITS BEST"
SAVAGE GULF
STONE DOOR
GRUNDY STATE FOREST

November 2, 1994

Mr. Paul Evan Davis
Solid Waste Assistance Division
14th Floor, L & C Tower
401 Church Street
Nashville, Tn. 37243-0455

Dear Mr. Davis,

This letter is to certify that Grundy County has complied with the financial accounting requirements of TCA 68-211-874(a) as amended.

Sincerely,

A handwritten signature in dark ink, appearing to read "Michael Partin".

Michael Partin
County Executive



CLAUDE RAMSEY
County Executive

HAMILTON COUNTY GOVERNMENT
COURTHOUSE
CHATTANOOGA, TENNESSEE 37402

Board of Commissioners
CURTIS D. ADAMS
RALPH C. BARGER
BILL BENNETT
ARTHUR C. CAMPBELL
HAROLD L. COKER
REV. PAUL A. McDANIEL
BEN MILLER
PAUL V. NOLAN
JAMES R. VANDERGRIF

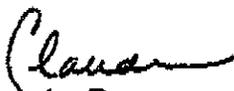
November 3, 1994

Paul Evan Davis
Solid Waste Assistance Division
14th Floor, L&C Tower
401 Church Street
Nashville, TN 37243-0455

Dear Mr. Davis:

This letter is to certify that Hamilton County has complied with the financial accounting requirements of TCA 68-31-874(a) as amended.

Sincerely,


Claude Ramsey
County Executive

Howell Moss
COUNTY EXECUTIVE, MARION COUNTY
P.O. BOX 789
JASPER, TENNESSEE 37347
(615) 942-2552
FAX (615) 942-1327



October 31, 1994

Mr. Paul Evan Davis
Solid Waste Assistance Division
14th Fl., L & C Tower
401 Church Street
Nashville, Tennessee 37243-0455

Dear Mr. Davis:

This letter is to certify that Marion County has complied with the financial accounting requirement of TCA 68-31-874 (a) as amended.

Sincerely,

Handwritten signature of Howell W. Moss in cursive script.

Howell W. Moss
Marion County Executive

HWM/smg

Office of Director of Finance
McMinn County
Athens, Tennessee 37303

October 31, 1994

Mr. Paul Evan Davis
Solid Waste Assistance Division
14th Floor, L & C Tower
401 Church Street
Nashville, Tn. 37243-0455

Dear Mr. Davis:

This is to certify that McMinn County has complied with the financial accounting requirements of T.C.A. 68-31-874 (a) as amended.

If you have any questions, please call at (615) 745-4103.

Sincerely,


Ed J. Fiegle
Director of Finance

EJF/jh



NATIONAL REGISTER OF
HISTORIC PLACES

OFFICE OF THE COUNTY EXECUTIVE
DECATUR, TENNESSEE 37322

R. GARLAND LANKFORD
P.O. Box 156
Decatur, TN
615-334-5850

October 31, 1994

Mr. Paul Evan Davis
Solid Waste Assistance Division
14th Floor, L & C Tower
401 Church Street
Nashville, TN 37243-0455

Dear Mr. Davis:

I am pleased that we are nearing the final edition of the Ten Year Solid Waste Plan for Southeast Tennessee.

This letter is to certify that Meigs County has complied with the financial accounting requirements of TCA-68-31-874 as amended.

If I can be of further assistance to you in anyway, please do not hesitate to contact me.

Sincerely,

Garland Lankford
Meigs County Executive

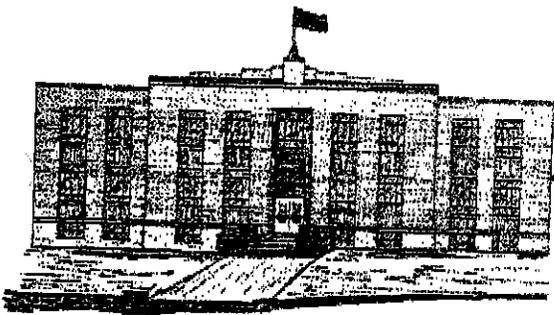
GL/mb

State of Tennessee)

County of Meigs)

The Meigs County Legislative Body met in a regular session meeting on Monday, January, 18, 1993, in the courtroom of the Meigs County Courthouse in Decatur, Tennessee.

Garland Lankford, County Executive; Chevi Bearden, County Clerk; Mike Verstynen, County



Hoyt T. Firestone

POLK COUNTY EXECUTIVE

Office of County Executive
P.O. Box 128 — Benton, TN 37307
Phone (615) 338-4527

November 2, 1994

Mr. Paul Evan Davis
Solid Waste Assistance Division
14th Floor, L & C Tower
401 Church Street
Nashville, TN 37243-0455

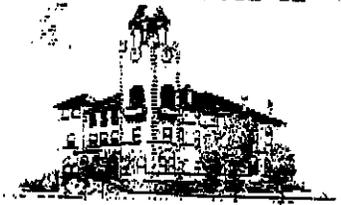
Dear Mr. Davis:

This letter is to certify that Polk County has complied with the financial accounting requirements of TCA 68-31-874(a) as amended.

Sincerely,

Hoyt T. Firestone

HTF/ps



BILLY RAY PATTON
1 RHEA COUNTY EXECUTIVE

Rhea County Courthouse
1475 Market Street
Dayton, Tennessee 37321
(615) 775-7801

October 31, 1994

Mr. Paul Evan Davis
Solid Waste Assistance Division
14th Floor, L & C Tower
401 Church Street
Nashville, Tn. 37243-0455

Dear Mr. Davis:

This letter is to certify that Rhea County has complied with the financial accounting requirements of TCA 68-31-874(a) as amended.

Sincerely;

A handwritten signature in cursive script that reads "Billy Ray Patton". The signature is written in dark ink and is positioned above the typed name.

Billy Ray Patton
Rhea County Executive

BRP/jts



BILL W. HARMON

SEQUATCHIE COUNTY EXECUTIVE
P.O. BOX 595 · DUNLAP, TENNESSEE 37327
PHONE: (615) 949-3479

November 2, 1994

Mr. Paul Evan Davis
Solid Waste Assistance Division
14th Floor, L&C Tower
401 Church Street
Nashville, Tennessee 37243-0455

Dear Mr. Davis:

This letter is to certify that Sequatchie County has complied with the financial accounting requirements of TCA 68-31-874(a) as amended.

Sincerely,

Bill W Harmon
County Executive

BWH\dl1

Post-it™ brand fax transmittal memo 7671		# of pages >	1
To	Jon Belcher	From	Bill Harmon
Co.	Draper Aden	Co.	Seq. Co. Exec.
Dept.	Assoc.	Phone #	949-3479
Fax #	615-259-4067	Fax #	



City of Chattanooga

DEPARTMENT OF FINANCE AND ADMINISTRATION

CITY HALL ANNEX

Chattanooga, Tennessee 37402

(615) 757-5234

JAMES S. BONEY
ADMINISTRATOR
AND
CITY FINANCE OFFICER

DAISY W. MADISON, CPA
DEPUTY FINANCE OFFICER
DONALD A. BAIN
ASSISTANT FINANCE OFFICER

November 3, 1994

Mr. Paul Evan Davis
Solid Waste Assistance Division
14th Floor, L & C Tower
401 Church Street
Nashville, Tennessee 37243-0455

Dear Mr. Davis:

This letter is to certify that that the City of Chattanooga has complied with the financial accounting requirements of TCA 68-31-874 (a) as amended.

Sincerely,

A handwritten signature in cursive script that reads "Daisy Madison".

Daisy Madison

DM/tg

cc: Jack Marcellis

APPENDIX B

**1.a. & 1.b. COPIES OF COUNTY LETTERS TO DIRECTOR OF STATE
PLANNING OFFICE REQUESTING ADJUSTMENTS TO THE 1989 BASE LINE
DATA ALONG WITH SUPPORTING DOCUMENTATION**

Southeast Tennessee Regional Solid Waste Planning Board
Jack Marcellis, Chairman

May 3, 1994

Mr. Paul Evan Davis
Tennessee Division of Solid
Waste Assistance
L&C Tower, 14th Floor
401 Church Street
Nashville, TN 37243-0455

RE: Variance Request from 1990 UT Study Numbers for Calculation of 25% Reduction Requirements-- Bradley County, Tennessee

Dear Mr. Davis:

As a portion of the solid waste planning process, the Southeast Tennessee Solid Waste Planning Board has carefully scrutinized the waste generation figures and the population estimates for Bradley County given in the 1990 UT Study.

Revisions to Population Estimates

A comparison of the population data assumed in the 1989 UT Study with the 1980 and 1990 census data showed the 1989 UT Study population as being estimated substantially higher than any reasonable interpolation of the census data would allow for it to be. We are therefore requesting a revision to the base year data based upon a revision to the population estimate for 1989.

Table 1
Population Interpolation for Bradley County (Straight Line)

Year	Estimated Population
1980 ¹	67,547
1989	73,096
1990 ¹	73,712

¹ Census Data

Synopsis of Proposed Base Year Figures

Table 2
1989 Waste Generation and Population Figures for Bradley County

	Waste Generation (Tons Per Year)	Population	Per Capita Waste Generation (Tons Per Person Per Year)
From UT Study	65,520	75,400	0.87
Variance Requested	65,520	73,096	0.90

Please review the numbers in the preceding tables and call me with any questions or comments which you might have. Due to time constraints in meeting the 1 July 1994 deadline, we are proceeding with these numbers in the planning process until further notification from you.

Thank you for your assistance with our variance request.

Sincerely
Southeast Tennessee Solid Waste Planning Board



Jack Marcellis
Chairman

Southeast Tennessee Regional Solid Waste Planning Board
Jack Marcellis, Chairman

May 3, 1994

Mr. Paul Evan Davis
Tennessee Division of Solid
Waste Assistance
L&C Tower, 14th Floor
401 Church Street
Nashville, TN 37243-0455

RE: Variance Request from 1990 UT Study Numbers for Calculation of 25% Reduction Requirements-- Bledsoe County, Tennessee

Dear Mr. Davis:

As a portion of the solid waste planning process, the Southeast Tennessee Solid Waste Planning Board has carefully scrutinized the waste generation figures and the population estimates for Bledsoe County given in the 1990 UT Study.

Revisions to Population Estimates

A comparison of the population data assumed in the 1989 UT Study with the 1980 and 1990 census data showed the 1989 UT Study population as being estimated substantially higher than any reasonable interpolation of the census data would allow for it to be. We are therefore requesting a revision to the base year data based upon a revision to the population estimate for 1989.

Table 1
Population Interpolation for Bledsoe County (Straight Line)

Year	Estimated Population
1980 ¹	9,478
1989	9,650
1990 ¹	9,669

¹ Census Data

Synopsis of Proposed Base Year Figures

Table 2
1989 Waste Generation and Population Figures for Bledsoe County

	Waste Generation (Tons Per Year)	Population	Per Capita Waste Generation (Tons Per Person Per Year)
From UT Study	7,862	9,950	0.79
Variance Requested	7,862	9,650	0.81

Please review the numbers in the preceding tables and call me with any questions or comments which you might have. Due to time constraints in meeting the 1 July 1994 deadline, we are proceeding with these numbers in the planning process until further notification from you.

Thank you for your assistance with our variance request.

Sincerely
Southeast Tennessee Solid Waste Planning Board



Jack Marcellis
Chairman

Southeast Tennessee Regional Solid Waste Planning Board
Jack Marcellis, Chairman

May 3, 1994

Mr. Paul Evan Davis
Tennessee Division of Solid
Waste Assistance
L&C Tower, 14th Floor
401 Church Street
Nashville, TN 37243-0455

RE: Variance Request from 1990 UT Study Numbers for Calculation of 25% Reduction Requirements-- Grundy County, Tennessee

Dear Mr. Davis:

As a portion of the solid waste planning process, the Southeast Tennessee Solid Waste Planning Board has carefully scrutinized the waste generation figures and the population estimates for Grundy County given in the 1990 UT Study.

Revisions to Population Estimates

A comparison of the population data assumed in the 1989 UT Study with the 1980 and 1990 census data showed the 1989 UT Study population as being estimated substantially higher than any reasonable interpolation of the census data would allow for it to be. We are therefore requesting a revision to the base year data based upon a revision to the population estimate for 1989.

Table 1
Population Interpolation for Grundy County (Straight Line)

Year	Estimated Population
1980 ¹	¹ 13,787
1989	13,404
1990 ¹	13,362

¹ Census Data

Synopsis of Proposed Base Year Figures

**Table 2
1989 Waste Generation and Population Figures for Grundy County**

	Waste Generation (Tons Per Year)	Population	Per Capita Waste Generation (Tons Per Person Per Year)
From UT Study	12,556	14,350	0.88
Variance Requested	12,556	13,404	0.94

Please review the numbers in the preceding tables and call me with any questions or comments which you might have. Due to time constraints in meeting the 1 July 1994 deadline, we are proceeding with these numbers in the planning process until further notification from you.

Thank you for your assistance with our variance request.

Sincerely
Southeast Tennessee Solid Waste Planning Board



Jack Marcellis
Chairman

Southeast Tennessee Regional Solid Waste Planning Board
Jack Marcellis, Chairman

May 2, 1994

Mr. Paul Evan Davis
Tennessee Division of Solid
Waste Assistance
L&C Tower, 14th Floor
401 Church Street
Nashville, TN 37243-0455

RE: Variance Request from 1990 UT Study Numbers for Calculation of 25% Reduction Requirements-- Hamilton Tennessee

Dear Mr. Davis:

As a portion of the solid waste planning process, the Southeast Tennessee Solid Waste Planning Board has carefully scrutinized the waste generation figures and the population estimates for Hamilton County given in the 1990 UT Study. Our analysis has shown that both the population figures and the waste generation figures are in error based upon updated census figures and scale data at the area landfills. We are therefore requesting a revision of the base year data for calculating Hamilton County's 25% diversion requirement.

1989 Figures As Per University of Tennessee Study

The figures published in the UT Study are as follows:

Waste Generation in Tons Per Year (1989)	Estimated Population (1989)	Per Capita Waste Generation Rate (1989)
357,214	294,100	1.21

Data Not Available in 1989

Scales were in place at the Hamilton County Landfill prior to 1989 but good records were not kept of the scale data until 1991, therefore there was no scale data available in 1989.

Waste Generation Figures

The most recent full year of scale data available for both landfills is the calendar 1993 year. The waste of the region was disposed of in three primary locations in 1993: The Summitt Landfill, the Hamilton County Landfill, and an Air Curtain Destructor for wood which is operated by the City of Chattanooga. The air curtain destructor was not in operation in 1989 and therefore is appropriate to include in the total. The 1993 waste generation numbers are synopsisized in the following table:

Waste Generation - 1993

Facility	Total Disposed	% Generated in Hamilton County	Total Generated in Hamilton County
Summitt - Chattanooga	385,967	98.6 ¹	380,563
Wood Recycle Facility - Chattanooga	19,139	100	19,139
Hamilton County Landfill	57,120	90 ²	51,408
Total	462,226		451,110

¹ Percent based on scale data from January - March 1994.

² Percent estimated by Mr. Ken Castleberry, Landfill Supervisor.

Please note that both the Summitt Landfill and the Hamilton County Landfill receive some amount of out-of-county waste. This waste stream was subtracted from the figures as shown in the above table.

Population Figures

The estimated population for Hamilton County in 1993 as provided in the Needs Assessment prepared by the Southeast Tennessee Development District is 284,081.

Synopsis of Proposed Base Year Figures

Waste Generation and Population Figures for Hamilton County

	Waste Generation (Tons Per Year)	Population	Per Capita Waste Generation (Tons Per Person Per Year)
From UT Study	357,214	294,100	1.21
Variance Requested	451,110	284,081	1.59

Please review the numbers in the preceding tables and call me with any questions or comments which you might have. Due to time constraints in meeting the 1 July 1994 deadline, we are proceeding with these numbers in the planning process until further notification from you.

I have attached the background data from which the above figures were generated to assist you in your review.

Thank you for your assistance with our variance request.

Sincerely
Southeast Tennessee Solid Waste Planning Board



Jack Marcellis
Chairman

Attach.

FILE COPY

CITY OF CHATTANOOGA
 Waste Resources Division
 Tonnage Transactions At Wood Recycle Facility

Month:	December	1993	1993	% Difference
Residential Brush	B	33.28 T	33.28 T	0.00 %
City Brush	E	1,097.71 T	1,097.71 T	0.00 %
Pallets	J	93.20 T	93.20 T	
City Pallets	L	5.27 T	5.27 T	
Commercial Brush	Z	257.52 T	257.52 T	0.00 %
Total		1,388.51 T	1,388.51 T	0.00 %
Chips Residential	V	121.45 T	121.45 T	0.00 %
Chips Commercial	Y	65.56 T	65.56 T	0.00 %
Total		187.01 T	187.01 T	0.00 %
Transfer Summit	O	829.89 T	829.89 T	0.00 %
Sale of Metals	K	4.70 T	4.70 T	0.00 %

Period:	Jan - Dec	1993	1993	% Difference
Residential Brush	B	1,015.41 T	1,015.41 T	0.00 %
City Brush	E	16,486.06 T	16,486.06 T	0.00 %
Pallets	J	93.20 T	93.20 T	
City Pallets	L	5.27 T	5.27 T	
Commercial Brush	Z	5,808.92 T	5,808.92 T	0.00 %
Total		23,310.39 T	23,310.39 T	0.00 %
Chips Residential	V	3,586.40 T	3,586.40 T	0.00 %
Chips Commercial	Y	689.10 T	689.10 T	0.00 %
Total		4,275.50 T	+ 4,275.50 T	0.00 %
Transfer Summit	O	8,345.89 T	- 8,345.89 T	0.00 %
Sale of Metals	K	191.14 T	- 191.14 T	0.00 %

19,133.36

CITY OF MOBILE
Waste Resources Division
Tonnage Received At Sanitary Landfill

FILE COPY

Month: December

Type of Waste		1989 Base Year		1993 Current Year		% Difference 1989/1993
Asbestos	A	82.86	T	99.08	T	19.58
City Garbage	C	4,030.22	T	4,952.79	T	22.89
Demolition	D	0.00	T	0.00	T	
City Brush	E	578.05	T	703.54	T	21.71
City Trash	F	2,272.04	T	2,547.37	T	12.12
Garbage	G	5,942.61	T	8,916.38	T	50.04
County T & G	H	46.24	T	70.03	T	51.45
Single Tire Pass	I	0.00	E	71.00	E	
Sale of Metals	K	0.00	T	(2.45)	T	
Metals	M	0.00	T	0.00	T	
Out of State	N	0.00	T	0.00	T	
Spec Waste Non St	O	714.72	T	0.00	T	(100.00)
Single Tire Truck	P	0.00	E	0.00	E	
Tires	R	39.84	T	15.50	T	(61.09)
Special Waste	S	391.52	T	117.39	T	(69.89)
Trash	T	5,537.85	T	9,770.31	T	73.30
Sludge	W	5,593.01	T	7,759.57	T	38.92
Roofing	X	0.00	T	235.18	T	
Net Total *		25,328.96	T	35,195.19	T	38.95

Period : Jan - Dec

Type of Waste		1989 Base Year		1993 Current Year		% Difference 1989/1993
Asbestos	A	884.26	T	336.22	T	(61.98)
City Garbage	C	58,462.69	T	55,389.54	T	(5.26)
Demolition	D	170.25	T	108.14	T	(36.48)
City Brush	E	7,110.97	T	11,454.80	T	61.09
City Trash	F	26,939.56	T	19,484.24	T	(27.67)
Garbage	G	91,617.15	T	90,082.38	T	(1.68)
County T & G	H	991.42	T	1,323.46	T	33.49
Single Tire Pass	I	40.00	E	681.20	E	1,602.50
Sale of Metals	K	0.00	T	(2.45)	T	
Metals	M	116.59	T	31.93	T	(72.61)
Out of State	N	0.00	T	0.00	T	
Spec Waste Non St	O	17,920.33	T	9.45	T	(99.95)
Single Tire Truck	P	0.00	E	17.00	E	
Tires	R	702.91	T	219.10	T	(68.83)
Special Waste	S	3,065.29	T	2,750.08	T	(10.31)
Trash	T	195,960.05	T	109,454.94	T	3.30
Sludge	W	73,531.77	T	93,848.89	T	27.46
Roofing	X	0.00	T	1,476.80	T	
Net Total *		387,574.38	T	386,367.42	T	(0.41)

Source : Waste Resources Division 1994

* Single Tires not included

TONNAGES - Buried / Hauled / Collected
Fiscal Year 92/93

Month	Landfill	Spring Creek	Sequoiah	Garbage Trucks
July	3,707.00	642.35	428.85	113.35
August	3,273.10	615.85	359.45	188.00
September	3,327.75	545.55	416.55	229.30
1992 October	3,079.15	573.70	378.85	225.60
November	3,246.40	517.00	317.25	235.50
December	3,910.50	646.20	436.05	222.30
January	4,271.60	517.55	376.00	204.45
February	3,715.50	470.35	328.15	184.45
March	5,348.05	570.50	362.15	247.90
1993 April	5,814.18	636.55	408.26	216.04
May	5,576.93	616.06	365.41	231.05
June	5,822.58	682.61	396.59	242.81
TOTALS	51,092.74	7,034.27	4,573.56	2,540.75

HAMILTON CO.

TONNAGES - Buried / Hauled / Collected
Fiscal Year 93/94

Month	Landfill	Spring Creek	Sequoiah	Garbage Trucks
July	4,310.61	657.77	432.28	108.69
August	4,391.35	701.93	412.74	180.75
September	4,637.03	614.62	408.96	240.95
1993 October	4,501.61	550.64	364.32	236.68
November	4,352.00	593.15	350.03	242.85
December	4,377.61	564.67	425.70	226.51
January	5,004.87	608.72	329.71	208.01
February				
March				
April				
May				
June				

1993 TOTAL
57120 TONS

Southeast Tennessee Regional Solid Waste Planning Board
Jack Marcellis, Chairman

May 3, 1994

Mr. Paul Evan Davis
Tennessee Division of Solid
Waste Assistance
L&C Tower, 14th Floor
401 Church Street
Nashville, TN 37243-0455

RE: Variance Request from 1990 UT Study Numbers for Calculation of 25% Reduction Requirements-- Marion County, Tennessee

Dear Mr. Davis:

As a portion of the solid waste planning process, the Southeast Tennessee Solid Waste Planning Board has carefully scrutinized the waste generation figures and the population estimates for Marion County given in the 1990 UT Study.

Revisions to Population Estimates

A comparison of the population data assumed in the 1989 UT Study with the 1980 and 1990 census data showed the 1989 UT Study population as being estimated substantially higher than any reasonable interpolation of the census data would allow for it to be. We are therefore requesting a revision to the base year data based upon a revision to the population estimate for 1989.

Table 1
Population Interpolation for Marion County (Straight Line)

Year	Estimated Population
1980 ¹	24,416
1989	24,816
1990 ¹	24,860

¹ Census Data

Synopsis of Proposed Base Year Figures

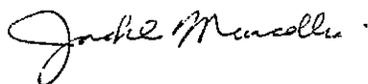
**Table 2
1989 Waste Generation and Population Figures for Marion County**

	Waste Generation (Tons Per Year)	Population	Per Capita Waste Generation (Tons Per Person Per Year)
From UT Study	26,000	25,825	1.01
Variance Requested	26,000	24,816	1.05

Please review the numbers in the preceding tables and call me with any questions or comments which you might have. Due to time constraints in meeting the 1 July 1994 deadline, we are proceeding with these numbers in the planning process until further notification from you.

Thank you for your assistance with our variance request.

Sincerely
Southeast Tennessee Solid Waste Planning Board



Jack Marcellis
Chairman

Southeast Tennessee Regional Solid Waste Planning Board
Jack Marcellis, Chairman

May 3, 1994

Mr. Paul Evan Davis
Tennessee Division of Solid
Waste Assistance
L&C Tower, 14th Floor
401 Church Street
Nashville, TN 37243-0455

RE: Variance Request from 1990 UT Study Numbers for Calculation of 25% Reduction Requirements-- McMinn County, Tennessee

Dear Mr. Davis:

As a portion of the solid waste planning process, the Southeast Tennessee Solid Waste Planning Board has carefully scrutinized the waste generation figures and the population estimates for McMinn County given in the 1990 UT Study.

Revisions to Population Estimates

A comparison of the population data assumed in the 1989 UT Study with the 1980 and 1990 census data showed the 1989 UT Study population as being estimated substantially higher than any reasonable interpolation of the census data would allow for it to be. We are therefore requesting a revision to the base year data based upon a revision to the population estimate for 1989.

Table 1
Population Interpolation for McMinn County (Straight Line)

Year	Estimated Population
1980 ¹	41,878
1989	42,332
1990 ¹	42,383

¹Census Data

Synopsis of Proposed Base Year Figures

**Table 2
1989 Waste Generation and Population Figures for McMinn County**

	Waste Generation (Tons Per Year)	Population	Per Capita Waste Generation (Tons Per Person Per Year)
From UT Study	38,454	43,700	0.88
Variance Requested	38,454	42,332	0.91

Please review the numbers in the preceding tables and call me with any questions or comments which you might have. Due to time constraints in meeting the 1 July 1994 deadline, we are proceeding with these numbers in the planning process until further notification from you.

Thank you for your assistance with our variance request.

Sincerely
Southeast Tennessee Solid Waste Planning Board



Jack Marcellis
Chairman

Southeast Tennessee Regional Solid Waste Planning Board
Jack Marcellis, Chairman

May 3, 1994

Mr. Paul Evan Davis
Tennessee Division of Solid
Waste Assistance
L&C Tower, 14th Floor
401 Church Street
Nashville, TN 37243-0455

RE: Variance Request from 1990 UT Study Numbers for Calculation of 25% Reduction Requirements-- Meigs County, Tennessee

Dear Mr. Davis:

As a portion of the solid waste planning process, the Southeast Tennessee Solid Waste Planning Board has carefully scrutinized the waste generation figures and the population estimates for Meigs County given in the 1990 UT Study.

Revisions to Population Estimates

A comparison of the population data assumed in the 1989 UT Study with the 1980 and 1990 census data showed the 1989 UT Study population as being estimated substantially higher than any reasonable interpolation of the census data would allow for it to be. We are therefore requesting a revision to the base year data based upon a revision to the population estimate for 1989.

Table 1
Population Interpolation for Meigs County (Straight Line)

Year	Estimated Population
1980 ¹	7,431
1989	7,973
1990 ¹	8,033

¹ Census Data

Synopsis of Proposed Base Year Figures

**Table 2
1989 Waste Generation and Population Figures for Meigs County**

	Waste Generation (Tons Per Year)	Population	Per Capita Waste Generation (Tons Per Person Per Year)
From UT Study	4,555	8,600	0.53
Variance Requested	4,555	7,973	0.57

Please review the numbers in the preceding tables and call me with any questions or comments which you might have. Due to time constraints in meeting the 1 July 1994 deadline, we are proceeding with these numbers in the planning process until further notification from you.

Thank you for your assistance with our variance request.

Sincerely
Southeast Tennessee Solid Waste Planning Board



Jack Marcellis
Chairman

Southeast Tennessee Regional Solid Waste Planning Board
Jack Marcellis, Chairman

May 3, 1994

Mr. Paul Evan Davis
Tennessee Division of Solid
Waste Assistance
L&C Tower, 14th Floor
401 Church Street
Nashville, TN 37243-0455

RE: Variance Request from 1990 UT Study Numbers for Calculation of 25% Reduction Requirements-- Polk County, Tennessee

Dear Mr. Davis:

As a portion of the solid waste planning process, the Southeast Tennessee Solid Waste Planning Board has carefully scrutinized the waste generation figures and the population estimates for Polk County given in the 1990 UT Study.

Revisions to Population Estimates

A comparison of the population data assumed in the 1989 UT Study with the 1980 and 1990 census data showed the 1989 UT Study population as being estimated substantially higher than any reasonable interpolation of the census data would allow for it to be. We are therefore requesting a revision to the base year data based upon a revision to the population estimate for 1989.

Table 1
Population Interpolation for Polk County (Straight Line)

Year	Estimated Population
1980 ¹	13,602
1989	13,639
1990 ¹	13,643

¹ Census Data

Synopsis of Proposed Base Year Figures

Table 2
1989 Waste Generation and Population Figures for Polk County

	Waste Generation (Tons Per Year)	Population	Per Capita Waste Generation (Tons Per Person Per Year)
From UT Study	11,678	13,950	0.84
Variance Requested	11,678	13,639	0.86

Please review the numbers in the preceding tables and call me with any questions or comments which you might have. Due to time constraints in meeting the 1 July 1994 deadline, we are proceeding with these numbers in the planning process until further notification from you.

Thank you for your assistance with our variance request.

Sincerely
Southeast Tennessee Solid Waste Planning Board



Jack Marcellis
Chairman

Southeast Tennessee Regional Solid Waste Planning Board
Jack Marcellis, Chairman

May 3, 1994

Mr. Paul Evan Davis
Tennessee Division of Solid
Waste Assistance
L&C Tower, 14th Floor
401 Church Street
Nashville, TN 37243-0455

RE: Variance Request from 1990 UT Study Numbers for Calculation of 25% Reduction Requirements-- Rhea County, Tennessee

Dear Mr. Davis:

As a portion of the solid waste planning process, the Southeast Tennessee Solid Waste Planning Board has carefully scrutinized the waste generation figures and the population estimates for Rhea County given in the 1990 UT Study.

Revisions to Population Estimates

A comparison of the population data assumed in the 1989 UT Study with the 1980 and 1990 census data showed the 1989 UT Study population as being estimated substantially higher than any reasonable interpolation of the census data would allow for it to be. We are therefore requesting a revision to the base year data based upon a revision to the population estimate for 1989.

Table 1
Population Interpolation for Rhea County (Straight Line)

Year	Estimated Population
1980 ¹	24,235
1989	24,333
1990 ¹	24,344

¹ Census Data

Synopsis of Proposed Base Year Figures

**Table 2
1989 Waste Generation and Population Figures for Rhea County**

	Waste Generation (Tons Per Year)	Population	Per Capita Waste Generation (Tons Per Person Per Year)
From UT Study	14,742	25,500	0.58
Variance Requested	14,742	24,333	0.61

Please review the numbers in the preceding tables and call me with any questions or comments which you might have. Due to time constraints in meeting the 1 July 1994 deadline, we are proceeding with these numbers in the planning process until further notification from you.

Thank you for your assistance with our variance request.

Sincerely
Southeast Tennessee Solid Waste Planning Board



Jack Marcellis
Chairman

Southeast Tennessee Regional Solid Waste Planning Board
Jack Marcellis, Chairman

May 3, 1994

Mr. Paul Evan Davis
Tennessee Division of Solid
Waste Assistance
L&C Tower, 14th Floor
401 Church Street
Nashville, TN 37243-0455

RE: Variance Request from 1990 UT Study Numbers for Calculation of 25% Reduction Requirements-- Sequatchie County, Tennessee

Dear Mr. Davis:

As a portion of the solid waste planning process, the Southeast Tennessee Solid Waste Planning Board has carefully scrutinized the waste generation figures and the population estimates for Sequatchie County given in the 1990 UT Study.

Revisions to Population Estimates

A comparison of the population data assumed in the 1989 UT Study with the 1980 and 1990 census data showed the 1989 UT Study population as being estimated substantially higher than any reasonable interpolation of the census data would allow for it to be. We are therefore requesting a revision to the base year data based upon a revision to the population estimate for 1989.

Table 1
Population Interpolation for Sequatchie County (Straight Line)

Year	Estimated Population
1980 ¹	8,605
1989	8,837
1990 ¹	8,863

¹ Census Data

Synopsis of Proposed Base Year Figures

Table 2
1989 Waste Generation and Population Figures for Sequatchie County

	Waste Generation (Tons Per Year)	Population	Per Capita Waste Generation (Tons Per Person Per Year)
From UT Study	11,794	9,000	1.31
Variance Requested	11,794	8,863	1.33

Please review the numbers in the preceding tables and call me with any questions or comments which you might have. Due to time constraints in meeting the 1 July 1994 deadline, we are proceeding with these numbers in the planning process until further notification from you.

Thank you for your assistance with our variance request.

Sincerely
Southeast Tennessee Solid Waste Planning Board



Jack Marcellis
Chairman

APPENDIX B

**1.c. COPY OF LETTER FROM THE DIRECTOR OF STATE PLANNING
OFFICE APPROVING THE ADJUSTMENTS**



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
401 Church Street
Nashville, Tennessee 37243

May 26, 1994

Jack Marcellis, Chairman
Southeast TN Municipal Solid Waste Planning Region
City Hall, Suite 210
Chattanooga, TN 37402

Dear Mr. Marcellis:

We have received and reviewed your requests for base year adjustments to counties within the Southeast Tennessee Municipal Solid Waste Planning Region. The Department approves your base year data as follows:

Bledsoe County
Bradley County
Grundy County
Hamilton County
Marion County
McMinn County
Meigs County
Polk County
Rhea County
Sequatchie County

The revised Annual Per Capita Disposal Rate will be 0.81 tons.
The revised Annual Per Capita Disposal Rate will be 0.90 tons.
The revised Annual Per Capita Disposal Rate will be 0.94 tons.
The revised Annual Per Capita Disposal Rate will be 1.59 tons.
The revised Annual Per Capita Disposal Rate will be 1.05 tons.
The revised Annual Per Capita Disposal Rate will be 0.91 tons.
The revised Annual Per Capita Disposal Rate will be 0.57 tons.
The revised Annual Per Capita Disposal Rate will be 0.86 tons.
The revised Annual Per Capita Disposal Rate will be 0.61 tons.
The revised Annual Per Capita Disposal Rate will be 1.33 tons.

Should you require any further assistance on this or other matters, please do not hesitate to contact us.

Sincerely,

Paul Evan Davis
Director
Division of Solid Waste Assistance

PED:GHD:dhm

APPENDIX C

1. SUMMARY OF WORKSHOPS AND PUBLIC MEETINGS

APPENDIX C
AGENDA OF WORKSHOPS

Southeast Tennessee Solid Waste Planning Workshop

AGENDA

Introductory Remarks	Howell Moss, Marion County Executive
Overview of Solid Waste Regulations	Gary Sexton, Development District
Formation of the Southeast TN Region	Joe Guthrie, Development District
Planning Board Introduction and Activities to Date	Bill Harmon, Sequatchie County Executive
Contents and Purpose of Regional Plan	Jeff Crate, Draper Aden
Overview of Waste Technologies	Jeff Crate, Draper Aden
Schedule for Developing the Ten Year Plan	Jeff Crate, Draper Aden
Answers to Written Questions	All

APPENDIX C
SUMMARY OF WORKSHOPS

MEMORANDUM

Southeast Planning Board Introductory Workshops

- I. 7/12/93 7PM Bradley County Courthouse
No. of Attendees 21
Representatives from:
Southeast TN Development District (3)
Bradley County (4)
Cleveland Daily Banner (1)
Polk County (1)
McMinn County (5)
Rhea County (1)
Cleveland (2)
Santek Environmental (1)
DAA (3)
see attached "sign-up" list for names
- II. 7/13/93 3PM Chattanooga/Hamilton County Library
No. of Attendees 21
Representatives from:
Southeast TN Development District (3)
Marion County (3)
Grundy County (3)
CTI (1)
Sequatchie County (2)
South Pittsburgh (1)
Jasper (2)
Bledsoe (1)
Altamont (1)
DAA (3)
Other (1)
See attached "sign-up" list for names
- III. 7/13/93 6PM (CT) Jasper, TN
No. of Attendees 22
Southeast TN Development District (3)
City of Chattanooga (2)
Hamilton County (2)
TVA (1)
BFI (2)
Vedco Energy (1)
Dupont (2)
Signal Mountain (1)
Orange Grove (1)
Rhea County (1)
CTI (2)
DAA (3)

APPENDIX C

ANNOUNCEMENT OF WORKSHOPS

MEMO

TO: Southeast Tennessee Solid Waste Planning Board
Local Advisory Committees
Interested Parties

FROM: Joe Guthrie

DATE: July 7, 1993

SUBJECT: Regional Solid Waste Workshops

The consultants working on the Southeast Tennessee Municipal Solid Waste Regional Plan will conduct a series of initial workshops across the Southeast Tennessee region on July 12th and 13th. These workshop will allow you the opportunity to meet the consultants from Draper Aden Associates who will be developing the plan. The workshop will focus on the state planning regulations, the proposed timetable for developing the plan, the process for development of the plan, and a brief assessment of the goals for the total process. There will be an opportunity for questions and discussion.

These initial workshops are being held for members of the regional planning board, local solid waste planning advisory committee members, and interested citizens.

Three workshops have been scheduled:

The first one for the Hiwassee area will be Monday, July 12, 7:00 pm (ET) at the Bradley County Courthouse, Room 107, Cleveland.

A second meeting is scheduled for Tuesday, July 13, 3:00 PM (ET) to be held at the Chattanooga-Hamilton County Bicentennial Library on Broad Street in Chattanooga.

The Third meeting, for the Sequatchie Valley, will be Tuesday evening July 13, 6:00 PM (CT) at the Election Commission Offices on the Northwest side of the square adjacent to the Marion County Courthouse in Jasper.

These workshops mark the beginning of the planning phase of the state's solid waste process. The workshops will be identical in format and if you can not participate in the one closest to you we hope you can make one of the other introductory meetings.

APPENDIX C
ATTENDANCE LIST OF WORKSHOPS

SOUTHEAST TENNESSEE SOLID WASTE PLANNING BOARD
INTRODUCTORY WORKSHOP

SIGN-IN SHEET

CHATTANOOGA

<u>NAME</u>	<u>ORGANIZATION/ADDRESS</u>	<u>TELEPHONE</u>
Howell Mon	Macon Co. Executive	615-942-2532
Gay Sexton	SETDD	615-266-5781
Bell Doff	Grundy Co. Commission	615-572-2707
Ron Key	CTI	267-7613
JOE GUTHRIE	SETDD	266-5781
RANDALL JOHNSON	SEB Co. Comm.	949-2317
Pat Harmon	Sev Co.	949-3479
David Payne	Gov Pitt	937-7511
Harvey Cowan	Jasper, TN	942-5865
Ed Frazier	Co. Executive (Blount)	447-6855
Adolf Gishen	Co. Comm. / ALTAMONT, TN	692-3806
Michael Partin	Co. Executive Grundy	692-3718
David Dally	CO. COMM / PELHAM, TN	467-3129
Tommy Thompson	Co. Comm. (MARIION)	942-5718
Mark Payne	Macon County Landfill	837-6610
Fanny Simcox	Mayor Jasper TN	942-3180
John Lawrence	SETDD	266-5781
Joseph C. Gallagher	DRADOR ADEM	259-2202
LARRY HAYES	"	"
GLOWN SWINEMAN	"	"
JEFF CRATO	"	"

SOUTHEAST TENNESSEE SOLID WASTE PLANNING BOARD
INTRODUCTORY WORKSHOP

SIGN-IN SHEET
MARION COUNTY

<u>NAME</u>	<u>ORGANIZATION/ADDRESS</u>	<u>TELEPHONE</u>
LARRY HAYES	DRAPER ADEN ASSOC	615-259-2202
ROBERT YATES		615 867-2313
Gary Sexton	SETDD	615 266-5781
GLENK SWINEHART	DAA	615/259-3996
DOUG HANCOCK	SETDD	615/266-5781
George Martin		205/632-642x
JACK C. MARCUS	CITY OF CHATT.	(615) 757-5110
Gary Bean	Hamilton Co.	(615) 757-2424
J. FREDERICK WEINHOLD	TVA	(615) 757-2885
LARRY ANGEL	BFI	615 867-4650
Bill Tinchell	Vedco Energy	615 892-9597
JOE GUTHRIE	SETDD	615-266-5781
Bill Penn	City of Chatta.	615-697-1408
BILL BRYMER	DoPer	615-875-7836
Cindy Sisco/Reynolds	Dulac	615-875-3325
Mike Housen	Hamilton Co	757-2089
PECK SONNENBURG	Town of Signal Mountain	615-886-2177
PHILLIP MORRIS	BFI	615-867-4650
HAL BAKER	Orange Grove	829-1457
Bob Berkman	Rhea Co.	775-7801
GARY COBBY	CTI	267-7613
RON KEY	CTI	267-7613

7/12/93

SOLID WASTE WORKSHOP
BRADLEY COUNTY COURTHOUSE
7:00 p.m.

Name Address

SETOD

~~De Cole~~
Jack O'Grady Bradley County Sanitation Board

ALLEN MINCEY CLEVELAND DAILY BANNER,
Hayl Junstone Polk County Executive

Kew Higgins Bradley Co. SanteK

EDWARD CAYLOR " " "

Stan Mann McMin Co.

Bobby Carter McMin Co

Rex Moses McMin Co

RON BANKS McMin Co.

PAUL TALLENT, Rhea Co.

CHARLES WADDELL McMINN CO.

Daniel Hubbard Bradley Co.

Craig Linn Cleveland

JOE GUTHRIE SETDD

Cheryl Dunson SanteK Environmental

Name

Address

Gary Sexton

SETDA

Larry Wayne

Treasurer Assoc

Mike Hednett

Cleveland

APPENDIX C

2. ATTENDANCE LIST AND SUMMARY OF PUBLIC HEARING

Regional Solid Waste Plan
 Southeast Tennessee Solid Waste Planning Region
 August 12, 1994

Attendance List

Name	Organization	Address/Phone
Jane Danick	SETDD	
Hebbie Thomas	SETDD	
Bill Pen	Dept. Public Works City of Chattanooga	1250 E. 3rd St 697-1408
Jack Agel	SETDD	
Doug Howards	SETDD	
Arnold May	Marion Co.	
Mark Partz	Grundy Co.	
Jeff Crater	Draper Adm. Assoc.	
GARY LIDE	" " "	
Bluen Swinhart	Draper Adm. Assoc.	Nash. 615/259-3996
LARRY HAYES	" " "	" " " "
Milton Wajid	SLDA	
Craig Tomp	SETDD	
Ray Kator	SETDD	
GARY D. LANDER	CHAMBLISS & BARNER	LOWD TALLAHASSEE 615/757-0220 Chattanooga 37402
Mark Payne	J. W. D. I.	
YON BANKS	McMinn Co.	
Hale Root	Evergreen Development District	266-5787
RICK SONNENBURG	Town of Signal Mtn.	
Craig Biuens	City of Cleveland	559-3330
ROBINSON	Rock Bank	
Ken Castleberry	Hamilton County	
Wynn Hillbrand	Hamilton County	

Regional Solid Waste Plan
Southeast Tennessee Solid Waste Planning Region
August 12, 1994

Attendance List

Name	Organization	Address/Phone
Joe Guthrie	Southeast Development	615-266-5781
JACK C. MARCELLUS	CITY OF CHATTANOOGA	615-757-5110
Gilbert D. Cook	Orkeville	615-447-2919
C. J. Jensen	SETDD	615-266-5781
Paul Harmon	Seg Co.	615-949-3479
Susan Adblatt	McMinn Co	615-266-5781

Southeast Tennessee Solid Waste Planning Region

Public Hearing Synopsis

Public Hearing Date and Time: August 12, 1994 at 10:00 A.M.

Public Hearing Location: Offices of the Southeast Tennessee Development District, 25 Cherokee Boulevard, Chattanooga, Tennessee

The meeting was called to order by Jack Marcellis, Chairman of the Southeast Tennessee Solid Waste Planning Board. The attendance list is attached.

Mr. Marcellis briefly described the solid waste planning process to date.

Jeffrey Crate of Draper Aden Associates (the Board's consultant) presented an overview of the plan recommendations and the reasoning behind these recommendations.

There was one request to speak at the public hearing. This request was made by Mr. Gary D. Lander, an attorney with Chambliss and Bahner of Chattanooga, Tennessee. Mr. Lander's firm has been retained by McKee Foods Corporation of Collegedale in Hamilton County whose complex is located in the vicinity of the Summitt Landfill which serves Chattanooga. Mr. Lander's questions and comments were as follows:

- **Diversion/Reduction**

Noted that sludge composting had been removed from the plan between the first draft and the second draft of the document;

Noted that industrial source reduction requirements were adjusted upward between the two drafts;

Questioned the viability of the "beneficial use" diversion program;

Questioned the amount of pressure which was applied by the City of Chattanooga to make these changes between the drafts.

- **Cost Considerations for Landfill Development**

Questioned discrepancies between the cost projections created by the City of Chattanooga's consultant with those shown in the plan for development of the Summitt Landfill into a Subtitle D facility.

- Environmental Considerations

Noted that no hydrogeological assessment of the expansion area of the Summitt Landfill site was made as a portion of the plan;

Noted that the plan did not include any comments concerning the City of Chattanooga's operational practices at the Summitt Landfill;

Questioned the viability of a plan which reflected only the direct costs and did not account for the environmental considerations.

During Mr. Lander's presentation, Mr. Bill Penn (the recycling coordinator for Chattanooga) questioned Mr. Lander concerning his reasoning for being involved in the process in the first place. Mr. Lander stated that McKee Food Corporation desired to have the Summitt Landfill closed and that his firm had been retained to assist them in this matter.

APPENDIX E

LETTERS TO PLANNING COMMISSIONS



City of Chattanooga

October 31, 1994

Chairman
Polk County Planning Commission
P. O. Box 128
Benton, TN 37307

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Mr. Chairman:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

The Tennessee Regional (TCA 13-3-101 et seq) and Municipal (TCA 13-4-101 et seq) planning statutes emphasize that planning documents which may affect the future of an area be available to relevant local planning commissions for review. The law does not require planning commissions to approve solid waste plans nor does it require planning commissions to comment on the plans.

If you have any questions, please contact Mr. Jon Belcher with Draper Arden Associates, our engineering consultant, at (615)259-3996.

Sincerely,

A handwritten signature in cursive script, reading "Jack C. Marcellis".

Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates



City of Chattanooga

October 31, 1994

Ms. Francis Fults, Chairperson
City of Monteagle Planning Commission
City Hall, P. O. Box 127
Monteagle, TN 37356

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Ms. Fults:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

The Tennessee Regional (TCA 13-3-101 et seq) and Municipal (TCA 13-4-101 et seq) planning statutes emphasize that planning documents which may affect the future of an area be available to relevant local planning commissions for review. The law does not require planning commissions to approve solid waste plans nor does it require planning commissions to comment on the plans.

If you have any questions, please contact Mr. Jon Belcher with Draper Arden Associates, our engineering consultant, at (615)259-3996.

Sincerely,

A handwritten signature in cursive script, reading "Jack C. Marcellis".

Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates



City of Chattanooga

October 31, 1994

Dr. Ken Nix, Chairman
City of Dunlap Planning Commission
P. O. Box 546
Dunlap, TN 37327

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Dr. Nix:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

The Tennessee Regional (TCA 13-3-101 et seq) and Municipal (TCA 13-4-101 et seq) planning statutes emphasize that planning documents which may affect the future of an area be available to relevant local planning commissions for review. The law does not require planning commissions to approve solid waste plans nor does it require planning commissions to comment on the plans.

If you have any questions, please contact Mr. Jon Belcher with Draper Arden Associates, our engineering consultant, at (615)259-3996.

Sincerely,

A handwritten signature in cursive script that reads "Jack C. Marcellis".

Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates



City of Chattanooga

October 31, 1994

Chairman
Spring City Planning Commission
City Hall, P. O. Box 369
Spring City, TN 37381

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Mr. Chairman:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

The Tennessee Regional (TCA 13-3-101 et seq) and Municipal (TCA 13-4-101 et seq) planning statutes emphasize that planning documents which may affect the future of an area be available to relevant local planning commissions for review. The law does not require planning commissions to approve solid waste plans nor does it require planning commissions to comment on the plans.

If you have any questions, please contact Mr. Jon Belcher with Draper Arden Associates, our engineering consultant, at (615)259-3996.

Sincerely,

A handwritten signature in cursive script, reading "Jack C. Marcellis".

Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates



City of Chattanooga

October 31, 1994

Chairman
City of Graysville Planning Commission
P. O. Box 100
Graysville, TN 37338

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Mr. Chairman:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

The Tennessee Regional (TCA 13-3-101 et seq) and Municipal (TCA 13-4-101 et seq) planning statutes emphasize that planning documents which may affect the future of an area be available to relevant local planning commissions for review. The law does not require planning commissions to approve solid waste plans nor does it require planning commissions to comment on the plans.

If you have any questions, please contact Mr. Jon Belcher with Draper Arden Associates, our engineering consultant, at (615)259-3996.

Sincerely,

Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates



City of Chattanooga

October 31, 1994

Mr. Charlie Reynolds, Chairman
City of Dayton Planning Commission
P. O. Box 226
Dayton, TN 37321

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Mr. Reynolds:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

The Tennessee Regional (TCA 13-3-101 et seq) and Municipal (TCA 13-4-101 et seq) planning statutes emphasize that planning documents which may affect the future of an area be available to relevant local planning commissions for review. The law does not require planning commissions to approve solid waste plans nor does it require planning commissions to comment on the plans.

If you have any questions, please contact Mr. Jon Belcher with Draper Arden Associates, our engineering consultant, at (615)259-3996.

Sincerely,

A handwritten signature in cursive script that reads "Jack C. Marcellis".

Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates



City of Chattanooga

October 31, 1994

Mr. Robert Forsten, Chairman
Rhea County Planning Commission
c/o Billy Ray Patton
1475 Market Street
Dayton, TN 37321

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Mr. Forsten:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

The Tennessee Regional (TCA 13-3-101 et seq) and Municipal (TCA 13-4-101 et seq) planning statutes emphasize that planning documents which may affect the future of an area be available to relevant local planning commissions for review. The law does not require planning commissions to approve solid waste plans nor does it require planning commissions to comment on the plans.

If you have any questions, please contact Mr. Jon Belcher with Draper Arden Associates, our engineering consultant, at (615)259-3996.

Sincerely,

Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates



City of Chattanooga

October 31, 1994

Chairman
City of Copperhill Planning Commission
P. O. Box 640
Copperhill, TN 37317

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Mr. Chairman:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

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If you have any questions, please contact Mr. Jon Belcher with Draper Arden Associates, our engineering consultant, at (615)259-3996.

Sincerely,

A handwritten signature in cursive script that reads "Jack C. Marcellis".

Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates



City of Chattanooga

October 31, 1994

Mr. Dale Dworak, Chairman
City of Decatur Planning Commission
City Hall, P. O. Box 188
Decatur, TN 37322

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Mr. Dworak:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

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If you have any questions, please contact Mr. Jon Belcher with Draper Arden Associates, our engineering consultant, at (615)259-3996.

Sincerely,

Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates



City of Chattanooga

October 31, 1994

Dr. John Ewing, Chairman
Meigs County Planning Commission
P. O. Box 6
Ten Mile, TN 37880

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Dr. Ewing:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

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If you have any questions, please contact Mr. Jon Belcher with Draper Arden Associates, our engineering consultant, at (615)259-3996.

Sincerely,

A handwritten signature in cursive script that reads "Jack C. Marcellis".

Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates



City of Chattanooga

October 31, 1994

Mr. Bill Norman, Chairman
City of South Pittsburg Planning Commission
City Hall, P. O. Box 705
204 W. 3rd Street
South Pittsburg, TN 37380

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Mr. Norman:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

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If you have any questions, please contact Mr. Jon Belcher with Draper Arden Associates, our engineering consultant, at (615)259-3996.

Sincerely,

A handwritten signature in cursive script that reads "Jack C. Marcellis".

Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates



City of Chattanooga

October 31, 1994

Ms. Anne Gray, Chairperson
City of Kimball Planning Commission
c/o Marion County Office of Planning & Development
P. O. Box 310
Jasper, TN 37347

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Ms. Gray:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

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If you have any questions, please contact Mr. Jon Belcher with Draper Arden Associates, our engineering consultant, at (615)259-3996.

Sincerely,

Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates



City of Chattanooga

October 31, 1994

Mr. Mac Bumpus, Chairman
City of Jasper Planning Commission
P. O. Box 310
Jasper, TN 37347

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Mr. Bumpus:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

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If you have any questions, please contact Mr. Jon Belcher with Draper Arden Associates, our engineering consultant, at (615)259-3996.

Sincerely,

Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates



City of Chattanooga

October 31, 1994

Chairman, City of Whitwell Planning Commission
c/o Marion County Planning Commission
Courthouse Annex, Courthouse Square
Jasper, TN 37347

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Mr. Chairman:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

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If you have any questions, please contact Mr. Jon Belcher with Draper Arden Associates, our engineering consultant, at (615)259-3996.

Sincerely,

A handwritten signature in cursive script, reading "Jack C. Marcellis".

Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates



City of Chattanooga

October 31, 1994

Chairman
Marion County Planning Commission
Courthouse Annex, Courthouse Square
Jasper, TN 37347

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Mr. Chairman:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

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If you have any questions, please contact Mr. Jon Belcher with Draper Arden Associates, our engineering consultant, at (615)259-3996.

Sincerely,

Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates



City of Chattanooga

October 31, 1994

Ms. Effie Lones, Chairperson
City of Niota Planning Commission
P. O. Box 146, City Hall
Niota, TN 37826

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Ms. Lones:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

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If you have any questions, please contact Mr. Jon Belcher with Draper Arden Associates, our engineering consultant, at (615)259-3996.

Sincerely,

A handwritten signature in cursive script that reads 'Jack C. Marcellis'.

Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates



City of Chattanooga

October 31, 1994

Mr. Jim Alsip, Chairman
City of Etowah Planning Commission
Etowah City Hall, P. O. Box 390
Etowah, TN 37331

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Mr. Alsip:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

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Sincerely,

Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates



City of Chattanooga

October 31, 1994

Chairman
City of Englewood Planning Commission
P. O. Box 150
Englewood, TN 37329

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Mr. Chairman:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

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Sincerely,

Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates

City of Chattanooga

October 31, 1994

Mr. George Price, Chairman
City of Athens Planning Commission
P. O. Box 849
Athens, TN 37371

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Mr. Price:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

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If you have any questions, please contact Mr. Jon Belcher with Draper Arden Associates, our engineering consultant, at (615)259-3996.

Sincerely,



Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates

City of Chattanooga

October 31, 1994

Mr. John Profitt, Chairman
McMinn County Planning Commission
100 New Englewood Drive
Athens, TN 37303

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Mr. Profitt:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

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Sincerely,



Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates

City of Chattanooga

October 31, 1994

Mr. T. D. Harden
City of Chattanooga/
Hamilton County Planning Commission
201 Cith Hall Annex
Chattanooga, TN 37402

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

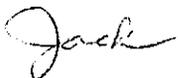
Dear T.D.:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

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Sincerely,



Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates



City of Chattanooga

October 31, 1994

Mr. Wayne Kohlwes, Tracy City Planning Commission
Chattanooga State Office Building
540 McCallie Avenue
Chattanooga, TN 37402

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Mr. Kohlwes:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

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Sincerely,

A handwritten signature in cursive script that reads "Jack C. Marcellis".

Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates



City of Chattanooga

October 31, 1994

Chairman
Grundy County Planning Commission
P. O. Box 177
Altamont, TN 37301

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Mr. Chairman:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

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Sincerely,

Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates



City of Chattanooga

October 31, 1994

Mr. Craig Bivens, Chairman
Cleveland Planning Commission
160 2nd Street, N.E.
Cleveland, TN 37311

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Mr. Bivens:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

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Sincerely,

A handwritten signature in cursive script that reads "Jack C. Marcellis".

Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates



City of Chattanooga

October 31, 1994

Chairman
Charleston Planning Commission
P. O. Box 431
Charleston, TN 37310

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Mr. Chairman:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

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Sincerely,

Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates



City of Chattanooga

October 31, 1994

Mr. Ron Dickson, Chairman
Bradley County Planning Commission
P. O. Box 1167
Cleveland, TN 37364

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

Dear Mr. Dickson:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

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If you have any questions, please contact Mr. Jon Belcher with Draper Arden Associates, our engineering consultant, at (615)259-3996.

Sincerely,

A handwritten signature in cursive script that reads "Jack C. Marcellis".

Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates

City of Chattanooga

October 31, 1994

Mr. Ray Evans, Chairman
Pikeville Planning Commission
City Hall, P. O. Box 225
Pikeville, TN 37367

RE: SOUTHEAST TENNESSEE SOLID WASTE PLAN

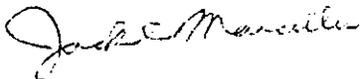
Dear Mr. Evans:

This letter is to notify you that a copy of the Southeast Tennessee Solid Waste Plan is available for your review at the Southeast Tennessee Development District Office. This office is located at 25 Cherokee Boulevard in Chattanooga. The Solid Waste Management Act of 1991 requires counties in Tennessee to develop a ten-year plan for the management of solid waste. This plan was prepared by the Southeast Tennessee Solid Waste Planning Board established by Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea and Sequatchie Counties. The individual county plans have been approved by each of the 10 County Commissions and the Chattanooga City Council.

The Tennessee Regional (TCA 13-3-101 et seq) and Municipal (TCA 13-4-101 et seq) planning statutes emphasize that planning documents which may affect the future of an area be available to relevant local planning commissions for review. The law does not require planning commissions to approve solid waste plans nor does it require planning commissions to comment on the plans.

If you have any questions, please contact Mr. Jon Belcher with Draper Arden Associates, our engineering consultant, at (615)259-3996.

Sincerely,



Jack C. Marcellis, Chairman
Southeast Tennessee Solid Waste Planning Board

/mjm

cc: Joe Guthrie, S.E., Dev. District
Jon Belcher, Draper Arden Associates

APPENDIX F

MISCELLANEOUS - PLANNING BOARD MEETING MINUTES

ORGANIZATIONAL MEETING
OF THE
SOUTHEAST TENNESSEE MUNICIPAL SOLID WASTE PLANNING BOARD

25 Cherokee Boulevard
Chattanooga, Tennessee
May 25, 1993
11:00 a.m. (EDT)

The organizational meeting of the Southeast Tennessee Municipal Solid Waste Planning Board met on May 25, 1993 at Southeast Tennessee Development District offices. The meeting was called to order by Joe Guthrie.

Members present were William Reed, Riley Anderson, Ken Castleberry, Ron Banks, Howell Moss, Garland Lankford, Robert Aikman, Bill Harmon, Jack Marcellis, Jerry Robinson, and Rick Sonnenburg. Members absent were Marvin Bollinger, Barry Massengill, Craig Bivens, and Donna Hubbard.

Other Development District board members present were Larry Simcox, Ed Frazier, Mike Partin, and Senator Ray Albright.

Development District staff present were Joe Guthrie, Hale Booth, Gary Sexton, Susan Goldblatt, and Luke Stapel.

Joe Guthrie discussed the region/county breakdown and the need for the counties and cities to work together while respecting the individual needs of local communities. Joe also went over the status of the current board. Since State law mandated that this Board be on-going concern, there is a need for staggered terms for the Board members. By a random drawing, staggered terms were set as follows:

<u>Appointee</u>	<u>Term (Years)</u>	<u>Appointed by:</u>
1. William Reed	2	Bledsoe Co. Executive
2. Donna Hubbard	4	Bradley Co. Executive
3. Riley Anderson	6	Grundy Co. Executive
4. Ken Castleberry	6	Hamilton Co. Executive
5. Ron Banks	4	McMinn Co. Executive
6. Howell Moss	2	Marion Co. Executive
7. Garland Lankford	2	Meigs Co. Executive
8. Barry L. Massengill	6	Polk Co. Executive
9. Robert Aikman	4	Rhea Co. Executive
10. Bill Harmon	4	Sequatchie Co. Executive
11. Marvin Bollinger	4	Region Municipalities
12. Jack Marcellis	2	Mayor of Chattanooga
13. Craig Bivens	6	Mayor of Cleveland
14. Jerry Robinson	2	Region Municipalities
15. Rick Sonnenburg	6	Region Municipalities

Jack Marcellis was nominated for Chairman by Ron Banks. Bob Aikman and Howell Moss seconded; and the Board unanimously elected Jack Marcellis as Chairman. Bob Aikman nominated Howell Moss and Ron Banks for Vice Chairmen and Garland Lankford seconded the nominations. The selection of Howell Moss and Ron Banks was unanimously approved.

Joe Guthrie announced that the list of consulting engineering firms has been narrowed to five by the Selection Committee. The consultant short list in alphabetical order consisted of:

1. Draper Aden Associates
2. Eldrod-Dunson, Inc./Jordan, Jones, & Goulding/I.C. Thomasson Associates
3. Neel Schaffer, Inc./Consolidated Technologies, Inc.
4. SCS Engineers/Consolidated Technologies, Inc.
5. Tribble & Richardson, Inc.

Hale Booth recorded the Selection Committee priorities for the top two consulting firms. These were as follows:

<u>Aikman</u>	<u>Anderson</u>	<u>Banks</u>	<u>Castleberry</u>
Draper Aden	Neel Schaffer	Draper Aden	Neel Schaffer
Elrod-Dunson	Draper Aden	Elrod-Dunson	SCS

<u>Marcellis</u>	<u>Moss</u>	<u>Powell</u>	<u>Robinson</u>
Neel Schaffer	Neel Schaffer	Draper Aden	Draper Aden
Draper Aden	Draper Aden	Neel Schaffer	Neel Schaffer

Sonnenburg
Draper Aden
SCS

Totals: Draper Aden: 5 First choice, 3 second choice
SCS: 0 First choice, 2 second choice
Neel Schaffer: 4 First choice, 2 second choice
Elrod-Dunson: 0 First choice, 2 second choice

Joe Guthrie asked if we needed to have another meeting with the top two consultants. Bill Harmon recommended that the Board proceed immediately with the selection. After discussion, a role call vote of the Board was held for each member's top selection. Draper Aden received a majority of the votes. Bill Harmon moved they be accepted by acclamation. Howell Moss seconded this motion. The motion passed unanimously.

In other business the Board agreed to the next meeting date of the fourth Tuesday in June, and the fourth Tuesday of each following month.

District staff then reviewed organizational issues with the Board. It was pointed out that:

1. Each county needs a certified resolution that the State can accept.
2. All ten counties need to fill out the one page grant application for \$20,000, which will be done by staff.

There being no further business, the meeting was adjourned.

SOUTHEAST TENNESSEE
SOLID WASTE PLANNING BOARD

June 7, 1993

AGENDA

- Invocation
- Solid Waste Plan Presentation
- Questions, Answers, and Discussion
- Next Action on Solid Waste Plan
- Individual County Reports: Status
- Other Business
- Next Meeting
- Adjourn

AGENDA

SOUTHEAST TENNESSEE
SOLID WASTE PLANNING REGION BOARD

JUNE 29, 1993

- I. INVOCATION
- II. ROLL CALL OF MEMBERS
- III. APPROVAL OF MINUTES
- IV. CONTRACT STATUS REPORT
- V. COMPANION BOILER REPORT
- VI. LOCAL ADVISORY COMMITTEES
- VII. CONSULTANT REPORT
- VIII. OTHER

SECOND MEETING
OF THE
SOUTHEAST TENNESSEE SOLID WASTE REGIONAL PLANNING BOARD

25 Cherokee Boulevard
Chattanooga, Tennessee
JUNE 29, 1993
11:00 a.m. (EDT)

The second meeting of the Southeast Tennessee Municipal Solid Waste Planning Board was held on June 29, 1993 at the Southeast Tennessee Development District offices. The meeting was called to order by Chairman Jack Marcellis. Other members present were Howell Moss, Bob Aikman, Ken Castleberry, Craig Bivens, Jerry Robinson, Ron Banks, and Rick Sonnenburg. Draper Aden staff present were Gary Lide, Jeff Crate, Larry Hayes and Glen Swinehart. Development District staff present were Joe Guthrie, Hale Booth, Gary Sexton, and Luke Stapel.

Minutes were approved as read.

Joe Guthrie discussed the contract with Draper Aden Associates. Negotiations had been completed and a contract reflecting desired components has been developed. Additional work (outside of the scope of the contract) where needed locally will be done on a fee basis, charging that locality. The scope of the project will include the total planning required to obtain a good product.

In addressing the suggestion of placing an arbitration clause in the contract, Glen Swinehart thanked the Board for selecting Draper Aden and explained that they plan to work with the Board in all ways to avoid any need for arbitration. Joe Guthrie followed by saying that if any major insurmountable problem occurred we could release them from the contract.

Draper Aden asked that the Board recommend a project contact person that they should work through. Jack Marcellis and Joe Guthrie were identified as the contacts for policy issues for the Board and staff. Gary Sexton of the Development District was identified as project coordinator.

Also brought up was the timeliness aspect: Getting the plan complete by the July 1994 deadline with sufficient time for local governments to review and comment on the plan. There was some discussion regarding funds that may be allocated for travel, allowing Board members to get a first hand look at nearby waste management facilities. This would help in better defining available alternatives developed during the planning process.

Joe Guthrie also stated that a study of the TVA companion boiler project may be funded by TVA and could be administered through the Development District. In conjunction with TVA personnel, Glen Swinehart would act as the team leader in preparing this study.

Joe Guthrie recommended approval of the contract between the Board and Draper Aden. Jerry Robinson made the motion to approve the contract. Bob Aikman seconded the motion. Joe Guthrie stated that the Development District will handle cash-flow requirements pending the acquisition of State planning funds. The motion passed unanimously.

Bob Aikman made a motion to give the Board Chairman authority to act on behalf of the Board to sign the contract and request grant funds. Howell Moss seconded the motion. The motion passed unanimously.

Bob Aikman made a motion to appoint Gary Sexton as the staff person to coordinate District efforts with Draper Aden; and Jack Marcellis and Joe Guthrie as the people to contact regarding policy issues. Ken Castleberry seconded the motion. The motion passed unanimously.

It was pointed out that TVA has worked with Draper Aden on a previous project and Glen Swinehart should be complimented by the Board for including the Watts Bar Steam Plant as a waste-to-energy alternative along with the Kingston Steam Plant concept.

Joe Guthrie explained that the TVA companion boiler study would be coordinated with the East Tennessee Development District. The Board of that organization has previously acknowledged the need for such a study. Ron Banks made a motion to authorize the chairman to enter into a contract involving the companion boiler. Bob Aikman seconded the motion. The motion passed unanimously.

There was a discussion regarding the formation of county advisory committees to provide public input into the planning process. The current status of these committees was reviewed by District staff.

As a part of the review it was decided that with regard to Hamilton County, Jack Marcellis should be added to the county advisory committee.

The Rhea County landfill committee will be the basis for that county, and the County Executive plans to add representatives from Graysville, Dayton and Spring City.

Ron Banks indicated that McMinn County's Landfill Committee could act in an advisory capacity to the consultants.

Joe Guthrie commented that it would be good to involve city managers.

In Marion County, a new committee was formed for solid waste and includes the alderman of four cities and five other committee members. Howell Moss will be an ex officio member.

District staff and/or Draper Aden will attempt to facilitate the organization of Advisory Committees in the remaining 6 counties served by the Board.

An overview was provided by Draper Aden regarding the scope of work, including the TVA companion boiler study. A letter should be sent to TVA to initiate contract discussions concerning that study.

Immediate work for Draper Aden includes:

- Waste stream characterization
- Contacting individual landfill operators
- Setup "kick-off" meetings
- Develop agenda and procedures involving publicity
- Schedule all tasks
- Review the agenda of the central Tennessee region for use as an example

The kick-off meetings should last one to one and a half hours and cover

- Introductory remarks from each locality
- Overview of Regulations and applicable Acts by Development District staff
- Familiarization with the regional scope
- Content of the proposed plan
- Waste technology
- 10 year Schedule

The meeting will be publicized with normal news notices in all applicable local papers. Comment sheets will be available all meetings to assure that all questions are answered. Board members suggested that it would be best if the timing of the kick-off meetings were on or around the same time as next months Planning Board meeting or sooner.

The siting of the kick-off meetings will be as follows:

Marion County for the west four counties
Bradley County for Polk and McMinn
Hamilton County for Chattanooga

Joe Guthrie will work with Rhea County since they have immediate issues to resolve prior to the end of the planning process, such as the imminent loss of landfill disposal capacity.

The City Managers reported that a resolution is in place for Frank Welch to take Marvin Bolinger's place on the Board.

Joe Guthrie requested, as the planning process formally begins with Draper Aden, the consultants should lead Board meetings in the future.

Bob Aikman made a motion to adjourn. The meeting was adjourned at 12:00 noon.

AGENDA

Southeast Tennessee Solid Waste Planning Region Board 7/27/93

- I. Invocation**
- II. Roll Call of Members**
- III. Approval of Minutes**
- IV. Local Advisory Committees**
- V. Contract Status Report**
 - Regional Solid Waste Plan (Planning Board & Consultant)**
 - Companion Boiler Project (District, TVA & Consultant)**
- VI. Consultant Progress Report**
 - Initial Public Meetings (Kick-Off)**
 - Bradley County 7/12/93**
 - Hamilton County 7/13/93**
 - Marion County 7/13/93**
 - Meeting with Rhea County 7/13/93**
 - Preliminary Inventory/Field Survey Report**
 - Planned August Activities**
 - Schedule**
- VII. Other Business**

THIRD MEETING
OF THE
SOUTHEAST TENNESSEE MUNICIPAL SOLID WASTE PLANNING BOARD

25 Cherokee Boulevard
Chattanooga, Tennessee 37405
July 27, 1993
10:30 a.m. (EDT)

The third meeting of the Southeast Tennessee Municipal Solid Waste Planning Board was held on July 27, 1993 at the Southeast Tennessee Development District offices.

The meeting was called to order by Joe Guthrie of the Development District. Chairman Jack Marcellis joined the meeting in progress.

ORDER OF BUSINESS I. Invocation

The invocation was delivered by Riley Anderson

II. Roll Call of Members

Joe Guthrie read the roll. Board members in attendance were:

Chairman - Jack Marcellis, Rick Sonnenburg, Bob Aikman, Riley Anderson, William Reed, Craig Bivens, Donna Hubbard Ken Castleberry, and Bill Harmon. Draper Aden staff present were: Gary Lide, Glen Swinehart, and Larry Hayes. Development District staff present were: Joe Guthrie, Hale Booth, Joe Cate, Gary Sexton, and Doug Hancock. Other interested individuals included: Tom Brown of Waste Management Inc., Ron Key of Consolidated Technologies Inc., and Drexel Heidel of the City of Chattanooga.

III. Approval of Minutes

A motion was made to approve the minutes by Bill Harmon and seconded by Bob Aikman. The minutes from the June 29th meeting were approved.

IV. Local Advisory Committees

The Advisory Committees were listed for nine counties of the district by Joe Guthrie. Only Hamilton County has not finalized its Advisory Committee as of July 27th. Joe Guthrie informed all present that Advisory Member changes or additions should be noted and proper changes should be made to the role sheets with the district.

Tom Brown of Waste Management Inc. was welcomed. Joe Guthrie stressed the importance of including the public and industry in the activities and meetings of the Planning Board. Sam Powell was mentioned for his role in the Consultant Selection Committee. No additions were made at the immediate time to the Advisory Committees.

Glen Swinehart of Draper Aden requested a list of all Advisory Committee members to aid in their work program and to coordinate

efforts. The revised lists of Advisory Committee members for all counties is attached.

V. Contract Status Report

Joe Guthrie turned the floor to Glen Swinehart to review the Contract Status of "this activity". The first contract involves the Planning Boards contract to develop a Regional Municipal Solid Waste Plan. The second is a supplemental agreement with the District which involves the TVA Companion Boiler Project.

The Planning Board Contract with Draper Aden was signed the middle of June 1993. Glen Swinehart informed all that Joe Guthrie of the District has sent Chairman Crowell of TVA and other organizational Presidents a letter in regard to the TVA Companion Boiler Project. The letter was authored by Joe Guthrie and Fred Weinhold of TVA and sent out on July 20, 1993. The letter requests \$75,000 from TVA for a supplemental companion boiler study and provides a scope of work relative to that study with respect to TVA, the District, and the work already done by Draper Aden. The District is awaiting a response from TVA as of July 27th.

Bill Harmon requested a copy of the letter to be sent to Jack Kitrell prior to their first meeting. Joe Guthrie stated that a copy would be given to Bill Harmon. Joe Guthrie said that Fred Weinhold would attempt to obtain funding from this fiscal year budget since his group has the money at hand. A copy of the letter was faxed to Fred Weinhold by Glen Swinehart in an attempt to speed the process.

VI. Consultant Progress Report

Glen Swinehart spoke about the Memorandum Progress Report put out by Draper Aden which will be made available to the Board. Glen Swinehart stated that he would give the progress report for the Companion Boiler Project from here on out, and that Jeff Crate would give the future progress reports to the Planning Board. Activities involving Draper Aden over the last 4 weeks were provided as follows:

- * Draper Aden is preparing a Base Map of the 10 County Planning Region. This base map will include barge terminals, rail lines, solid waste facilities, and the transportation network of the region.
- * Draper Aden met with Bob Aikman and Ronny Reese in Rhea County to discuss the development potential of a new landfill because they have an immediate solid waste disposal problem. The landfill discussed could be an ash disposal site if the Companion Boiler Project becomes a reality. Discussion notes of the meeting were made available by Draper Aden.
- * Draper Aden has initiated three kickoff meetings, The first was at the Bradley County Courthouse on July 12th, with 21 people in attendance. The second was at the Bicentennial Library in Chattanooga on July 13, with 21 people in attendance; and the third meeting was in the Town of Jasper on July 13, with 22 people in attendance. All meetings were

attended by well-informed individuals, which produced quality discussion periods.

- * A preliminary field work update was provided by Gary Lide of Draper Aden. This includes a written report on the following areas: The Marion County Landfill, City of South Pittsburg Recycling Center, Chattanooga Recycled Fiber, and Chattanooga Brush Disposal Facility. Work was cut short due to the contractor (Mr. Carrieri) falling behind due high temperatures in the area. By early August Draper Aden expects to be in full swing with many members doing research throughout the region.
- * Planned August activities were mentioned including the base map, baseline data compilation, market surveys and business surveys. Representative samples of businesses in the area will be utilized for the market surveys. Markets for solid waste by-products, composts, and recyclables have already been identified with respect to some in Europe, local composting activities, etc. Gary Lide stated that Draper Aden is working with Crackerbarrel Inc. in a composting pilot program.

A question was raised by Craig Bivens with respect to what types of composting activities would be explored by Draper Aden. Glen Swinehart stated that Draper Aden was looking into all types and combinations of composting activities, and was not limiting any alternatives at this time.

VII. Other Business

Jack Marcellis suggested the next meeting be held at 11:00 a.m. (EDT) as were previous meetings. Rick Sonnenburg asked when the next status report would be. Glen Swinehart said the status update would be provided at the August meeting.

Joe Guthrie stated that Mikey Harwood of Bledsoe County asked that his Local Advisory Committee receive the Minutes of these meetings. Jack Marcellis suggested that all Local Advisory Members get a copy of the minutes and encouraged all to invite members of the local advisory committees to attend these meetings.

Gary Sexton passed out the resolution to support Marion County in buying scales for their landfill. A motion was made to approve the resolution by Ken Castleberry and seconded by Bill Harmon. The resolution was unanimously approved and immediately signed by Jack Marcellis.

The next meeting is August 24th, 1993 at 11:00 a.m. at the offices of the Southeast Tennessee Development District.

A motion was made to adjourn by Bob Aikman and seconded by Bill Harmon. The meeting was adjourned at 11:25 a.m. (EST).

AGENDA

Southeast Tennessee Solid Waste Planning Region Board

8/24/93

- I. Invocation
- II. Roll Call of Members
- III. Approval of Minutes
- IV. Status, Local Advisory Committee
Contacts/Communication
- V. Contract Status Report-TVA Companion Boiler Project
- VI. Consultant Progress Report
 - A. Project Baseline Map
 - B. Summary of Task I: Kick-off Workshops & Meetings
Kick-off Workshop Regions @ Bradley County 7/12/93; Hamilton County
7/13/93; Marion County 7/13/93
Other Meetings: Rhea County 7/13/93; Waste Management 8/6/93
BFI 8/6/93; CTI Engineers 8/6/93
 - C. Progress Report on Task II (Chapter 1, 2 & 3 of Plan):
Region Base Map (1993)
Review Status "Baseline Data Compilation" (Schedule Items 2a through h)
Chapters 1, 2 & 3 Reaggregation of "Needs Assessment" Data
(see Synopsis of "Needs Assessment" Data)
 - D. Status Update Report - Distribute 9/15/93
Task III Workshop Re: Status Update Report 9/28/93
- VII. Schedule: Planned September Activities
- VIII. Next Meeting
- IX. Other Business
- X. Adjourn

FOURTH MEETING
OF THE
SOUTHEAST TENNESSEE MUNICIPAL SOLID WASTE PLANNING BOARD

25 Cherokee Boulevard
Chattanooga, Tennessee 37405
August 24, 1993
10:00 a.m. (EDT)

The fourth meeting of the Southeast Tennessee Municipal Solid Waste Planning Board was held on August 24, 1993 at the Southeast Tennessee Development District offices.

The meeting was called to order by Chairman Jack Marcellis.

ORDER OF BUSINESS I. Invocation

The invocation was delivered by Bob Aikman

II. Roll Call of Members

Jack Marcellis read the roll.

Board members in attendance were: Chairman - Jack Marcellis, Ron Banks, Ken Castleberry, Robert Aikman, Howell Moss, Garland Lankford, Frank Welsh, Riley Anderson, Donna Hubbard, Jerry Robinson, and Bill Harmon.

Draper Aden staff present were: Jeff Crate, Glen Swinehart, and Larry Hayes.

Development District staff present were: Joe Guthrie, Hale Booth, Joe Cate, Gary Sexton, Doug Hancock and Luke Stapel.

Other interested individuals included: State Senator Ray Albright, Ron Key of Consolidated Technologies Inc., Drexel Heidel of the City of Chattanooga, Fred Weinhold of TVA, Wade Murphy of the Tennessee Division of Solid Waste Assistance, Doug Swayze of Etowah Utilities, Mayor Burke Garwood of Etowah, & Mayor Larry Simcox of Jasper.

III. Approval of Minutes

A motion was made to approve the minutes by Howell Moss and seconded by Bob Aikman. The minutes from the July 27th meeting were approved.

IV. Status, Local Advisory Committees

Joe Guthrie stated that the list of Advisory Committee members had been finalized. The lists have been given to the consultants (Draper Aden) to aid in their community contacts. Joe Guthrie stressed the importance of including the members of the advisory

committees and any other interested parties in the activities and meetings of the Solid Waste Planning Board.

V. Contract Status Report-TVA Companion Boiler Project

Jack Marcellis turned the floor over to Fred Weinhold of TVA to review the contract status of the Companion Boiler feasibility study.

Fred Weinhold informed the board that the TVA contract with the district had been signed by TVA and awaited signing by the Development District. Mr. Wienhold stated that \$75,000 had been funded through TVA to the District to pay for additional work in regard to a Companion Boiler Project to Draper Aden.

Joe Guthrie stated that Dalton Roberts would sign the contract the same day (August 24th). Joe Guthrie stressed that the Companion Boiler Project funds were separate from the work of this committee. Guthrie stated that it was important to keep the Companion Boiler alternative separate from the ongoing activities of the Solid Waste Planning Board until there is a more thorough understanding of the project and its potential as an option or alternative.

Jack Marcellis stated that the East Tennessee Development District, the State of Tennessee, and TVA were teaming up with the Southeast Development District for this project.

VI. Consultant Progress Report

Activities involving Draper Aden over the last 4 weeks were provided by Jeff Crate as follows:

A. Project Baseline Map

- * Two baseline maps have been prepared by Draper Aden for the Solid Waste Planning Region.
 1. 10 County Region of Southeast Tennessee
 2. 10 County Region of Southeast Tennessee plus three Georgia Counties (Catoosa, Dade, & Walker), and Roane County, Tennessee
- * These maps include barge terminals, rail lines, solid waste facilities, and transportation facilities of the region. Additions will be made to the maps throughout the planning process. Base Maps were handed out to all present and additional maps may be requested from Draper Aden.

B. Summary of Task I: Kickoff of Workshops & Meetings,

- * An updated schedule was passed out to all board members. The new schedule breaks down future work activities of

Draper Aden as outlined in the contract between Draper Aden and the Solid Waste Planning Board. The new schedule will simplify the work program by breaking the program down into tasks (Task I and Task II). The tasks, as identified, follow the contract as mandated by State guidelines and will be the basis for the first three chapters of the Solid Waste Plan.

C. Progress report on Task II (Chapters 1, 2, and 3).

- * Jeff Crate stated that Draper Aden is in the midst of Task II and will provide a summary report on their activities around September 15, 1993. The period from the 15th to the next board meeting (September 28th) will be a comment period to address any questions from the board in regards to Draper Aden's work program. The September 15th summary report will also contain a review of the "Baseline Data Compilation".

D. Needs Assessment

- * Jeff Crate passed out a Needs Assessment graphic which summarized the solid waste needs of the region. The graphic is a detailed illustration of the information provided in the Needs Assessment including life expectancy of landfills, waste-stream compositions, etc. This document was prepared in accordance with State guidelines to reaggregate the baseline data with new data to revise the information for the Plan.

E. Status Update Report

- * Draper Aden will supply notebooks to board members compiling the work program, baseline data, time table, and graphics for easy reference by the September 28th meeting.
- * One of Draper Aden's next objectives will be to go to the various landfills and obtain scale data and other information to help verify the current waste stream composition data and to determine where the waste is coming from.
- * Jeff Crate also reviewed the introductory meetings and some of the contacts made at those meetings. Crate stated that Draper Aden met with Waste Management Inc., and BFI Inc., both of which were very involved in recycling efforts as well as looking for markets for recycleables.
- * Consolidated Technologies Inc. was also contacted and a dialogue was began with them about their role in landfill

management and transportation services. Crate stated all three companies were willing to provide much information, and that all three would continue to be involved throughout the planning period.

F. Summary Market Survey

- * (Item 2c-Work Program) Jeff Crate discussed the market surveys that are currently underway which are independent of the Companion Boiler project. The market surveys cover the following areas:
 - 1) Waste-to-Energy Markets
 - 2) Composting Markets
 - 3) Recycling Markets

- * The Waste-to-Energy analysis is the most complete to date. A handout was distributed which identified industries contacted by Draper Aden. These industries were all identified because of their potential ability to utilize steam power or another form of energy source which could be produced with waste and reduce energy costs for the region. Jeff Crate stated that this list was not exclusive and any additions or suggestions should be directed to Draper Aden so that initial contact can be made.

- * Draper Aden made contact with various industries in the region that have the potential to utilize a waste-to-energy source, so far several industries have showed some interest. Dupont, Chattem, Dixie Yarns, Coors Electrics & Ceramics, and Komatsu-Dresser have all showed an interest in developing such markets and working together. Dixie Yarns and Dupont were the most interested in being the waste-to-energy market for any type of system that may be developed in the area. Dupont is currently looking at their own waste-to-energy boiler program and seems quite interested in being involved in this project. This waste-to-energy analysis is completely independent of the TVA Companion Boiler concept.

- * Recycling and Composting markets are also being analyzed by Draper Aden. Jeff Crate stated that Draper Aden staff are developing a survey list of restaurants in the region to include in the composting market survey. This survey will mainly involve some of the larger restaurant chains and grocery store chains in the region. Yard waste and waste generated by localities will also be included in the composting market analysis. A status sheet has not been compiled for composting markets or recycling markets as of yet.

G. Summary Industrial Survey/Landfill Analysis

- * Preliminary reviews of landfill analysis are currently underway by Draper Aden. This analysis will continue for several more weeks. Jeff Crate stated that scales data, landfill capacity, major industrial users, and haulers will be identified. Each landfill in the region will be visited and interviews will be conducted with landfill operators, industries, and the haulers. Since one of this projects main objectives is 25% reduction to Class 1 landfills, it is important to identify major users and haulers to determine some diversion methods for dealing with the waste.
- * (Item 2g-Work Program) A handout of 80 industries that have been targeted for interviews was distributed. These 80 industries have 50 or more employees and are the largest of the waste producers in the region. Telephone interviews have already been conducted and further analysis is in progress. The level of interest varies with industry, but overall industries seem to be interested in new markets for recycleables, and waste-to-energy sources. Draper Aden is looking for companion uses for difficult to utilize waste products.
- * Preliminary meetings have been set up with Railroad companies in the region to discuss alternatives and scenarios for a regional solid waste transportation network.

VII. Planned September Activities

Continue market surveys, restaurant surveys, and industrial surveys. Draper Aden staff will utilize telephone interviews, personal interviews and site surveys to gather information. preliminary meetings will begin with railroad officials, Waste Management, BFI, Consolidated Technologies, and various larger industries in the planning region. Markets will continue to be explored for solid waste. Landfill analysis will continue through September as well as reaggregation of baseline data. Draper Aden will also prepare Summary reports to all board members in mid September.

VIII. Next Meeting

Chairman Jack Marcellis will not attend the next meeting of the board. Ron Banks, Vice Chairman will also be unable to attend. Howell Moss, Vice Chairman will lead the next meeting of the Board.

IX. OTHER BUSINESS-Resolution

Gary Sexton introduced a resolution for planning grants in the amount of \$20,000 for each county in the Solid Waste Planning

Region. The resolution was to appoint the Southeast Tennessee Development District as the fiscal agent for the Southeast Tennessee Municipal Solid Waste Planning Region, to disburse planning grant funds.

A motion was made to pass the resolution by Riley Anderson and seconded by Bob Aikman. the resolution was unanimously approved and immediately signed by Chairman Jack Marcellis.

A question was raised by Mayor Larry Simcox of Jasper in regard to scales for the Marion County Landfill. Simcox stated that they had been denied funds to buy scales. Gary Sexton stated that the date for grant monies to purchase scales had passed.

Jeff Crate Suggested starting the next meeting at 10:00 a. m. due to the heavy workload and amount of information to be presented to the board.

A motion was made to adjourn by Howell Moss and seconded by Ken Castleberry. The meeting was adjourned at 10:55 a.m. (EST).

*Demographics
Customer*

*John H. Hays
Bill Hornum
SE DEV District*

Agenda

Southeast Tennessee Solid Waste Planning Region Board

9/28/93

- I. Invocation
- II. Roll Call of Members
- III. Approval of Minutes
- IV. Status, Local Advisory Committee Contacts/Communication
- V. Status Report - TVA Companion Boiler Project
Fred Weinhold, TVA
Glenn Swinehart, P.E., Draper Aden Associates
- VI. Consultant Progress Report
 - A. Status Report/Data Review Workshop - Task I & II including Chapters I through III per "State Guidelines"
Introductory Remarks: Glenn Swinehart, P.E.
Report Presentation: Jeffrey T. Crate, P.G., Principal
Gary L. Lide, P.E., Project Manager:
 - Industrial Landfills
 - Landfill Facilities
 - Existing Recycling Markets (within Region)
 - Private Haulers
 - Collection Systems (Municipal)
 - Collection Systems (Private Haulers)
 - Industrial Solid Waste SurveyJon B. Belcher, P.E. - Project Engineer:
 - Energy Market Survey (Waste-to-Energy Opportunities)
 - B. Schedule: Planned October/November Activities (*Oct 26, 1993 11:00 am*)
 - C. Next Status Update Report - Distribute 11/15/93, Workshop 11/23/93
- VII. Next Meeting
- VIII. Other Business
- IX. Adjourn

FIFTH MEETING
OF THE
SOUTHEAST TENNESSEE MUNICIPAL SOLID WASTE PLANNING BOARD

25 Cherokee Boulevard
Chattanooga, Tennessee 37405
September 28, 1993
10:00 a. m. (EDT)

The fifth meeting of the Southeast Tennessee Municipal Solid Waste Planning Board was held on September 28, 1993 at the Southeast Tennessee Development District offices.

The meeting was called to order by Vice Chairman Howell Moss.

ORDER OF BUSINESS I. Invocation

The invocation was delivered by Riley Anderson.

II. Roll Call of Members

Joe Guthrie read the roll.

Board Members present were: Vice Chairman Howell Moss, Craig Bivens, Eugene Wright, William Reed, Riley Anderson, and Robert Aikman.

Draper Aden staff present were: Jon Belcher, Bill Aden, Larry Hayes, Glenn Swinehart, Gary Lide, and Jeff Crate.

Development District Staff Present were: Joe Guthrie, Hale Booth, Joe Cate, Gary Sexton, and Doug Hancock.

Other interested individuals included: Fred Weinhold of TVA.

III. Approval of Minutes

A motion was made to approve the minutes by Bob Aikman and seconded by Craig Bivens. The minutes from the August 24th meeting were approved.

IV. Status Local Advisory Committee Contacts/Communication

Howell Moss asked for comments on the local advisory committees. Larry Hayes of Draper Aden informed the Board that Draper Aden was utilizing the Local Advisory Committee member list, as provided, to establish contacts. Letters had been sent to all members to familiarize them with Draper Aden's work plan. Mr. Hayes stated that visits with the counties were in progress and that advisory committee comments would be reflected in the planning process.

V. Status Report TVA Companion Boiler Project

Fred Weinhold of TVA stated that the contract situation has moved well and that the invoice for payment was being processed and the

Board should have that information within a few days. On the Technical side of the Companion Boiler Project, Mr. Weinhold stated that TVA has not had the "walkdown" of the plants as of yet due to the pending contract and the long-term outlook of the project.

TVA involvement in the Companion Boiler Project has some long-term good news and bad news. Mr. Weinhold stated that the new board members, specifically Cravin Crowell, have initiated new goals. One of the main goals of TVA is to establish TVA's environmental leadership. Cravin Crowell said TVA needs to take a key role in developing appropriate technologies and that this is TVA's core mission. It is appropriate and necessary for Utilities to take the leadership position with the development of environmental technologies and develop environmentally sound practices. Mr. Weinhold said that the Companion Boiler Project is compatible to this long-term goal of TVA.

The problem with the RDM Companion Boiler project is that there is not a home for the project at TVA internally. TVA has three main operating groups; the generating group, resource group, and customer group, none of which are in a position to take on the role of leading the Companion Boiler Project. Mr. Weinhold stated that none of the groups are in a position to "champion the cause" of the Companion Boiler Project because none of the groups have an overwhelming benefit from taking on the project, and all have costs involved with a project of this scale.

TVA, as an organization, may be in the best position to promote the Companion Boiler Project. If the Board can champion the cause than the project may have the best opportunity of becoming a reality. Mr. Weinhold stated that he would not be in charge of the new Waste-to-Energy Program to showcase the Companion Boiler because of the internal political struggle between groups will not allow for the project to become a success.

Mr. Weinhold encouraged all present that there is hope for the project provided the Board follows there strategic objectives, and that the Board itself is responsible for the Companion Boiler Project. He encouraged all present to inform the Board members, Mr. Crowell, and Mr. Hayes, about the importance of this project to their specific area. Two steps to save the project were outlined by Mr. Weinhold:

- Step 1. To get to the Board, especially Johnny Hayes because of his familiarity with the region, and inform him that you see it as important to your area and the region and to TVA's Goals and Objectives as outlined, Use the Companion Boiler to exemplify TVA goals.
- Step 2. Cravin Crowell is also bringing in a new Chief Operating Officer. This could provide an avenue to get the project off the ground because this project could be the focal point for that person.

Glenn Swinehart stated that the TVA board must be reached and ask for an audience to find support internally for the project.

Joe Guthrie stated that Dalton Roberts was sending a letter to the TVA board, prior to asking for an audience, in support of the Companion Boiler Project. Joe stated that Johnny Hayes would be asked to personally involve himself in the project. Bill Harmon is President of the Association of Tennessee Valley Counties. This organization may be the appropriate organization to be involved since it represents Counties in Alabama, Kentucky, and Georgia as well. Joe Guthrie also said the Southeast Industrial Development Association which represents the electric suppliers from around the region could begin correspondence with TVA.

Joe Guthrie proposed the development of a committee composed of a representative from the valley, central part of region, and one from the Hiwasee Portion of the region. Bob Aikman, Donna Hubbard, and Howell Moss were nominated as representatives for this new Companion Boiler advocacy committee in order to approach Johnny Hayes on the matter. A motion was made by William Reed to approve the recommended committee and was seconded by Riley Anderson. The new committee was unanimously approved.

Joe Guthrie also stated that Senator Sasser and Marilyn Lloyd need to be informed of the importance of this project to the Southeast Tennessee region and that the East Tennessee Development District should be involved in the project.

Glenn Swinehart suggested including the Alabama-Northwest Council of Local Governments in the project since they are in the process of implementing a companion boiler project.

VI. Consultant Progress Report

A. Status Report/Data Review

- * Glenn Swinehart discussed the fact that Chapters 1, 2, and 3 of the Needs assessment were specified by the State and that Draper Aden was finishing work on Task III. Draper Aden has now completed the development of the Data base which will guide the planning process for solid waste planning over the 10 year planning time frame. The state guidelines specify that baseline data be updated and modified as necessary.
- * Summary Reports, provided by Draper Aden, for the Board members were distributed.
- * Jeff Crate provided commentary on the contents of the Summary Report. Due to the fact that the Board members did not get these reports on the 15th as they were provided, this has eliminated the comment period by members. Mr. Crate encouraged all Board Members to make any reaggregation of data as soon as possible because

Draper Aden was moving ahead with the numbers that they have developed.

- * Jeff Crate defined unmanaged waste as any waste that is not going to the landfills. Craig Bivens asked if Recycling was considered an unmanaged waste. Mr. Crate stated that recycling is not unmanaged waste due to the fact that recycling efforts are monitored. Mr. Crate said that Draper Aden is looking at the facility capacities, along with waste patterns to develop waste projections for the region.
- * Gary Lide spoke about the industrial landfills, recycling markets, collection systems, and the industrial waste survey. Mr. Lide stated that Chattanooga has a very good recycling market for all recyclable products. Mr. Lide stated there were 15 Class 1 landfills and one hazardous waste facility. Landfill capacity, regulatory compliance, and use of liners was discussed for each. Mr. Lide stated that the Industrial survey was going well.
- * Jon Belcher discussed the energy market survey currently underway by Draper Aden. Mr. Belcher stated that several companies were currently involved in waste-to-energy programs. Additionally, Mr. Belcher said that communications have begun with several large industries in the region, including Dupont and Bowater. Several industries have expressed an interest in developing a market for waste-to-energy products such as steam.

B. Planned October Events

- * Jeff Crate Stated that Draper Aden was beginning to work with the numbers they have obtained and keeping with the work schedule. A workshop with the Planning Board members is scheduled for the 23rd of November.
- * Glenn Swinehart said that the October 26th meeting of the Board would be a verbal presentation of October/November activities.

VII. Next Meeting

The next meeting of the Southeast Tennessee Municipal Solid Waste Planning Board was set for October 26th, 1993 at 11:00 a.m. at the offices of the Southeast Tennessee Development District at 25 Cherokee Boulevard, Chattanooga, Tennessee.

VIII. Other Business

No other business was discussed.

IX. Adjourn

A motion was made to adjourn by Bill Aikman and seconded by Riley Anderson. The meeting was adjourned at 11:10 a. m. (EST).

AGENDA
Southeast Tennessee Solid Waste
Planning Region Board

10/26/93

- I. Invocation
- II. Approval of Minutes
- III. Local Advisory Committee Contacts/Communication
- IV. Progress Report - TVA Companion Boiler Project
Fred Weinhold/Glenn Swinehart
- V. Consultant Progress Report
Glenn Swinehart
 - A. Recap - Baseline data (Chapters I through III)
Waste Characterization (EPA defaults vs. other)
 - B. Chapter IV - Waste Reduction
Statutory Requirement - 25% reduction/diversion on a per capita basis
(by weight) by December 31, 1995.
Base Year - 1989 (UT Report)
Waste Reduction Target - 1995
Initial Credits
Options for Waste Reduction/Diversion
 - C. Chapter V - Waste Collection & Transportation
Statutory Requirements - House to house pick-up or adequate
convenience centers. One (1) convenience center is required per
12,000 population or per 180 sq. miles as a minimum.
Transportation - routes to regional disposal facilities.
 - D. Chapter VI - Recycling
Statutory Requirements - Each region shall provide a recycling plan
including current recycling efforts and planned efforts to enhance
recycling.
Effective 1/1/96 each county shall provide a minimum of one
(1) site for collection of recyclables.
Provide an annual report for each collection site.
Goals & Objectives
Location(s) of collection sites
Regional Center(s) - Location and Description
Description of the Regions Recycling Program

- E. Chapter VII - Composting, Processing and Waste-to-Energy
 - Statutory Requirement - none
 - Markets - Compost/Energy
 - Quantitative Requirements
 - Description of Facilities & Location(s)
- F. Chapter VIII-Disposal Capacity
 - Statutory Requirement - Each region shall include planned capacity assurance including descriptions of planned facilities.
 - Waste Generation vs Disposal Capacity
 - Additional Disposal Capacity Required
 - Planned New or Expanded Facilities
- G. Schedule Review - Next Status Update Report (Chapters V & VI)
Distribute 11/15/93, Meeting Workshop 11/23/93

VI. Next Meeting

VII. Other Business

VIII. Adjourn

SIXTH MEETING
OF THE
SOUTHEAST TENNESSEE MUNICIPAL SOLID WASTE PLANNING BOARD

25 Cherokee Boulevard
Chattanooga, Tennessee 37405
October 26, 1993
11:00 a. m. (EDT)

The sixth meeting of the Southeast Tennessee Municipal Solid Waste Planning Board was held on October 26, 1993 at the Southeast Tennessee Development District offices.

The meeting was called to order by Vice Chairman Ron Banks.

ORDER OF BUSINESS I. Invocation

The invocation was delivered by Joe Guthrie.

Roll Call of Members: Ron Banks read the roll.

Board Members present were: Vice Chairman Ron Banks, Ken Castleberry, Jerry Robinson, Rick Sonnenburg, William Reed, Bill Harmon, Robert Aikman and Michael Patrick of the City of Chattanooga attended representing Jack Marcellis.

Draper Aden staff present were: Larry Hayes, and Glen Swinehart.

Development District Staff Present were: Joe Guthrie, Hale Booth, Joe Cate, and Doug Hancock.

Other interested individuals included: Fred Weinhold of TVA.

II. Approval of Minutes

A motion was made to approve the minutes by Jerry Robinson and seconded by Robert Aikman. The minutes from the September 28th meeting were unanimously approved.

III. Status Local Advisory Committee Contacts/Communication

Ron Banks called for a report on the local advisory committees. Larry Hayes of Draper Aden informed the Board that Draper Aden was still utilizing the Local Advisory Committee member list, as provided, to establish contacts. A sample letter to advisory committee members was supplied as exhibit 1. To date, 70 members have been contacted. Mr. Hayes stated that these people will be brought in to the planning process as the project moves along.

IV. Status Report TVA Companion Boiler Project

Fred Weinhold of TVA stated that TVA has scheduled the "walkthrough" of the Watts Bar and Kingston plants. Arrangements have been made with an engineering contractor, that is familiar with the Watts Bar facility, to assist and make recommendations as

to the likely changes that would be necessary for conversion into the companion boiler project. Mr. Weinhold also stated that other potential customers have been contacted in the region with an interest in a waste-to-energy source of power. Contacts have been established in Northeast Alabama with respect to barging waste to the Watts Bar facility due to problems they are currently facing with the siting of a new landfill. Another potential customer in the area, which is also having trouble siting landfill space, has been contacted.

Mr. Weinhold also stated that TVA has put a 90 day hold on surplusing many TVA officials involved in the current Companion Boiler Project. Some time is available here to still get this project off the ground. Mr. Weinhold stated that Board Member Johnny Hayes has begun to champion the Tire Derived Fuel Project within TVA and has found support. Mr. Weinhold encouraged all to continue to seek out Mr. Hayes as a supporter of the Companion Boiler Project. Larry Hayes asked when the 90 day extension would end. Mr. Weinhold stated that he anticipated that the surplusing of TVA officials is expected to begin again in January, 1994.

Mr. Weinhold informed the Board that he had recently delivered a speech about the Companion Boiler Project to a small audience. An Environmental Activist by the name of Denny Haldemann raised lots of questions and controversy over the environmental safety of this type of waste-to-energy project. Mr. Weinhold offered a word of caution, warning the Board and Consultants that this project is sure to gain attention and can easily become a highly debated environmental issue. Mr. Weinhold suggested that controversy should try to be avoided as the work program progresses and that the best possible defense is to do the best, most well informed work as possible and to include citizen participation early in the planning process.

Joe Guthrie added that the purpose of the Companion Boiler Project is not just to burn the waste, but to provide is an ultimate use other than to bury the waste. The opportunity exists for a waste-to-energy source which can provide an alternative power source while allowing the region to achieve the mandated 25% reduction goal. The long-term benefit, which should be noted, is that the Companion Boiler Project may allow for a 40, 50, or 60% reduction in waste to landfills in the future through re-cycling prior to conversion to energy. This would far exceed the reduction mandated by the Environmental Protection Agency and the State.

Larry Hayes of Draper Aden added that incineration has a bad name in that it is misunderstood today. Previously, incineration was the burning of all types of waste, which was not monitored. Mr. Hayes stated that high technology has greatly improved the mechanisms available to control burning of waste materials. Moreover, the Clean Air Act strictly monitors emissions into the atmosphere which will require stringent guidelines be followed and

high technology be utilized in purifying the discharges into the air. These type of regulations, Mr. Hayes pointed out, do not exist universally for landfills, particularly older ones still in operation.

Joe Guthrie suggested that if the RDF Companion Boiler is shown to be cost-effective that the Board should do what it can to see that the project gets off the ground. Mr. Hayes cautioned that Draper Aden has yet to make any recommendations, and alternatives such as a regional landfill facility are still being considered. Joe Guthrie pointed out that contacts with the TVA board are ongoing in an effort to draw support internally for the project.

Glen Swinehart of Draper Aden stated that a similar project in Alabama is moving ahead. A steering committee to begin the implementation of a waste-to-energy facility in Alabama has been initiated. Larry Hayes asked why TVA would consider abandoning this project with so much effort and investment already involved. In closing, Mr. Weinhold stated that all parties present should "keep the faith."

V. Consultant Progress Report

A. Recap Baseline Data

- * Glen Swinehart discussed the fact that Chapters 1, 2, and 3 of the Needs Assessment data, which were specified by the State, had been presented to the Solid Waste Board on September 28, 1993.
- * Chapters 4-8 will be distributed on November, 15, 1993, which will be discussed at the planned November 23rd meeting of the Board. Chapter 4-8 will reflect the recommendations with respect to solid waste management in the region as defined by Draper Aden.
- * Exhibit 2 was handed out which illustrated the Waste composition in the region as opposed to EPA national Averages. Draper Aden found that the Chattanooga region greatly reflected the national averages except in wood waste. Glen Swinehart stated that even though their numbers were slightly different than the National Averages, Draper Aden intends to use the regional numbers in their analysis.

B. Waste Reduction (Chapter 4 of Plan)

- * The 25% waste reduction for the region by 1995 was detailed by Draper Aden (Exhibit 3). Draper Aden stated that several counties would be required by law to implement and construct convenience center facilities for waste disposal.

C. Waste Collection (Chapter 5 of Plan)

* Statutory requirements state that house-to-house pick-up or convenience center pick-up will be the only two acceptable choices for collection. Green Boxes will be disallowed. Convenience centers, by law, will be required at the rate of 1 per 12,000 population or per 180 square miles at a minimum. The cost of these facilities will be the burden of the counties and municipalities.

* Ron Banks asked Draper Aden to show what criteria was used in determining why 24 convenience centers would have to be constructed by the year 1995 in the region. Mr. Banks instructed Draper Aden to illustrate how the number of facilities needed per County was determined. Mr. Banks stated that in order for the Board to approve any recommended actions by the consultants, a greater understanding of the cost involved per County and the criteria used to determine such costs should be spelled out in detail.

D. Recycling (Chapter 6 of Plan)

* Mr. Swinehart stated that statutory requirements will mandate that each region provide a recycling program. Effective as of 1/1/96 each County will be required to provide a minimum of 1 recycling center and to provide an annual report of those activities.

E & F. Composting (Chapter 7 of Plan), and Disposal Capacity (Chapter 8 of Plan).

* Mr. Swinehart differed comments on these subjects to the next meeting due to the lack of time remaining.

G. Schedule Review (of Chapters 4-8)

* Mr. Swinehart reported all that Draper Aden was keeping well with the work program and that the meeting workshop was scheduled for Tuesday, November 23, 1993 provided there are no conflicts. Additionally, Chapter 4-8 will be distributed on the 15th of November to the Solid Waste Board Members.

VI. Next Meeting

Mr. Guthrie suggested an alternative schedule of presentations and meetings by Draper Aden be implemented in order to avoid the confusion around the Thanksgiving, Christmas, and New Years holidays. A proposed schedule will be offered by the Development District.

VII./IX. Other Business/Adjourn

No other business was discussed. A motion was made to adjourn by Bob Aikman and seconded by Bill Harmon. The meeting was adjourned at 12:10 a. m. (EST).

SOUTHEAST TENNESSEE SW PLAN
PROGRESS REVIEW MEETING

1/25/94

AGENDA

- I. Invocation
- II. Approval of Minutes
- III. Financial Reports
- IV. Consultant's Report
Jeff Crate, Draper Aden Associates
 - Recap, Mid-Program Course Change
 - Review Revised Schedule
 - November/December Activities - Work Sessions With the Region's Counties and Interim (short term 30-60 days) Solid Waste Management Issues.
 - Review Waste Reduction Issues (Chapter IV State Guidelines)
 - Review Waste Collection Issues (Chapter V State Guidelines)
 - TVA Companion Boiler Study
- V. Future Events - Including Watt's Bar Site Visit, Waste to Energy Facility Site Visit, Development District Retreat, Solid Waste Seminar.
- VI. Other Business/Next Meeting
- VII. Adjourn

131.25

AGENDA
SOUTHEAST TENNESSEE SOLID WASTE
PLANNING REGION BOARD

5/24/94

- I. INVOCATION
- II. APPROVAL OF MINUTES
- III. FINANCIAL REPORT
- IV. TVA COMPANION BOILER PROJECT
- V. STATUS REPORT - SOLID WASTE MANAGEMENT PLAN
- VI. REPORT(S) REPRODUCTION, PRINTING & DISTRIBUTION
- VII. SITE VISIT - SOLID WASTE MANAGEMENT SYSTEM
- VIII. OTHER BUSINESS
- IX. ADJOURN

EIGHTH MEETING
OF THE
SOUTHEAST TENNESSEE MUNICIPAL SOLID WASTE PLANNING BOARD

25 Cherokee Boulevard
Chattanooga, Tennessee 37405
May 24, 1994
11:00 a. m. (EDT)

The eighth meeting of the Southeast Tennessee Municipal Solid Waste Planning Board was held on May 24, 1994 at the Southeast Tennessee Development District offices.

The meeting was called to order by Chairman Jack Marcellis.

ORDER OF BUSINESS I. Invocation

The invocation was delivered by Jack Marcellis.

Roll Call of Members:

Board Members present were: Chairman Jack Marcellis, William Reed, Riley Anderson, Mike Partin, Larry Simcox, Ken Castleberry, Rick Sonnenburg, Jerry Robinson, Craig Bivens, Howell Moss, Donna Hubbard, and Hoyt Firestone

Draper Aden staff present were: Jeff Crate, Larry Hayes, Glen Swinehart and Enoch Jarrell.

Development District Staff Present were: Joe Guthrie, Hale Booth, Joe Cate, Doug Hancock and Gary Sexton.

Other interested individuals included: Roosevelt Allen of TVA, Stan Harrison of the Local Planning Office, Richard A. Fisher representative of the 22nd District, Carmel Gibson the Mayor of Ducktown, and Eugene Wright of the City of Chattanooga.

II. Approval of Minutes

Changes were addressed from the previous minutes. Changes include questions asked on pp 4-5 (minutes from the seventh meeting -- January 25, 1994), were by Rick Sonnenburg and not Jerry Robinson. Larry Simcox moved to approve the minutes and was seconded by Howell Moss. The minutes from the January meeting were unanimously approved.

III. Financial Report

Joe Guthrie delivered the financial report to the Planning Board. Joe stated that there was \$180,000 contract with Draper Aden. There billings to date are \$167,761 or 90.7 percent complete. The Draper Aden Account has over \$76,000 left as some of Drapers bills have not yet been paid out but will be soon.

IV. TVA Companion Boiler Project

Joe Guthrie introduced Roosevelt Allen of TVA and asked him for some brief comments on the scope of the Companion Boiler Project. Roosevelt Allen stated that he was the replacement for Fred Weinhold with respect to the Companion Boiler Project. Mr. Allen stated that the RDF study for the Companion Boiler Project will proceed.

Glen Swinehart of Draper Aden stated that the RDF study was about 70% complete by Draper Aden and that some time had been lost while all parties were getting reacquainted with the new TVA officials.

TVA hopes to drive down operating costs for the companion Boiler Project by increasing the fuel load capacity and exploring other markets and recyclables. With that in mind an addendum to the Companion Boiler Study was presented at the Southeast Tennessee Development District Board meeting to increase the scope of the Companion Boiler study and the contract to include biomass fuels, and industrial wastes in the study. The addendum was approved by the SETDD Board.

V. Status Report of the Solid Waste Management Plan

Jeff Crate went through the handouts provided by Draper Aden. Mr. Crate stated that most localities had been met with or would be in the next day or two. Once all the plans are together it looks as though the regional plan will come together well. Current waste programs in place in the region should allow for the region to meet the state mandated diversion rates now without having to drastically change or alter the current solid waste operations. Thus, capitol intensive facilities most likely will not be necessary on the short term and that capital improvement costs can be held down and retrofitting will not be necessary. This plan is a relatively simple plan for the region.

The new diversion rate is 24.3% and not the previous 25%, these new numbers are based on variances and numbers supplied by UT. This is the new diversion goal (24.3%).

Jeff Crate discussed the curbside recycling as having a 1.2% diversion component and recycling drop-off centers make up .9% of the diversion. Sludge composting makes up 8.6%; yard waste composition .3%; and Class III & IV landfills handle 9.1% of diversion. Industrial and commercial source reduction may equal approximately 4%. These numbers were prepared on a county by county basis to show the diversion as broken down by place and component waste stream. With these numbers the region will be able to meet the mandated diversion rates. Some regions have exceeded their diversion goals while others have not.

Recommendations to the Board

Bledsoe/Sequatchie has been advised to combine with the Marion County landfill.

Combining landfill facilities looks like the recommended action of this planning report to create 4 or 5 Class I landfills or regional facilities. They are:

Bradley County	Continue with 10 year permit
Hamilton County	Combining operations at Summit Landfill
Marion County	To serve Marion, Grundy, Bledsoe and Sequatchie
McMinn County	In good shape

Class III/IV landfills are recommended to be in conjunction with the above listed facilities because of the cost advantages.

A Class III/IV debris facility may be an option in the eastern portion of Polk County.

Three composting systems are currently recommended in the plan. They are:

Marion County	Yard Waste
Hamilton County	Sludge Composting
Bradley County	Private Composting

Recycling will include door-to-door or curbside, drop-off centers, and convenience centers.

Two localities may go with a contract service to provide for collection in lieu of convenience centers for both McMinn and Hamilton Counties.

Rhea County is recommended to use the Summitt landfill facility.

VI. Schedule of Events

The final meeting for the presentation of the regional plan was suggested to be held on June 7th, 1994. The 7th was approved as the date for the distribution of the County Plans and the final presentation of the plan.

Public Meetings and comment periods will occur over the next few months. Individual meetings will be held with each county by Draper Aden. Once the resolutions have been approved they will be added to the plan and submitted to the state by October 1st.

The submittal date is July 1, then there is a 90 day grace period before the State Division of Solid Waste Assistance takes any

action. The plan must be submitted by October 15. Fines can be assessed in the next 90 days.

VII. Reproduction of Solid Waste Plan

Joe Guthrie stated that SETDD and Draper Aden had determined that printing costs are a legitimate expense. Draper Aden has acquired 4 printing quotes from \$2,000 and up to reproduce the plan.

A motion was made by Jerry Robinson to allow for \$2,000 to be spent on the printing of the planning report, and was seconded by Larry Simcox. The motion was unanimously passed.

VIII. Visit to Waste to Energy Facility

Palm Beach has the nearest solid waste system to have all the facilities necessary for a comprehensive system including a Waste-to-Energy option. A van could be taken to Atlanta and flights to Palm Beach can be arranged. Some funds are still available in the Planning Board's budget. The group does not necessarily have to go together.

IX. Adjourn

A motion was made to adjourn by Larry Simcox and seconded by Howell Moss. The meeting was adjourned at 12:05 p.m. (EST)

APPENDIX F

MISCELLANEOUS - RESOLUTIONS ADOPTING 10-YEAR PLAN

SOUTHEAST TENNESSEE SOLID WASTE PLANNING BOARD

SOUTHEAST TENNESSEE SOLID WASTE BOARD

**RESOLUTION TO ADOPT THE SOLID WASTE REGIONAL PLAN
FOR THE SOUTHEAST TENNESSEE SOLID WASTE PLANNING REGION**

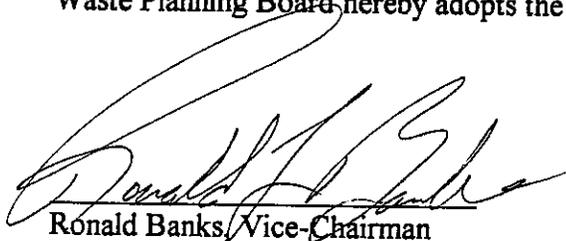
WHEREAS: pursuant to T.C.A. Section 68-211-801, et. seq., Bledsoe, Bradley, Grundy, Hamilton, McMinn, Marion, Meigs, Polk, Rhea, and Sequatchie Counties have established themselves by resolution as the Southeast Tennessee Solid Waste Planning Region; and

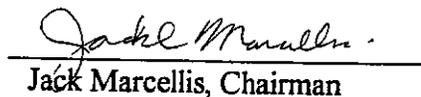
WHEREAS: the resolution creating the Southeast Tennessee Solid Waste Planning region also established a Board with the responsibility of developing, administering, and updating the Region's plan as per the requirements of T.C.A. 68-211-801 et. seq.; and

WHEREAS: pursuant to T.C.A. Section 68-211-801, et. seq., each region is required to submit a 10 year (1994 to 2003) solid waste plan to the State Planning Office (revised by legislation to the State Division of Solid Waste Assistance); and

WHEREAS: the Southeast Tennessee Solid Waste Planning Board has developed a ten (10) year solid waste plan following the guidelines for such plans as promulgated by the Tennessee State Planning Office and T.C.A. 68-211-801 et. seq.; and

NOW, THEREFORE, BE IT RESOLVED that the Southeast Tennessee Solid Waste Planning Board hereby adopts the Southeast Tennessee Solid Waste Region plan.

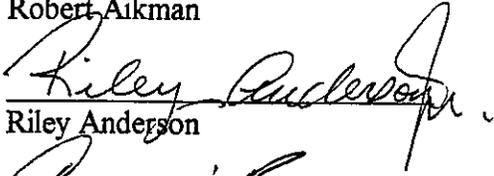

Ronald Banks, Vice-Chairman


Jack Marcellis, Chairman

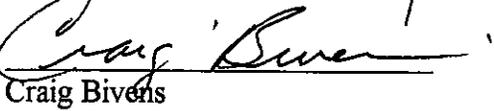
Howell Moss, Vice-Chairman

Board Member Approval

Robert Aikman



Riley Anderson

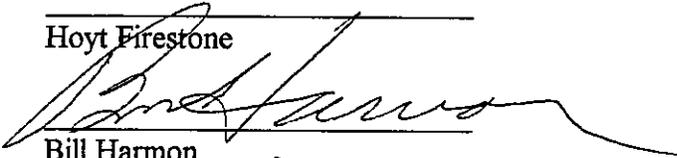


Craig Bivens

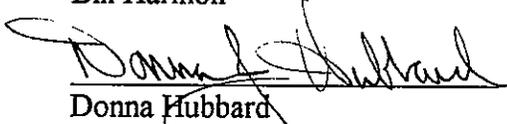


Ken Castleberry

Hoyt Firestone



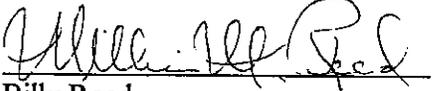
Bill Harmon



Donna Hubbard

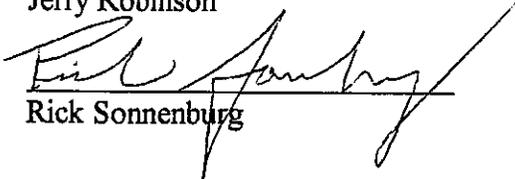


Garland Lankford



Billy Reed

Jerry Robinson



Rick Sonnenburg

Frank Welch

BLEDSON COUNTY

DATE: 10/17/94

RE: Resolution to

Adopt Solid Waste Regional Plan

UPON MOTION BY COMMISSIONER, H.C. Sapp WHICH MOTION WAS SECONDED

BY COMMISSIONER, Carlos Smith, TO:

approve resolution

THE VOTE WAS AS FOLLOWS:

GORDON SMITH yes

ROGER SIMMONS yes

BRENDA BURGESS yes

JUNIOR L. HANKINS yes

BOBBY COLLIER yes

BILLY RAY MERRIMAN yes

H.C. SAPP yes

CHARLES RAINS yes

CARLOS H. SMITH yes

MARTIN DEWEESE yes

TOM FARMER yes

CAROL SWAFFORD yes

RUSSELL SUMMERS yes

YES: 13

NO

PASS

STATE OF MISSISSIPPI
COUNTY OF ALBANY

I, Carolyn M. Terry, Clerk of the Board, do hereby certify that the above named persons and the number of yeas and nays are correct as the same appear on the minutes of the Board of Commissioners.

Given under my hand and the seal of the County of Albany, Mississippi, this 17 day of Nov. 1994.

Carolyn M. Terry
Albany County Clerk

RESOLUTION NO. _____

**RESOLUTION TO ADOPT THE SOLID WASTE REGIONAL PLAN
FOR THE SOUTHEAST TENNESSEE SOLID WASTE PLANNING REGION**

WHEREAS: pursuant to T.C.A. Section 68-211-801, et. seq., Bledsoe, Bradley, Grundy, Hamilton, McMinn, Marion, Meigs, Polk, Rhea, and Sequatchie Counties have established themselves by resolution as the Southeast Tennessee Solid Waste Planning Region; and

WHEREAS: the resolution creating the Southeast Tennessee Solid Waste Planning region also established a Board with the responsibility of developing, administering, and updating the Region's plan, as per the requirements of T.C.A. 68-211-801 et. seq.; and

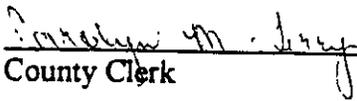
WHEREAS: pursuant to T.C.A. Section 68-211-801, et. seq., each region is required to submit a 10 year (1994 to 2003) solid waste plan to the State Planning Office (revised by legislation to the State Division of Solid Waste Assistance); and

WHEREAS: the Southeast Tennessee Solid Waste Planning Board has developed a ten (10) year solid waste plan following the guidelines for such plans as promulgated by the Tennessee State Planning Office and T.C.A. 68-211-801 et. seq.; and

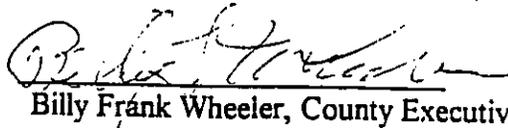
WHEREAS: the Solid Waste Regional Plan attached hereto and incorporated herein has been approved by the Southeast Tennessee Solid Waste Planning Board.

NOW, THEREFORE, BE IT RESOLVED that the Bledsoe County Board of Commissioners hereby ratifies the Southeast Tennessee Solid Waste Region plan and acknowledges Bledsoe County's participation and responsibilities under the plan.

Attest



County Clerk

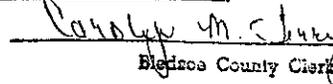


Billy Frank Wheeler, County Executive

STATE OF TENNESSEE
COUNTY OF BLEDSOE

I, Carolyn M. Shroy, Clerk in and for the above named state and county, do hereby certify that the above and correct copy as filed in my office.

Given and signed by me and in public view this 1
day of Nov. 1994



Bledsoe County Clerk

BRADLEY COUNTY

RESOLUTION TO ADOPT THE SOLID WASTE REGIONAL PLAN
FOR THE SOUTHEAST TENNESSEE SOLID WASTE PLANNING REGION

WHEREAS: pursuant to T.C.A. Section 68-211-801, et. seq., Bledsoe, Bradley, Grundy, Hamilton, McMinn, Marion, Meigs, Polk, Rhea, and Squatchie Counties have established themselves by resolution as the Southeast Tennessee Solid Waste Planning Region; and

WHEREAS: the resolution creating the Southeast Tennessee Solid Waste Planning region also established a Board with the responsibility of developing, administering, and updating the Region's plan as per the requirements of T.C.A. 68-211-801 et. seq.; and

WHEREAS: pursuant to T.C.A. Section 68-211-801, et. seq., each region is required to submit a 10 year (1994 to 2003) solid waste plan to the State Planning Office (revised by legislation to the State Division of Solid Waste Assistance); and

WHEREAS: the Southeast Tennessee Solid Waste Planning Board has developed a ten (10) year solid waste plan following the guidelines for such plans as promulgated by the Tennessee State Planning Office and T.C.A. 68-211-801 et. seq.; and

WHEREAS: the Solid Waste Regional Plan attached hereto and incorporated herein has been approved by the Southeast Tennessee Solid Waste Planning Board.

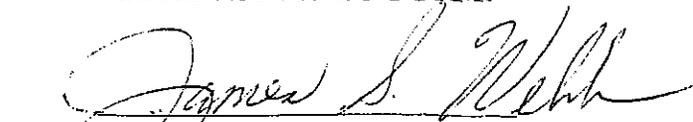
NOW, THEREFORE, BE IT RESOLVED that the Bradley County Board of Commissioners hereby ratifies the Southeast Tennessee Solid Waste Region plan and acknowledges Bradley County's participation and responsibilities under the plan.

Attest:


County Clerk


Donna Hubbard, County Executive

APPROVED AS TO FORM:


County Attorney

GRUNDY COUNTY

RESOLUTION NO. 94-08-22-B,

RESOLUTION TO ADOPT THE SOLID WASTE REGIONAL PLAN
FOR THE SOUTHEAST TENNESSEE SOLID WASTE PLANNING REGION

WHEREAS, pursuant to T.C.A. Section 68-211-801, et. seq., Bledsoe, Bradley, Grundy, Hamilton, McMinn, Marion, Meigs, Polk, Rhea, and Sequatchie Counties have established themselves by resolution as the Southeast Tennessee Solid Waste Planning Region, and

WHEREAS, the resolution creating the Southeast Tennessee Solid Waste Planning Region also established a Board with the responsibility of developing, administering, and updating the Region's plan as per the requirements of T.C.A. 68-211-801 et. seq., and

WHEREAS, pursuant to T.C.A. Section 68-211-801, et. seq., each region is required to submit a 10 year (1994 to 2003) solid waste plan to the State Planning Office (revised by legislation to the State Division of Solid Waste Assistance), and

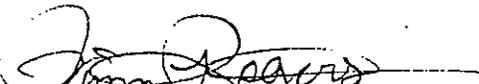
WHEREAS, the Southeast Tennessee Solid Waste Planning Board has developed a ten(10) year solid waste plan following the guidelines for such plans as promulgated by the Tennessee State Planning Office and T.C.A. 68-211-801 et. seq., and

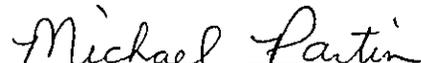
WHEREAS, the Solid Waste Regional Plan attached hereto and incorporated herein has been approved by the Southeast Tennessee Solid Waste Planning Board.

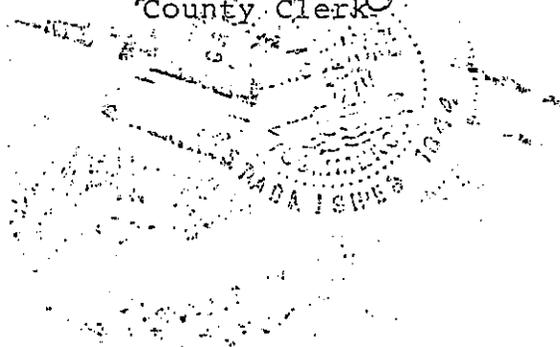
NOW, THEREFORE, BE IT RESOLVED that the Grundy County Board of Commissioners hereby ratifies the Southeast Tennessee Solid Waste Region plan and acknowledges Grundy County's participation and responsibilities under the plan.

Duly passed and approved this 22 day of August, 1994.

ATTEST:


Jimmy Rogers
County Clerk


Michael Partin
County Executive



HAMILTON COUNTY



Hamilton County Board of Commissioners RESOLUTION

No. 1094-32

A RESOLUTION TO ADOPT THE SOLID WASTE REGIONAL PLAN FOR THE SOUTHEAST TENNESSEE SOLID WASTE PLANNING REGION.

WHEREAS, pursuant to T.C.A. Section 68-211-801, et. seq., Bledsoe, Bradley, Grundy, Hamilton, McMinn, Marion, Meigs, Polk, Rhea, and Sequatchie Counties have established themselves by resolution as the Southeast Tennessee Solid Waste Planning Region ; and,

WHEREAS, the resolution creating the Southeast Tennessee Solid Waste Planning region also established a Board with the responsibility of developing, administering, and updating the Region's plan as per the requirements of T.C.A. 68-211-801 et. seq.; and,

WHEREAS, pursuant to T.C.A. Section 68-211-801, et. seq., each region is required to submit a 10 year (1994 to 2003) solid waste plan to the State Planning Office (revised by legislation to the State Division of Solid Waste Assistance); and,

WHEREAS, the Southeast Tennessee Solid Waste Planning Board has developed a ten (10) year solid waste plan following the guidelines for such plans as promulgated by the Tennessee State Planning Office and T.C.A. 68-211-801 et. seq.; and,

WHEREAS, the Solid Waste Regional Plan attached hereto and incorporated herein has been approved by the Southeast Tennessee Solid Waste Planning Board.

NOW, THEREFORE, BE IT RESOLVED BY THIS COUNTY LEGISLATIVE BODY IN SESSION ASSEMBLED:

That the Hamilton County board of Commissioners hereby ratifies the Southeast Tennessee Solid Waste Region plan and acknowledges Hamilton County's participation and responsibilities under the plan.

BE IT FURTHER RESOLVED THAT THIS RESOLUTION TAKE EFFECT FROM AND AFTER ITS PASSAGE, THE PUBLIC WELFARE REQUIRING IT.

Hamilton County, Chattanooga, Tenn.
A CERTIFIED TRUE COPY
This 15th day of Nov 1994
W. S. (BILL) KNOWLES, County Clerk
By D. Sterski, Deputy Clerk

Approved: CERTIFICATION OF ACTION
Rejected:
Approved:
Vetoed:
County Clerk
County Executive
October 19, 1994
Date

MARION COUNTY

RESOLUTION
MARION COUNTY BOARD OF COMMISSIONERS
AUGUST 29, 1994

WHEREAS, pursuant to T.C.A. Section 68-211-801, et seq., Bledsoe, Bradley, Grundy, Hamilton, McMinn, Marion, Meigs, Polk, Rhea, and Sequatchie Counties have established themselves by resolution as the Southeast Tennessee Solid Waste Planning Region; and

WHEREAS, the resolution creating the Southeast Tennessee Solid Waste Planning Region also established a Board with the responsibility of developing, administering, and updating the Region's plan as per the requirements of T.C.A. §68-211-801, et seq., each region is required to submit a ten (10) year (1994 to 2003) solid waste plan to the State Planning Office (revised by legislation to the State Division of Solid Waste Assistance); and

WHEREAS, the Southeast Tennessee Solid Waste Planning Board has developed a ten (10) year solid waste plan following the guidelines for such plans as promulgated by the Tennessee State Planning Office and T.C.A. §68-211-801, et seq.; and

WHEREAS, the Municipal Solid Waste Regional Plan under date of June 7, 1994, as amended, attached hereto and incorporated herein, has been approved by the Southeast Tennessee Solid Waste Planning Board; and

WHEREAS, at a regular meeting of the Marion County Board of Commissioners held on August 29, 1994, a motion was made by Commissioner Thompson and seconded by Commissioner Turner to adopt a resolution approving the Municipal Solid Waste Regional Plan, under date of June 7, 1994, as amended, for the Southeast Tennessee Solid Waste Planning Region and the Marion County, Tennessee Solid

Waste Management Report, which constitutes a portion of the Southeast Tennessee Regional Solid Waste Plan subject to certain amendments thereto as hereinafter set forth and which resolution was unanimously adopted.

BE IT, THEREFORE, RESOLVED that the Marion County Board of Commissioners does hereby approve, ratify, and adopt the Municipal Solid Waste Regional Plan, under date of June 7, 1994, as amended, for the Southeast Tennessee Solid Waste Planning Region subject to the following amendments being made in said Plan:

1. Chapter IX - 15 to reverse the figures for Marion and McMinn County for waste disposal and shared cost.

2. Chapter XI - 7; XI - 11; and XII - 12 to eliminate the TVA companion broiler program.

BE IT, FURTHER, RESOLVED that the Marion County Board of Commissioners does hereby approve, ratify, and adopt the Marion County, Tennessee Solid Waste Planning Report, 1994 - 2003 prepared as a portion of the Southeast Tennessee Regional Solid Waste Plan by Draper Aden Associates under date of June 14, 1994, as amended, subject to the following changes:

1. Chapter 1 - 1, Section 1.1, in the first sentence to delete the words "owns and". In the third sentence to delete the words "Marion County Commission" and substitute "Board". To delete the word "Accountant" as a member of the Board and to substitute "Business man". To delete the provisions in said section of the Plan to increase the Board membership.

2. Chapter 5 - 7, Section 5.4, to delete same in its entirety and to substitute in lieu thereof the following:

"5.4 Control of Waste Flow:

The Region can control the waste flow going to

Marion County Landfill, subject to the Region giving Marion County written notice of the Region's intention to dispose of solid waste in the County's current or proposed Subtitle D landfill. Marion County will have three (3) months within which time to accept or reject the Region's intention. Notwithstanding provisions to the contrary, Marion County shall have the right to enter into contracts to accept waste from other counties within or without the Region."

3. Chapter 6 - 3, Section 6.22 and Chapter 7 - 2, to delete the provisions that waste oil collection facilities be constructed at the landfill and provide that facilities be constructed at sites selected by Marion County or the Solid Waste Disposal, Inc.

BE IT, FURTHER, RESOLVED that the County Executive is authorized to execute any and all necessary documents to effectuate the intent of this Resolution.

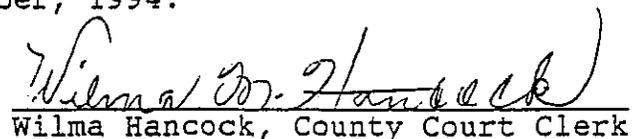
Adopted this 29th day of August, 1994.



HOWELL MOSS, County Executive

I certify that this Resolution was duly adopted by the Marion County Board of Commissioners on the 29th day of August, 1994, and has not been amended or rescinded.

This 31st day of October, 1994.



Wilma Hancock, County Court Clerk

MC MINN COUNTY

RESOLUTION NO. 347

**RESOLUTION TO ADOPT THE SOLID WASTE REGIONAL PLAN
FOR THE SOUTHEAST TENNESSEE SOLID WASTE PLANNING REGION**

WHEREAS: pursuant to T.C.A. Section 68-211-801, et. seq., Bledsoe, Bradley, Grundy, Hamilton, McMinn, Marion, Meigs, Polk, Rhea, and Sequatchie Counties have established themselves by resolution as the Southeast Tennessee Solid Waste Planning Region; and

WHEREAS: the resolution creating the Southeast Tennessee Solid Waste Planning region also established a Board with the responsibility of developing, administering, and updating the Region's plan as per the requirements of T.C.A. 68-211-801 et. seq.; and

WHEREAS: pursuant to T.C.A. Section 68-211-801, et. seq., each region is required to submit a 10 year (1994 to 2003) solid waste plan to the State Planning Office (revised by legislation to the State Division of Solid Waste Assistance); and

WHEREAS: the Southeast Tennessee Solid Waste Planning Board has developed a ten (10) year solid waste plan following the guidelines for such plans as promulgated by the Tennessee State Planning Office and T.C.A. 68-211-801 et. seq.; and

WHEREAS: the Solid Waste Regional Plan attached hereto and incorporated herein has been approved by the Southeast Tennessee Solid Waste Planning Board.

NOW, THEREFORE, BE IT RESOLVED that the McMinn County Board of Commissioners hereby ratifies the Southeast Tennessee Solid Waste Region plan and acknowledges McMinn County's participation and responsibilities under the plan.

Attest


County Clerk


Ronald Banks, County Executive

MEIGS COUNTY

OCT 17 1994

RESOLUTION NO. 6

**RESOLUTION TO ADOPT THE SOLID WASTE REGIONAL PLAN
FOR THE SOUTHEAST TENNESSEE SOLID WASTE PLANNING REGION**

WHEREAS: pursuant to T.C.A. Section 68-211-801, et. seq., Bledsoe, Bradley, Grundy, Hamilton, McMinn, Marion, Meigs, Polk, Rhea, and Sequatchie Counties have established themselves by resolution as the Southeast Tennessee Solid Waste Planning Region; and

WHEREAS: the resolution creating the Southeast Tennessee Solid Waste Planning region also established a Board with the responsibility of developing, administering, and updating the Region's plan as per the requirements of T.C.A. 68-211-801 et. seq.; and

WHEREAS: pursuant to T.C.A. Section 68-211-801, et. seq., each region is required to submit a 10 year (1994 to 2003) solid waste plan to the State Planning Office (revised by legislation to the State Division of Solid Waste Assistance); and

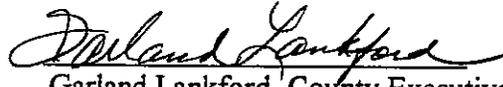
WHEREAS: the Southeast Tennessee Solid Waste Planning Board has developed a ten (10) year solid waste plan following the guidelines for such plans as promulgated by the Tennessee State Planning Office and T.C.A. 68-211-801 et. seq.; and

WHEREAS: the Solid Waste Regional Plan attached hereto and incorporated herein has been approved by the Southeast Tennessee Solid Waste Planning Board.

NOW, THEREFORE, BE IT RESOLVED that the Meigs County Board of Commissioners hereby ratifies the Southeast Tennessee Solid Waste Region plan and acknowledges Meigs County's participation and responsibilities under the plan.

Attest


County Clerk


Garland Lankford, County Executive

POLK COUNTY

STATE OF TENNESSEE I
 I
COUNTY OF POLK I

I, ANGIE C. SANFORD, hereby certify that I am the duly qualified and acting County Clerk of POLK County, Tennessee, and as such official I further certify that the attached hereto is a copy of excerpts from the minutes of the meeting of the Board of County Commissioners of said county held on August 18, 1994; that I have compared said copy with the original minute record of said meeting in my official custody; and that said copy is a true, correct and complete transcript from said original minute record insofar as said original record related to the matters therein set out.

WITNESS my official signature and the seal of said County this 28th day of October, 1994.

Angie C. Sanford
COUNTY CLERK

(SEAL)

RESOLUTION NO. 8-1-94

RESOLUTION TO ADOPT THE SOLID WASTE REGIONAL PLAN FOR THE SOUTHEAST
TENNESSEE SOLID WASTE PLANNING REGION

WHEREAS: pursuant to T.C.A. Section 68-211-801, et seq. Bledsoe, Bradley, Grundy, Hamilton, McMinn, Marion, Meigs, Polk, Rhea and Sequatchie Counties have established themselves by resolution as the Southeast Tennessee Solid Waste Planning Region; and

WHEREAS: the resolution creating the Southeast Tennessee Solid Waste Planning region also established a Board with the responsibility of developing, administering and updating the Region's plan as per the requirements of T.C.A. 68-211-801 et seq; and

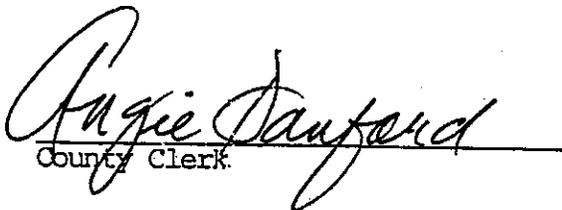
WHEREAS: pursuant to T.C.A. Section 68-211-801, et seq., each region is required to submit a 10 year (1994 to 2003) solid waste plan to the State Planning Office (revised by legislation to the State Division of Solid Waste Assistance); and

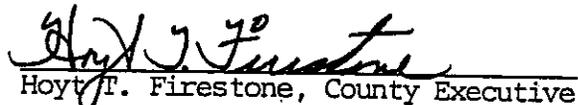
WHEREAS: the Southeast Tennessee Solid Waste Planning Board has developed a ten (10) year solid waste plan following the guidelines for such plans as promulgated by the Tennessee State Planning Office and T.C.A. 68-211-801 et seq.; and

WHEREAS: the Solid Waste Regional Plan attached hereto and incorporated herein has been approved by the Southeast Tennessee Solid Waste Planning Board.

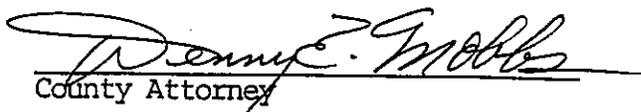
NOW, THEREFORE, BE IT RESOLVED that the Polk County Board of Commissioners hereby ratifies the Southeast Tennessee Solid Waste Region plan and acknowledges Polk County's participation and responsibilities under the plan.

Attest


County Clerk


Hoyt T. Firestone, County Executive

APPROVED AS TO FORM:


County Attorney

RHEA COUNTY

RESOLUTION NO. _____

**RESOLUTION TO ADOPT THE SOLID WASTE REGIONAL PLAN
FOR THE SOUTHEAST TENNESSEE SOLID WASTE PLANNING REGION**

WHEREAS: pursuant to T.C.A. Section 68-211-801, et. seq., Bledsoe, Bradley, Grundy, Hamilton, McMinn, Marion, Meigs, Polk, Rhea, and Sequatchie Counties have established themselves by resolution as the Southeast Tennessee Solid Waste Planning Region; and

WHEREAS: the resolution creating the Southeast Tennessee Solid Waste Planning region also established a Board with the responsibility of developing, administering, and updating the Region's plan as per the requirements of T.C.A. 68-211-801 et. seq.; and

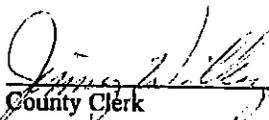
WHEREAS: pursuant to T.C.A. Section 68-211-801, et. seq., each region is required to submit a 10 year (1994 to 2003) solid waste plan to the State Planning Office (revised by legislation to the State Division of Solid Waste Assistance); and

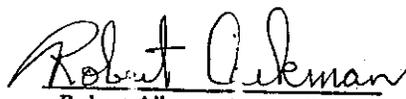
WHEREAS: the Southeast Tennessee Solid Waste Planning Board has developed a ten (10) year solid waste plan following the guidelines for such plans as promulgated by the Tennessee State Planning Office and T.C.A. 68-211-801 et. seq.; and

WHEREAS: the Solid Waste Regional Plan attached hereto and incorporated herein has been approved by the Southeast Tennessee Solid Waste Planning Board.

NOW, THEREFORE, BE IT RESOLVED that the Rhea County Board of Commissioners hereby ratifies the Southeast Tennessee Solid Waste Region plan and acknowledges Rhea County's participation and responsibilities under the plan.

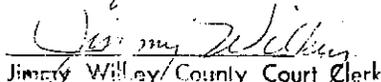
Attest


County Clerk


Robert Aikman, County Executive

CERTIFIED COPY

I, Jimmy Wilkey, Rhea
County Court Clerk do hereby
certify the foregoing to be
a true and correct copy of the
Original as recorded in Book # 6
Page # 279 in my Office this
26th day of August, 19 94


Jimmy Wilkey, County Court Clerk

SEQUATCHIE COUNTY

CERTIFICATION

Connie Easterly, Clerk of Sequatchie County, State of Tennessee, do hereby certify that the foregoing is a true and correct copy of the Resolution # 339 as recorded in Book 11 Book, Page 326 on file in this office.

Given under my hand and Seal of Office this 4th day of October, 1994.

Connie Easterly
Connie Easterly
Sequatchie County Clerk

RESOLUTION NO. 339

RESOLUTION TO ADOPT THE SOLID WASTE REGIONAL PLAN FOR THE SOUTHEAST TENNESSEE SOLID WASTE PLANNING REGION

WHEREAS: pursuant to T.C.A. Section 68-211-801, et. seq., Bledsoe, Bradley, Grundy, Hamilton, McMinn, Marion, Meigs, Polk, Rhea, and Sequatchie Counties have established themselves by resolution as the Southeast Tennessee Solid Waste Planning Region; and

WHEREAS: the resolution creating the Southeast Tennessee Solid Waste Planning region also established a Board with the responsibility of developing, administering, and updating the Region's plan as per the requirements of T.C.A. 68-211-801 et. seq.; and

WHEREAS: pursuant to T.C.A. Section 68-211-801, et. seq., each region is required to submit a 10 year (1994 to 2003) solid waste plan to the State Planning Office (revised by legislation to the State Division of Solid Waste Assistance); and

WHEREAS: the Southeast Tennessee Solid Waste Planning Board has developed a ten (10) year solid waste plan following the guidelines for such plans as promulgated by the Tennessee State Planning Office and T.C.a. 68-211-801 et. seq.; and

WHEREAS: the Solid Waste Regional Plan attached hereto and incorporated herein has been approved by the Southeast Tennessee Solid Waste Planning Board.

NOW, THEREFORE, BE IT RESOLVED that the Sequatchie County Board of Commissioners hereby ratifies the Southeast Tennessee Solid Waste Region plan and acknowledges Sequatchie County's participation and responsibilities under the plan.

Attest

Connie Easterly
CONNIE EASTERLY, COUNTY CLERK

Bill Harmon
Bill Harmon, County Executive

CITY OF CHATTANOOGA



Chattanooga Council

Room 111 • City Hall
Chattanooga, Tennessee 37402
Telephone (615) 757-5196 / Fax 757-4857

CAROL K. O'NEAL
Clerk of the Council

I. SHIRLEY CROWNOVER
Assistant Clerk of the Council

NOTICE OF CERTIFICATION

I, Shirley Crowover, Assistant Clerk To The City Council of Chattanooga, Tennessee, and as such keeper of the records of the City Council of said City, do hereby certify that the foregoing is a true, compared and correct copy of RESOLUTION NO. 20372 passed at the Council meeting of October 25, 1994.


Shirley Crowover
Assistant Clerk To The City Council

WITNESS my hand and the Seal of the City of Chattanooga, Tennessee on this 27th day of October, 1994.

RESOLUTION NO. 20372

A RESOLUTION TO ADOPT THE SOLID WASTE
REGIONAL PLAN FOR THE SOUTHEAST TENNESSEE
SOLID WASTE PLANNING REGION.

WHEREAS, pursuant to T.C.A. Section 68-211-801, et. seq., Bledsoe, Bradley, Grundy, Hamilton, McMinn, Marion, Meigs, Polk, Rhea, and Sequatchie Counties have established themselves by resolution as the Southeast Tennessee Solid Waste Planning Region; and

WHEREAS, the resolution creating the Southeast Tennessee Solid Waste Planning Region also established a Board with the responsibility of developing, administering, and updating the Region's plan as per the requirements of T.C.A. Section 68-211-801 et. seq.; and

WHEREAS, pursuant to T.C.A. Section 68-211-801, et. seq., each region is required to submit a 10 year (1994 to 2003) solid waste plan to the State Planning Office (revised by legislation to the State Division of Solid Waste Assistance); and

WHEREAS, the Southeast Tennessee Solid Waste Planning Board has developed a ten (10) year solid waste plan following the guidelines for such plans as promulgated by the Tennessee State Planning Office and T.C.A. Section 68-211-801 et. seq.; and

WHEREAS, the Solid Waste Regional Plan attached hereto and incorporated herein has been approved by the Southeast Tennessee Solid Waste Planning Board;

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Chattanooga hereby ratifies the Southeast Tennessee Solid Waste Region plan and acknowledges the City of Chattanooga's participation and responsibilities under the plan.

ADOPTED: October 25, 1994

:meh

APPENDIX F

MISCELLANEOUS - INFORMATION ON AREA LANDFILLS

DRAFT REPORT (9/15/93)
BLEDSONE/SEQUATCHIE COUNTY LANDFILL
SNL-04-103-0193

1. History

The Bledsoe/Sequatchie County Landfill is located one half a mile east of 127 in Bledsoe County, about 5 miles south of Pikeville and one mile north of College Station. The landfill was permitted as a Class I facility in 1984. CTI, the County's solid waste consultant indicated the closure plan for the facility was currently under review by the State. The financial assurance for the facility closure will be implemented upon approval of the closure plan. The environmental monitoring in place consists of 2 or 3 monitoring wells. The closure plan outlines upgrading the groundwater monitoring program. Two sediment ponds are sampled. No methane monitoring is conducted on site. The closure plan calls for passive venting of the decompositional gases.

2. Waste

The operator indicated the landfill accepts approximately 50 tons per day of Class I waste. This is a general estimate on the operator's part due to the fact that the facility does not have scales in operation. However the scales have been delivered and are currently being installed. The County records for the last year estimate about 40 tons per day. Since the collection is primarily green boxes, the County cannot provide control over the waste types. The landfill is receiving only small quantities of yard waste at the gate, 0-5 tons per month. Some demolition waste is also accepted at the landfill, 5-10 tons per month. Both these waste streams reduced substantially when the County started to charge a tipping fee. No special wastes are accepted at the landfill. The landfill does not accept tires. The service area includes Bledsoe and Sequatchie Counties and all the included cities. The operators indicated the waste composition to be about 80% residential, 10% commercial, 4% institutional, and 6% industrial.

The permitted area of the landfill was originally 24 acres. Twenty acres were permitted for landfilling and 4 acres for borrow. The operator estimates 8 to 10 years of life remains in the current footprint. The facility was permitted for nine lifts about ten feet each.

3. Existing Conditions

The operating hours at the Bledsoe/Sequatchie County Landfill are 8:00 am to 4:30 pm, Monday, through Friday. The landfill operators, Jack Pendegrass and Darrell Johnson, are responsible for the landfill. Mr. Pendegrass has been responsible for the landfill operations since the fill started in 1984. The operators along with Bonnie, the County Executive's secretary, provided relevant information on the landfill for this report.

The landfill is isolated, with well vegetated buffers around the working area. The site is quiet due to the isolation and the small waste flow. Two employees are on site with two dozers, and one pan used for site operations. The access road is gravel, a gate at the main entrance precludes unauthorized access. The operators conduct random inspections of the waste at the working face or in the trucks. The site has substantial cover dirt available on site based on estimates by the operator. The working area was well kept and contained. Areas around the site showed marginal intermediate cover.

4. Plans for Future Operation

Even though the expected remaining capacity would last 8-10 years, the regulations will not allow continued operations in an uncontained landfill past October 1996. The County is contemplating continued operations on site by expanding into an adjacent piece of property of about 80 acres with the development of a Subtitle "D" landfill.

5. Budget

The County charges a tipping fee of \$20.00 per ton for private haulers. Individual trucks are charged on the basis of an estimate of the capacity of the vehicle. For instance, \$5 for a pick up, \$7 for a one ton truck, etc. The Bledsoe/Sequatchie County Solid Waste operating costs were \$76,431 in 1991, \$106,388 in 1992, and \$117,256 for 1993.

6. Other Disposal Facilities

The County has no other disposal facilities. No composting, no Class III/IV landfills, and no pit burners. No known industrial landfills exist in the County.

DRAFT REPORT (9/15/93)
BRADLEY COUNTY LANDFILL
SNL-06-105-0006

1. History

The Bradley County Landfill is located off the southern Cleveland exit of I-75, by turning west off the exit and driving straight to the access road. The landfill was permitted as a Class I facility in 1971. The landfill is privately run by Santek. Santek provides full service operation to the County with the daily landfill operations, construction, monitoring, as well as engineering support. Santek indicated that the closure plan has been submitted and is under review by the State. The County will be responsible for appropriate financial assurance once the closure plan is approved.

The environmental monitoring in place consists of 4 monitoring wells. The sediment pond is also monitored. No methane monitoring takes place on site. The closure plan calls for passive venting of the decompositional gases.

The site consists of three phases, approximately 70 acres total. Phase I and II are closed by not capped. Portions of Phase III are operational currently. No final cover is in place. Side slopes in problem areas were provided with a drainage system which collects leachate outbreaks and transports the leachate to storage tanks on site.

2. Waste

The General Manager, Matt Dillard, indicated the landfill accepts approximately 200 tons per day of Class I waste. The landfill is receiving only small quantities of yard waste (10-15 tpd). Some demolition waste is also accepted at the landfill (25-30 tpd). The landfill accepts limited amounts of special waste, asbestos (10 tpd) and contaminated soil (200-300 tpy). The landfill accepts tires, they currently landfill the tires whole. However, Santek is researching sending the tires to Atlanta (Goodyear) for processing.

The service area includes Bradley County and all the included cities. The Regional Manager indicated the waste composition to be about 60% residential, 10% commercial, 10% institutional, and 20% industrial.

The remaining operational area, Phase III, has about 15 acres. The capacity of this area is expected to be reached within 6 to 9 months.

3. Existing Conditions

The operating hours at the Bradley County Landfill are 7:00 am to 4:30 pm, Monday through Friday and 7:00 am to 3:00 pm Saturday. The site manager, David Massingal, is responsible for the landfill. The Regional Manager, along with the Public Relations Director, Sheryl Dunson, provided relevant information on the landfill for this report.

The leachate generated on site is hauled to a municipal waste water treatment facility. The access road is paved which substantially minimizes dust problems. A gate at the main entrance precludes unauthorized access. The landfill has a set up for citizen's drop off of waste and recyclables to minimize traffic on the working face. The operators conduct random inspections of the waste at the working face. The site appears to have sufficient cover dirt available on site. The operator is interested in alternative daily cover options.

Current operations are in a Phase I. This area is estimated by the operator to last another six to nine months. The entire existing landfill is without a containment system. The existing landfill does have leachate controls in problem areas where outbreaks have been noted on the side slopes. The operator plans on completing final closure in the near future.

4. Plans for Future Operation

With the expected remaining capacity in the current cell of 1 year, the County intends to expand to the next area in full compliance with Subtitle "D". The expansion area is about 120 acres and is expected to last more than ten years. The hydrogeological study has been completed for the expansion and the design is under review by the State.

5. Budget

The County charges a tipping fee of \$33 per ton. The County pays Santek \$24 per ton for operating the landfill, this includes engineering, monitoring, construction and daily operations.

6. Other Disposal Facilities

The County does not have any other disposal facilities. Cleveland has an unpermitted brush pit. Reportedly several industries in the County have industrial landfills, this includes: Bowater, Olin, Allied Signal, and Magic Chef (incinerator).

DRAFT REPORT (9/15/93)
GRUNDY COUNTY LANDFILL
SNL-31-105-0208

1. History

The Grundy County Landfill is located in Coalmont, Tennessee, approximately three miles west of 56 South on Freemont Road. The landfill was permitted as a Class I facility in 1986. CTI, the County's solid waste consultant indicated the closure plan for the facility was currently under review by the State. The financial assurance for the facility closure will be implemented upon approval of the closure plan.

The environmental monitoring in place consists of 3 monitoring wells and 1 residential well. The closure plan outlines upgrading the groundwater monitoring program. No surface water or methane monitoring is conducted on site. The closure plan calls for passive venting of the decompositional gases.

2. Waste

The landfill accepts approximately 20 tons per day of Class I waste. CTI estimates approximately 6600 tons per year. The quarterly solid waste tipping fee surcharge reports indicate the volume of waste in cubic yards accepted at the landfill is:

July 1992	-	2,072	
August 1992	-	1,912	
September 1992	-	1,897	
October 1992	-	1,916	
November 1992	-	1,704	
December 1992	-	2,020	
January 1993	-	1,893	TOTAL - 23,094
February 1993	-	1,552	AVERAGE - 1,924
March 1993	-	1,768	
April 1993	-	2,108	
May 1993	-	2,076	
June 1993	-	2,176	

Since the collection is primarily green boxes, the County cannot provide control over the waste types. Land clearing wastes, brush, leaves or grass trimmings are dumped into the green boxes, as well as construction/demolition waste. The landfill does not typically accept yard waste at the gate. No special wastes are accepted at the landfill. The landfill does not accept tires, tires are handled directly by tire dealers. The service area includes Grundy County and all the included cities.

The permitted area of the landfill was originally 35 acres. Twenty to thirty acres are still operational. The County Executive estimates about one year of life remains at the facility. Recently, the State approved a vertical expansion of one lift, the County's consultant estimates this will last the County one year.

3. Existing Conditions

The operating hours at the Grundy County Landfill are 8:00 am to 3:30 pm, Monday, Tuesday, Thursday, Friday and 8:00 am to 12:00 pm Saturday. The County Executive, Michael Partin is the person responsible for the landfill. Mr. Partin along with his administrative assistant, Vicki Meigs, provided relevant information on the landfill for this report.

The landfill is isolated, with well vegetated buffers around the working area. The site is quiet due to the isolation and the small waste flow. One employee is on site with a dozer used for site operations. Two employees work in the solid waste program. The County has a pan available for landfill operations as needed, the pan is shared with other departments. The dozer has a radio and a fire extinguisher for the operator's use.

The site has substantial cover dirt available on site based on estimates by the County's consultant. The operation observed on site showed piles of dirt around the working area. The working area was well kept and contained (less than 50' by 50' in size). Areas around the site showed good intermediate cover, operational cover was generous as well.

4. Plans for Future Operation

With the expected remaining capacity to last to fall 1994, the County is working with their consultant to develop a transfer station. The County does not plan to continue operating the landfill past the expected life. The County has applied for State grants for scales and for a transfer station. The State denied the scales application due to the imminent closure of the landfill.

Due to the isolation of the County they are interested in minimizing the waste stream which needs to be transported out of the County. The County is interested in operating a Class III/IV landfill, possibly at the existing landfill site.

5. Budget

The County charges a tipping fee of \$18.00 per ton for private haulers. There is no charge to County trucks or residents. The tipping contributes to the operational costs of the landfill, the County Executive estimates the tipping fee covered the costs of the landfill.

The Grundy County Solid Waste/Sanitation Fund Statement of Proposed Operations for the Fiscal Year Ending June 30, 1994 indicates the estimated revenues at \$ 162,440. The estimated expenditures for Public Health and Welfare are \$ 166,038. This includes:

Sanitation Education/Information	\$ 1,000
Waste Collection	\$ 63,808
Convenience Centers	\$ 11,051
Landfill Operation/Maintenance	\$ 90,179
TOTAL:	\$ 166,038

6. Other Disposal Facilities

The County has no other disposal facilities. No composting, no Class III/IV landfills, and no pit burners. The County Executive did not know of any industrial landfills in the area.

DRAFT REPORT (9/15/93)
HAMILTON COUNTY LANDFILL
SNL-33-105-0023

1. **History**

The Hamilton County Landfill is located north on 153 to highway 58 north to Birchwood Pike where the landfill is on the left. The landfill was permitted as a Class I facility in 1972. CTI, the County's solid waste consultant indicated the closure plan for the facility was currently under review by the State. The financial assurance for the facility closure will be implemented upon approval of the closure plan.

The environmental monitoring in place consists of 3 monitoring wells. The closure plan outlines upgrading the groundwater monitoring program. The methane monitoring conducted on site consists of walking the perimeter of the site with an explosivemeter. The closure plan calls for passive venting of the decompositional gases.

The existing waste fill area was originally designed by TVA and was based on a "model landfill". This area was lined with bentonite and provided a leachate collection system.

2. **Waste**

The landfill accepts 200 - 250 tons per day of Class I waste. New scales are under construction at this time. The landfill is receiving only small quantities of wood waste, the operator is trying to divert the wood waste to the City's chipper/burner operation. The wood that is accepted is segregated and burned on site. Some demolition waste is also accepted at the landfill. Special wastes is accepted on a case by case basis, with State approval. Special waste consists mostly of petroleum contaminated soil which the operator has requested approval to use as a daily cover. The landfill does not accept tires. The service area includes Hamilton County and all the included cities. The Needs Assessment indicated the waste composition to be about 65% residential, 18% commercial, 8.5% institutional, and 8.5% industrial.

The current permitted area of the landfill is 16 acres. The old area pending closure is about 21 acres. The operator estimates the existing landfill will operate up to October 1996, it is permitted for two more lifts. Note, the County's consultant indicated the area was permitted for one additional lift and would run out of space by the end of 1995.

3. **Existing Conditions**

The operating hours at the Hamilton County Landfill are 7:00 am to 5:00 pm, Monday, through Friday and 7:30 am to 12:00 pm for Saturday. The landfill operator, Ken Castleberry is responsible for the landfill. The operator along with Ron Keyes, the County's consultant, provided relevant information on the landfill for this report.

The landfill employs 10 people, including three at the scale house. The site equipment includes: 3 dozers (Cat D7H, Dresser TD20G, and TD20E), one track loader (250E Dresser), and four tandem dump trucks. The access road is paved to the landfill. A gate at the main entrance precludes unauthorized access. The operator's waste inspection program utilizes inmate labor who are pulling wood waste out of the working face. If they notice any questionable waste the operator is notified and proper action taken. The site has sufficient cover dirt available on site based on estimates by the operator.

The current 16 acres are contained with a bentonite liner and leachate collection system in place. The older area is being prepared for closure. A leachate toe drain was recently installed in the older area due to outbreak problems. Once the State approves the closure plan the County will proceed with closure of this part of the landfill.

4. Plans for Future Operation

The County intends to finish operations in the existing "TVA Model Landfill" until the regulations require moving into a Subtitle "D" designed cell (October 1996). The County has 30 acres which have had a hydrogeological study conducted which is ready for submittal to the State. Once the hydrogeological study is reviewed and accepted the design of a three phase contained landfill will be completed.

5. Budget

The County charges a tipping fee of \$23.00 per ton for private haulers. Individual trucks are charged on the basis of an estimate of the capacity of the vehicle. For instance, \$5-7 for a pick up, \$10 for a one ton truck, etc.

6. Other Disposal Facilities

The City of Chattanooga has a Class I landfill known as Summitt and a pit burner/chipping operation both in Hamilton County.

DRAFT REPORT (9/15/93)
McMINN COUNTY LANDFILL
SNL-54-013-0003

1. History

The McMinn County Landfill is located south of Athens taking 30E out of town to the landfill sign on the right side of the road. The landfill was permitted as a Class I facility in 1971. The county Executive indicated the closure plan for the old site (34 acres) was approved with the appropriate financial assurance in place. The closure plan for the existing fill area (66 acres) is under revision.

The environmental monitoring in place consists of 7 monitoring wells. For surface water monitoring the sediment pond and Dry Branch (drainageway) are monitored. At this time no methane monitoring takes place on site. The closure plan calls for passive venting of the decompositional gases.

2. Waste

The landfill accepts approximately 150 tons per day of Class I waste. The landfill is receiving only small quantities of yard waste at the gate. The County Executive indicated Athens and Etowah has some leaf composting operations. Some demolition waste is also accepted at the landfill. The landfill accepts city sludge. The landfill accepts tires, storing them in a tire storage area while waiting for the State shredder.

The service area includes McMinn, Meigs, Polk Counties and all the included cities. The needs assessment indicated the waste composition to be about 50% residential, 20% commercial, 5% institutional, and 25% industrial.

The current permitted area of the landfill is 66 acres. The operator estimates 25 to 40 years of life remains in the current permitted area. The next cell will require a design modification to provide a composite liner in accordance with Subtitle "D".

3. Existing Conditions

The operating hours at the McMinn County Landfill are 7:30 am to 4:00 pm, Monday through Friday and 8:00 am to 4:00 pm Saturday. The landfill operator, Stan Moses is responsible for the landfill. The operator along with the County Executive Ron Banks, provided relevant information on the landfill for this report.

The landfill equipment includes two pans, 2 dozers, and 2 compactors. The leachate generated on site is hauled by a private industrial waste hauler to Etowah. The access road is paved which substantially minimizes dust problems. A gate at the main entrance precludes unauthorized access. The landfill has a set up for citizen's drop off of waste and recyclables to minimize traffic on the working face. The operators conduct random inspections of the waste at the working face or in the trucks. The site has substantial cover dirt available on site based on estimates by the operator. Soil or tarp is used for cover.

Current operations are in a cell with a clay liner and gravel leachate collection system. This area is estimated by the County Executive to last at least another year. The next cell will be provided with a containment system which includes a composite liner and leachate collection system. The permitted air space is approximately 2,700,000 cubic yards.

The old, unlined area, approximately 34 acres, is under final closure. The majority of this area has vegetation established, with the remainder graded and ready for seeding. An older area on site has been recently reworked and is in the process of regrading to minimize leachate problems. A leachate collection toe drain has been set in problem areas on site to minimize leachate outbreaks.

4. Plans for Future Operation

With the expected remaining capacity in the current cell of 1 year, the County intends to request a design modifications and move into the next area in full compliance with Subtitle "D". The expansion will last 25 to 40 years. The County has purchased a 125 acre parcel of property for future landfill options.

5. Budget

The County charges a graduated tipping fee. For in county waste: \$14.00 per ton for residential, \$20 per ton industrial, commercial, demolition; for out of county waste: \$32 per ton.

The proposed McMinn County budget for 1993\4 has a total expenditures of \$940,032 for the solid waste enterprise fund. This includes landfill operation & maintenance (including closure), landfill post closure care costs, other waste disposal (landfill development), other charges (insurance and trustee commission), employee benefits. The total revenue in the solid waste enterprise fund is \$1,051,282.

6. Other Disposal Facilities

The County has no other disposal facilities. No composting, no Class III/IV landfills, and no pit burners. The County Executive indicated that J.M. Huber in Etawah and Bowater at the south end of the County have industrial landfills.

DRAFT REPORT (9/15/93)
MARION COUNTY LANDFILL
SNL-58-105-0197

1. History

The Marion County Landfill is located in Jasper, Tennessee, off exit 155 of I-24, left under the interstate, left on Goosey Road (across from the Western Sizzler), left at the dead end return under the interstate and turn left. The landfill was permitted as a Class I facility in 1984. The permitted area is 81.55 acres of the total 211 acre site; 15 acres are in use at this time. CTI, the County's solid waste consultant indicated the State is in the process of reviewing the closure plan for the facility. The financial assurance for the facility closure will be implemented upon approval of the closure plan.

The environmental monitoring in place consists of 2 wells on site, one being a residential well used for the upgradient analysis. The County intends to conduct a hydrogeological study of the site with the expansion area, this will include recommendations for upgrading the groundwater monitoring program. No surface water or methane monitoring is conducted on site. The closure plan calls for the installation of passive vents for the decompositional gases generated.

2. Waste

The landfill accepts approximately 60 tons per day of Class I municipal solid waste. It should be noted the operator expects the waste stream to increase over the next several months due to new industries in the area. The service area is Marion County, including the Cities (Monteagle, Jasper, Kimball, South Pittsburg, Whitwell, Crossroads). New Hope has Waste Management haul their waste out of the County, to Jackson. The landfill accepts nothing from outside of the County.

The landfill accepts land clearing wastes, brush, leaves, grass trimmings, estimated about 5% of the waste stream. The demolition waste accepted estimated at 300 to 500 tons per year, 1992 had a high demolition waste component at 1000 tons. No special wastes are accepted at the landfill. No tires are accepted at the landfill and the County does not have a tire storage area. Wastes which may present an impact on the waste characterization include plastic plant wastes and pallets from local industries.

The operator provided the basic information regarding the tons of waste accepted:

August 1992 - County 645	February 1993 - County 505
Total 1593	Total 1143
September 1992 - County 623	March 1993 - County 650
Total 1646	Total 1489
October 1992 - County 557	April 1993 - County 655
Total 1285	Total 2508
November 1992 - County 517	May 1993 - County 623
Total 1244	Total 1403
December 1992 - County 532	June 1993 - County 655
Total 1266	Total 1544
January 1993 - County 552	July 1993 - County 612
Total 1355	Total 668

The operator indicated that the remaining capacity of the unlined portion of the site is over 700,000 cubic yards based on a survey of the site done in July 1993. The county's consultant indicated this

volume may be more in the vicinity of 500,000 cubic yards. This will provide more than enough volume for the County to October 1996. An area planned for expansion to meet Subtitle "D" requirements is 66.55 acres. The expansion area would substantially increase the estimated volume available on site, by several million cubic yards.

3. Existing Conditions

The operating hours at the Marion County Landfill are 8 am to 4 pm Monday through Friday and 8 am to 12 pm Saturday. The County Solid Waste Manager, Mark Payne (942-8011) is the person responsible for the landfill. Mr. Payne provided relevant information on the landfill for this report.

The site is contained with a gate at the access road. The access road is gravel which contributes to dust issues. The landfill has had scales since 1984. The equipment on site includes: two pans (631 and 633), two dozers (D8N, D6D), one compactor (816B), one grader, one backhoe, and one three wheel all terrain vehicle (provides quick and easy access to any area of the site for the operator). The waste is covered with soil (on site soil plentiful) typically or a tarp on bad weather days. The operator attempts to minimize the working face, with a goal of 50' by 50'. It may get to a maximum of 50' by 100' on heavy days.

The operator indicated the State inspector has cited them for blowing papers, but this was not noted and the site was well kept at the time of the site visit. The site operations were well conducted minimizing odors, blowing papers, vector attraction, etc. The operator personally conducts routine inspections of the waste, approximately two loads per day. The landfill has 5 employees, the landfill manager, one office worker, and three equipment operators.

4. Plans for Future Operation

The County has applied for a State grant to purchase new scales. They intend to continue operating past October 1996, in compliance with Subtitle "D". The expansion is currently under design by CTI, the County's solid waste consultant.

The County plans on operating in accordance with subtitle "D" which includes conducting a hydrogeological study, and designing a lined facility for the 66.55 acres that will not have waste by 10/1996. The leachate collection system can be connected to a sewer line within .5 miles of the site. The County is interested in exploring on site treatment of the leachate if practical.

5. Budget

The landfill operator estimated the capital cost for the facility around \$300,000, the landfill was built over 10 years ago. The operating costs of the facility for 1993 - \$301,000 (\$108,000 was for a particular piece of equipment, a D-8); 1994 budget is \$210,306. The operator estimated the operating costs at 1991/2 - \$10/ton; 1992/3 - \$16/ton; 1993/4 - \$11/ton. This operating cost does not include closure or post closure care.

The tipping fee is \$18/ton except for demolition waste which is \$5/cubic yard. The tipping fee is charged to the cities as well as private haulers. The operator estimated that if all the fees were collected, they would cover the costs of the landfill.

6. Other Disposal Facilities

The County has no other disposal facilities with no plans at this time for development of class III/IV landfills or pit burners.

DRAFT REPORT (9/15/93)
MINE ROAD PRIVATE LANDFILL
SNL-54-103-0174

1. **History**

The Mine Road Landfill is located west of Athens approximately 2.5 miles, right on County Road 166 .6 miles to the landfill entrance on the left. The landfill was permitted as a Class I facility in 1982. The landfill is privately owned and operated by Diversified Systems, Inc. Tina Evans, office manager, indicated that the closure plan has been submitted and is under review by the State. The Company will be responsible for appropriate financial assurance once the closure plan is approved.

The environmental monitoring in place consists of 4 monitoring wells. The sediment pond and diversion ditch are also monitored. No methane monitoring takes place on site.

The site consists of two phases, approximately 62 acres. Phase I and part of II are closed. About 7 acres are currently operational in Phase III.

Historical operational problems include leachate outbreaks along the side slopes of the landfill. The leachate entered the storm water system and was transported off site. This issue was resolved with the installation of a drainage system on the side slopes in problem areas which collects leachate outbreaks. The leachate is transported to storage tanks on site.

2. **Waste**

The landfill accepts approximately 30 tons per day of industrial waste. This is down from last year due to the small amount of airspace remaining. Last year the flow rate was more in the vicinity of 250 tons per day. The landfill accepts 100% industrial waste: paint sludge, coal ash, sand blasting, contaminated soil, wastewater treatment plant sludge, industrial sludge, etc. The service area includes all of Tennessee, although the majority of the current waste stream is from Loudon County.

The remaining operational area, Phase III, has about 15 acres. The capacity of this area is expected to be reached within 6 to 9 months.

3. **Existing Conditions**

The operating hours at the Mine Road Landfill are 7:30 am to 4:30 pm, Monday through Friday and on request for Saturday. The office manager, Tina Evans, along with the site operator provided relevant information on the landfill for this report. The equipment on site consists of: 850 John Deer Dozer, 762 John Deer Scraper, 2 tanker trucks, 350 and 450 Case dozers, and a B57S Kamatsu loader.

The leachate generated on site is hauled to a municipal waste water treatment facility. The access road is gravel which allows some dust problems. A gate at the main entrance precludes unauthorized access. The operator conduct random inspections of the waste at the working face. The site has substantial cover dirt available on site based on estimates by the operator.

Current operations are in a Phase I. This area is estimated by the operator to last another six to nine months. The existing landfill is without a containment system. The existing landfill does have leachate controls in problem areas where outbreaks have been noted on the side slopes. The operator plans on completing final closure in the near future.

4. Plans for Future Operation

With the expected remaining capacity in the current area of six to nine months, the operator intends to expand to the next area in full compliance with Subtitle "D". Subsequent to October 9, 1993 the operations cannot expand to previously unfilled areas. The expansion area is about 25-30 acres and is expected to last more than ten years. The hydrogeological study has been completed for the expansion and the design is under review by the State.

5. Budget

The tipping fee is based on the waste and determined by the operator. In general the tipping fee is between \$18 and \$35 per ton. Asbestos at \$50 per yard and contaminated soil at \$35 per yard are billed by volume.

6. Other Disposal Facilities

Not Applicable.

DRAFT REPORT (9/15/93)
RHEA COUNTY LANDFILL
SNL-72-103-0131

1. History

The Rhea County Landfill is located 1.5 - 2 miles from highway 27 off of Smyrna Road (left on Smyrna past the high school). The landfill was permitted as a Class I facility in 1977. The County's solid waste consultant, PSI indicated the closure plan was approved with the appropriate financial assurance in place. The closure plan has been bid with the contract documents under development at this time.

The environmental monitoring at the site consists of the 5 monitoring wells proposed in the closure plan. No surface water or methane monitoring takes place on site. The closure plan calls for passive venting of the decompositional gases, with one gas monitoring well.

2. Waste

The landfill accepts approximately 60 tons per day of Class I waste. The landfill accepts land clearing wastes. The County Executive indicated he was not aware of any composting operations. Some demolition waste is also accepted at the landfill. Most of the wood is not buried, it is left segregated for scavengers. The landfill accepts tires, storing them in a tire storage area while waiting for the State shredder.

The service area includes Rhea County and all the included cities. The Needs Assessment indicated the waste composition to be about 30% residential, 25% commercial, 10% institutional, and 35% industrial.

The permitted area of the landfill is nearing completion. The remaining air space is only a few months.

3. Existing Conditions

The operating hours at the Rhea County Landfill are 8:00 am to 5:00 pm, Monday through Friday and 8:00 am to 12:00 pm Saturday. The County Executive is responsible for the landfill. The County Executive along with his secretary Shirley Travis provided relevant information on the landfill for this report.

The landfill equipment includes: one D6H Caterpillar Dozer, one 953 Caterpillar loader, two Clark 35 yard pans, bobcat, two dump trucks, two Mack garbage trucks, and one Mack roll-off truck. The access road is gravel, which contributes to dust problems. A gate at the main entrance precludes unauthorized access. The landfill appears to have sufficient cover dirt available on site.

Current operations are in an area without a liner or leachate collection system. The operating face is too large for the volume of waste landfilled (100' by 50'). The County Executive estimates the current area will last another few months. The previous areas utilized are covered with marginal intermediate cover. Two large unvegetated areas show evidence of past landfilling operations. These areas are relatively flat which will result in infiltration of precipitation. The exterior side slopes have vegetation established.

4. Plans for Future Operation

With the expected remaining capacity in the current cell quickly running out, the County is exploring several possibilities for long term disposal. PSI is in the process of designing a transfer station for the County. An 80 acre area adjacent to the existing landfill is under evaluation for class I or class III/IV development in compliance with subtitle "D". The expansion area has had a hydrogeological study conducted which is currently under review by the State. Upon approval of the hydrogeological study the County has instructed their consultant to proceed with the design and permitting of a Class I landfill.

5. Budget

The County charges a graduated tipping fee. For local residents - \$10 per ton, for cities \$1.50 per ton and for private haulers \$22 per ton.

The Rhea County budget for 1993\4 has a total estimated expenditures of \$664,693 for the solid waste program. This includes waste pickup, contracted services, and litter. Total estimated revenue in the solid waste enterprise fund is \$ 660,684.

6. Other Disposal Facilities

The County has no other disposal facilities, no composting, no Class III/IV landfills, and no pit burners. The County Executive indicated that some of the cities may have burn pits.

DRAFT REPORT (9/15/93)
SUMMITT LANDFILL
SNL-33-105-0207

1. History

The Summitt Landfill is located at the Collegedale exit off of I-75 in Chattanooga on Woodland Drive. The landfill was permitted as a Class I facility in 1977. The city representative, Drexyl Hydal, indicated the closure plan was approved but under revision. He also indicated the appropriate financial assurance in place. The site has an old area (60 acres) which was closed in 1977. The current area is 160 acres with 41 acres not yet part of the fill operations.

The environmental monitoring in place consists of 4 existing monitoring wells. The closure plan calls for additional monitoring wells. No surface water monitoring takes place on site. The closure plan calls for passive venting and the installation of some monitoring points for the decompositional gases.

2. Waste

The landfill accepts 1200 - 1500 tons per day of Class I waste, by far the largest municipal solid waste landfill in the region. Even though the City has a brush area with a chipper and ACD which handles the majority of the brush, the landfill accepts about 100 tpd of yard waste. The landfill accepts demolition waste, waste water sludge, tires, and special waste (asbestos, sludge, contaminated dirt, industrial waste, food sludge, etc).

The service area includes the City of Chattanooga, East Ridge, Red Bank, Collegedale, Signal Mountain, Soddy Daisy and sometimes surrounding Counties utilize the landfill. The Needs Assessment indicated the waste composition to be about 30% residential, 50% commercial, 5% institutional, and 15% industrial. The city representative indicated about half of the waste is from the City and half hauled by private companies.

3. Existing Conditions

The operating hours at the Summitt Landfill are 7:00 am to 5:00 pm, Monday through Friday and 7:00 am to 12:00 pm Saturday. Drexyl Hydel provided relevant information on the landfill for this report. The solid waste department employs 18 people.

The landfill equipment includes two Caterpillar D8 dozers, three Dresser dozers (TD-7, 25 and 15), one compactor, four caterpillar scrapers (3 621-E and 1 621-B), one Caterpillar 955 loader, one Dresser TD-850 Grader, one leachate truck and one water truck. A gate at the main entrance precludes unauthorized access. The access road is paved to the gate which substantially minimizes dust problems. The landfill has a set up for citizen's drop off of waste and recyclables to minimize traffic on the working face. The operators conduct random inspections of the waste near the working face. Soil is currently used for cover, although the City is considering alternatives. The landfill has an active gas collection system in closed areas. Currently the gas is flared but the City is looking for customers to use the gas.

Current operations are in a cell without a containment system. This area is estimated to have sufficient air space to last another eight years. The previous area utilized is under final closure. A leachate collection toe drain has been set in problem areas on site to minimize leachate outbreaks.

4. Plans for Future Operation

The City is working with their consultant in determining how much life the existing landfill has and at what point they want to move into a lined facility to accommodate Subtitle "D". Of the existing 160 acres area, the corner may be lined in 1995. The City is considering purchase of an 209 acre area north of the existing facility to allow for long term expansion in compliance with Subtitle "D".

5. Budget

The City charges a tipping fee for private haulers \$23 per ton. City waste is not charged. Tires are \$80 per ton and special waste is \$200 per load.

6. Other Disposal Facilities

The County runs a Class I landfill as presented in the Hamilton County Landfill Report. The City has a chipping/air curtain destructor operation which handles about 100 tons per day of wood waste. This facility is located at the intersection of Wisdom and Amnicola. The City uses a Stumpmaster chipper which can chip up to 40 tons per hour (stumps, brush, pallets, tires, etc). The chipper/burner operates from 7:00 am to 4:00 pm monday through friday and 7:00 am to 12:00 pm saturday. The facility has had scales since February 1993. Nothing is disposed of at this site, even the ashes are taken off site to Summitt. The capital cost for this facility was approximately \$750,000 (\$400,000 for the chipper, \$200,000 for the burner, \$50,000 for the land, and \$100,000 for the building and miscellaneous).

The City does not operate any composting or Class III/IV landfills. The City had a demolition landfill which closed in July 1993.

DRAFT REPORT (9/15/93)
WALKER COUNTY LANDFILL
146-003D-SL

1. History

The Walker County Landfill is south of Chattanooga taking 17 South which turns into 193 South for 8-10 miles, turning left on Kendritch Switch, driving all the way around to take a right on Marbletop then driving to the top of the hill. The landfill was permitted as a Class I facility on July 18, 1975. Tom Bailey of Mayes, Sudderth and Etheridge (404-952-0011), the County's solid waste consultant indicated the closure plan for the facility is currently under review by the State. Mr. Bailey indicated that the State of Georgia does not require financial assurance for municipal facilities.

A hydrogeological study was conducted on site for both the existing area and the proposed expansion. The State issued a site acceptability letter for the proposed expansion. The environmental monitoring proposed consists of 9 groundwater monitoring wells. Sediment ponds on site will also be sampled. A methane monitoring program has been approved and will be implemented on site.

2. Waste

The Road Department provided copies of daily landfill records for the month of August 1993, which indicate the landfill accepted 3052 tons of waste. Based on a six day work week this would be about 120 tons per day. The County's solid waste consultant indicated the scale records from July 1992 through June 1993 showed a 34,215 tons weighed per year and the recycled material for that time period was 9,400 tons which is 27.5% of the waste stream. They estimate about 80 tons of waste per day is actually landfilled. The Walker County Multi-Jurisdictional Solid Waste Management Plan prepared by Mayes, Sudderth & Etheredge, Inc in May 1992 provides some different waste flow estimates. The Plan states "Since the scales were installed in August 1991, the landfill has been receiving an average of 152 tons per day... The amount of waste generated on an annual basis can be determined by multiplying the average of 152 tons per day by 365, which results in a total of 55,630.1 tons per year." The plan should have used actual operating days instead of calendar days resulting in an annual flow of closer to 46,500 tons.

The MS&E Plan refers to some existing problem wastes at the County landfill: sewage sludge, corrugated cardboard, and used household appliances. Currently the County has an aggressive recycling program which includes cardboard, appliances, metals, aluminum, glass, tires, etc.

The County's solid waste consultant indicated the site is about 100 acres with 55 acres for the proposed expansion and 47 acres for the existing landfill. Although the Solid Waste Management Plan claims the facility had one year remaining life, a more recent analysis of the facility indicates sufficient air space to last to early 1995.

The landfill accepts yard waste, asbestos, and demolition material. Tires are accepted at the facility for \$1/tire, but they are sent to a recycling facility in Atlanta, they are not landfilled. The landfill does not accept waste oil.

3. Existing Conditions

The operating hours at the Walker County Landfill are 8:00 am to 5:00 pm Monday through Saturday. The County Landfill Operator, Larry Hudson (706-375-4983) is the person responsible for the landfill. Note, that Mr. Hudson only recently took over the operational responsibilities at the landfill. Mr. Hudson along with Rosalie at the Road Department and Ken York at the County Civic Center, provided relevant information on the landfill for this report. Ken York provided a copy of the May 1992 Solid Waste Management Plan prepared by MS&E.

The landfill is currently operating in an unlined area. The site is contained with a gate at the front entrance. The site has an existing sediment pond, which could use some vegetation on the side slopes to minimize erosion and improve aesthetics.

The landfill appears to have sufficient cover on site for operational uses. The soil tends to be cherty which may make it inappropriate for use in a liner system for the expansion area. The landfill equipment includes two dozers, two loaders, two pans, and one water truck. The landfill employs 4 half time employees for the scale house and recycling area, 3 equipment operators and 1 manager.

The landfill has an area for citizens drop off of recyclable material. No organized inspection program is in place by the operator. The County supports an aggressive recycling effort.

4. Plans for Future Operation

The County plans on continuing operations at the landfill with the eventual development of a 30 acre footprint to meet Subtitle "D" requirements. The expansion area is currently being excavated with the soil being used for cover in the operating area. The site hydrogeological investigation has resulted in the State issuing a site acceptability letter for the expansion. The County is considering proceeding with the development of the Design and Operation Plans for the expansion in compliance with Subtitle "D".

The existing area has sufficient capacity to operate until early 1995 based on a recent capacity assessment conducted by the County's solid waste consultant. The County is considering applying for a vertical expansion for this area.

5. Budget

The County charges \$15/ton for municipal solid waste and \$45/ton for special waste (asbestos). The MS&E Plan shows the Disbursements and Receipts for the Walker County Landfill for October 1990 - September 1991: disbursements \$359,123.63 and receipts \$428,591.28 (from collections).

6. Other Disposal Facilities

The MS&E Plan refers to the City of Lafayette's inert landfill located off Coffman Springs Road. "The landfill originally designed and used as a sanitary landfill, is now used exclusively by the city for inert waste disposal."

The MS&E Plan refers to a private landfill operated by Steele Brothers. This 150 acre construction/demolition landfill is located three miles southeast of the County Landfill. "The facility has been in operation for approximately 20 years and has been used primarily by construction companies."

The Road Department has a chipper which is used to process wood waste. The material is given to residents as requested for individual use.

DRAFT REPORT (9/15/1993) CATOOSA COUNTY LANDFILL

1. History

The Catoosa County Landfill is near Rock Springs, 95 south to 151 left into Catoosa County landfill on left (if coming from I-75 south, take 151 west and a right on Brock, right on Dedmon to landfill). The landfill was permitted in 1973 as a Class I facility. The existing fill area was permitted in 1984. Tracey Bass, the landfill operator and Damon Riggs with Piedmont Hensley Olsen, the County's consultant along with Solid Waste Management Plan provided relevant information on the landfill for this report. The closure plan for the facility was approved by the State. The environmental monitoring in place consists of 16 groundwater monitoring wells, 2 surface water monitoring locations (one discharge from the sediment pond and one local spring), and 6 methane monitors.

Piedmont, Olsen, Hensley developed the Solid Waste Plan for Catoosa County and Municipalities of Ringgold and Fort Oglethorpe, dated March 1992 (revised September 1992).

2. Waste

The Solid Waste Management Plan provides some waste flow estimates. Scales were installed at the landfill in October 1991. The Plan used October and November 1991 data to estimate waste generation rates. The Plan states the average daily waste stream is 111 tons per day. This equates to about 5.2 pounds per person per day (population of 42,464 for 1990). "The amount of waste generated on an annual basis can be determined by multiplying the average of 111 tons per day by 365, which results in a total of 55,630.1 tons per year." It is likely that the total waste flow would be 111 tons per day times 300 days per year, for operational days, 33,300.

The landfill's waste stream as described in the Plan is 82% residential, 13.7% industrial (majority carpet industry), 1.8% construction/demolition, and 2.5% inert waste. The landfill accepts yard waste, asbestos, and demolition material. Tires are accepted at the facility for \$1/tire, but they are sent to a recycling facility in Atlanta, they are not landfilled. The landfill does not accept waste oil.

3. Existing Conditions

The operating hours at the Catoosa County Landfill are 8:00 am to 5:00 pm Monday through Saturday. The County Landfill Operator, Tracy Bass is the person responsible for the landfill.

The landfill is currently operating in an unlined area. The remaining capacity is a few months. The County has applied for a vertical expansion which will provide sufficient air space to last to 1998. The current site is 30 to 40 acres. An additional 122 acres was purchased for a new, lined fill area (20 to 30 acre footprint).

The landfill has an area for citizens drop off of recyclable material. The site has an existing sediment pond, which could use some vegetation on the side slopes to minimize erosion and improve aesthetics. The working face of the landfill is kept small and well maintained, with suitable daily and intermediate cover evidenced.

4. Plans for Future Operation

The County plans on continuing operations at the landfill, with the approval of a vertical expansion request under review by the State. The County is working on plans for an adjacent piece of land for development of a 122 acre area (20-30 acre footprint) to meet Subtitle "D" requirements. The existing area will be operated until regulations require upgrading.

5. Budget

The County charges \$35/ton for commercial and industrial users. The Solid Waste Management Plan provides the 1991/1992 budget for the sanitary landfill at \$593,600.

6. Other Disposal Facilities

The Solid Waste Management Plan indicates that based on the Environmental Protection Division landfill inventory from 1991 and interviews with major industries in the county, no other permitted solid waste disposal facilities are located within the county.

DRAFT REPORT (SEPTEMBER 15, 1993)
DADE COUNTY SOLID LANDFILL

Since the Dade County Landfill expected life was extremely limited, the site was not visited and a complete report is not presented. The Solid Waste Management Plan for Dade County and Trenton, Georgia prepared by Piedmont, Olsen, Hensley dated June 1993 was reviewed and the County's consultant, Piedmont Hensley Olsen (Damon Riggs) contacted to confirm the plans of the County. Note, the Plan is currently under review by the State. The Plan indicates that the landfill charges a tipping fee of \$3.75 per yard to private haulers.

The Solid Waste Management Plan indicates that the landfill did not operate with scales and it was difficult to estimate the waste flow. The Plan indicated between 15 and 30 tons per day of waste are disposed of at the landfill. In the past the County's waste was hauled to Marion County for disposal. The Back Valley Road, or Dade County Municipal Solid Waste Landfill began operation in 1981.

The current operation is under a Consent Agreement with the State, the site is virtually out of space. A vertical expansion request is under consideration by the State, but the site does not have an approved groundwater monitoring program, nor the required environmental monitoring in place so the vertical expansion cannot be approved at this time.

The County is virtually out of capacity at the existing facility and is in the process of deciding on disposal options. At this time continuing operations at the landfill by coming into compliance with Subtitle "D" is not considered a viable option. The Solid Waste Plan outlines options for long term disposal. Three private landfills are within 100 mile radius of the County. The Plan also recommends the development of an inert waste disposal facility for the use of stumps, leaves, limbs, yard trimmings and other materials that cannot be reclaimed as mulch.