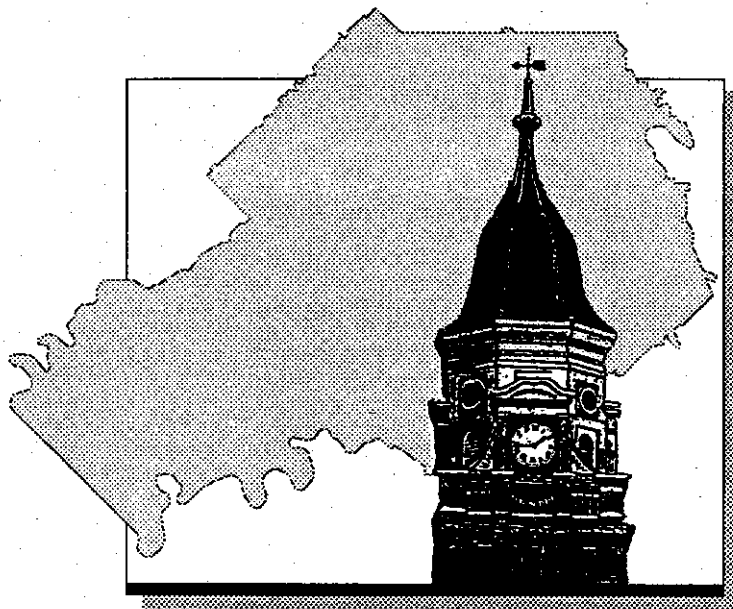


# MUNICIPAL SOLID WASTE REGIONAL PLAN



*Prepared for*  
**Knox Solid Waste Planning Region**

*Prepared by*  
**Knox Solid Waste Planning Region**  
*and*

**CHM HILL**

*March 1994*

## Preface

This 10-Year Solid Waste Plan is organized to correspond exactly with the organization of *Guidelines for Preparation of a Municipal Solid Waste Regional Plan*, July 1992. The chapters and subheadings are presented in the same order as the guidelines, and the required forms are included at the end of each chapter. Additional tables are included in the text and are distinguished by a different numbering system. All 11 × 17 figures and tables are included at the end of the appropriate chapters.

The 10-year budgets are created based on the county's fiscal years, which run from July 1 to June 30. For consistency and ease in integrating the budgets and schedules, the 10-year schedules are also developed on a fiscal year basis.

This document is printed on recycled paper. The text is printed on Hammermill Unity DP, an unbleached product made of a minimum of 50 percent post-consumer fiber and 50 percent pre-consumer fiber collected from office paper recycling programs. The 11 × 17 sheets are Simpson Recycled Offset Wove, a product made of 50 percent waste paper. Both papers exceed the Environmental Protection Agency (EPA) standards for minimum recycled content in printing papers. The cover sheet and chapter dividers are Brite-Hue alkaline papers containing 50 percent recycled material.

Knox County is committed by ordinance to encourage recycling by procuring recycled products such as these. A copy of that procurement ordinance is included as an attachment to Chapter 6.

Knox County is home to the main campus of the University of Tennessee (UT), which is celebrating its 200th birthday in 1994. In honor of the event, this document is bound in the school colors.



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## Acronyms

BFI	Browning-Ferris Industries
C&D	construction and demolition
CBD	central business district
CIS	Center for Industrial Services
EPA	Environmental Protection Agency
ETDD	East Tennessee Development District
FY	fiscal year
HDPE	high density polyethylene
HHW	household hazardous waste
MPC	Metropolitan Planning Commission
MRF	Materials Recovery Facility
MSA	Metropolitan Statistical Area
MTAS	Municipal Technical Advisory Service
NPDES	National Pollutant Discharge Elimination System
O&M	operating and maintenance
PET	polyethylene terephthalate
PR	public relations
PSA	public service announcement
RFP	Request for Proposal
TDEC	Tennessee Department of Environment and Conservation
tpd	tons per day
tpy	tons per year
TVA	Tennessee Valley Authority
UT	The University of Tennessee
WTE	waste to energy

# **Executive Summary**

## **1.0 Region Description and Rationale for Its Formation**

The Knox County Solid Waste Planning Region is a single-county region that includes the City of Knoxville and the Town of Farragut. The total area of the county is 508.5 square miles.

Knox County formed a single-county region after discussions with neighboring counties (Anderson County, in particular). A Knox-Anderson region was proposed by the East Tennessee Development District (ETDD) Needs Assessment because Knox County's solid waste is currently taken to a private landfill, Chestnut Ridge, in Anderson County. Anderson County elected to form a single-county region, leaving Knox to do the same. However, Knox Region continues to discuss regionalization with other counties. After the initiation of joint projects and if state law is amended to extend the deadline to form regions, it may become possible for Knox Region to regionalize with other counties.

## **2.0 Regional Needs**

The Knox Solid Waste Planning Region has several strengths in its existing system that can be expanded upon. They include a potential city contract for yard waste mulching and composting (processes to break-down yard waste into usable organic products) that allows county residents and businesses to drop off materials; a system of convenience centers (fenced, staffed areas where residents can take their garbage and recyclables) that includes household recycling and the collection of waste oil, oil filters, antifreeze, paint solvents, and Freon™ from discarded refrigerators; a city-owned transfer station (where waste is transferred from smaller vehicles to larger ones for transport) and Recycling Centers; several intermediate processors for paper and paperboard; strong local markets for office paper, newsprint, aluminum cans, and steel; and several environmental education programs adaptable for public and private schools.

The regional needs are summarized as follows:

- A comprehensive public education and information program, and a Solid Waste Coordinator position for the county
- Two more county recycling convenience centers in the east and northeast parts of the county
- A storage area for old tires to be shredded. Whole tires are hard to manage in landfills and will be banned from them
- A location for residents to take their household hazardous waste (HHW) for disposal



- Increased home and on-the-job recycling and waste reduction (practices to reduce the amount or type of waste created)
- Crack down on illegal dumping
- Increased efforts to keep yard waste out of landfills
- Improved convenience centers make it easier and more convenient to recycle
- Teaching residents to take their construction and demolition (C&D) debris to a special landfill designed for such waste
- Investigate the feasibility of a joint city-county transfer station to concentrate on small quantity generators of C&D waste

State law requires Tennessee counties to reduce the solid waste disposed of in Class I Landfills by 25 percent per person by 1996. If the county does not meet the new state requirements, it will be fined and become ineligible to receive state funds.

### **3.0 Regional Goals and Objectives**

Regional goals and objectives have been developed for the waste reduction, collection and transportation, recycling, disposal, and public education components of the Solid Waste Plan, and they are described in detail below. The overall goal of the region is to use existing facilities and the new plan to make the solid waste management goal attainable.

#### **3.1 Waste Reduction**

Knox Region is fortunate to have a municipal yard waste mulching and composting operation in its plans. The City of Knoxville also has a collection system in place for solid waste and yard waste. Industries located in or near the county that can use recycled material include Knoxville Recycled Fibers, Paper Stock Dealers, Southern Foundry, Knox Metals, the Kimberly Clark Company, Bowater Paper Company, and the headquarters for Alcoa Recycling. These will assist the region in achieving its 25 percent reduction goal as mandated in T.C.A. 68-211-861(a). The objectives to reach this goal include the following:

- Increasing public awareness through an aggressive public education program
- Working with the University of Tennessee (UT) Center for Industrial Services (CIS) on waste reduction workshops for industries in the region to identify more of the waste stream for reduction or recycling

- Working with the Tennessee Valley Authority (TVA) and UT CIS on a program to place retired engineers who are trained in waste reduction with commercial businesses and institutions
- Working with recycling businesses and organizations for more recycling of office paper and corrugated cardboard at work
- Working with the city, county, and other agencies to encourage backyard composting
- Determining the best way to collect C&D debris from small contractors and "do-it-yourselfers" to divert it away from Class I facilities
- Coordinating with Anderson County to ban yard waste at Chestnut Ridge Landfill or to impose surcharges to discourage dumping
- Developing a waste exchange program (one business' waste is another business' feedstock) for East Tennessee, or increase participation in existing waste exchange services
- Finding ways to trade or re-use pallets

The long-term goal of Knox County is to achieve a 1 percent waste reduction each year after 1995, for a total reduction of 33 percent by the year 2003. However, the region will not be penalized for falling short on a given year if the overall 1 percent rate is maintained throughout the period.

### **3.2 Collection and Transportation**

The collection and transportation goals are as follows:

- Provide collection services to all residents within the Knox Region where feasible for population density
- Change the way residents pay for garbage disposal so that they pay more if they throw out more garbage, but they don't pay for materials they recycle. Under this system, solid waste disposal charges would be removed from property taxes.
- Find a location to store used tires until they can be shredded
- Develop, in conjunction with the city, a place for citizens to take their HHW

- Site new convenience centers in the east and northeast parts of the county
- Work to strengthen fines for and enforcement of illegal dumping

### **3.3 Recycling**

The regional goal of the recycling program is to expand participation in the region by aggressively educating residents and supporting recycling opportunities. Figure ES-1 shows the materials [ $> 100$  tons per year (tpy)] recycled in the county in 1993. Objectives to reach that goal include the following:

- Implementing a public education program
- Working with existing recycling businesses
- Making it easier to recycle office paper, cardboard, and newsprint at work
- Implementing a variable rate fee structure for county residents using convenience centers for garbage disposal with no charge for bringing recyclables
- Expanding recycling at convenience centers to include paper and cardboard
- Teaching residents how to backyard compost
- Developing grants or other incentives for local businesses and industries that use recycled materials as feedstocks

If there is not enough voluntary recycling to meet the state goals, the region may have to require recycling, starting with businesses.

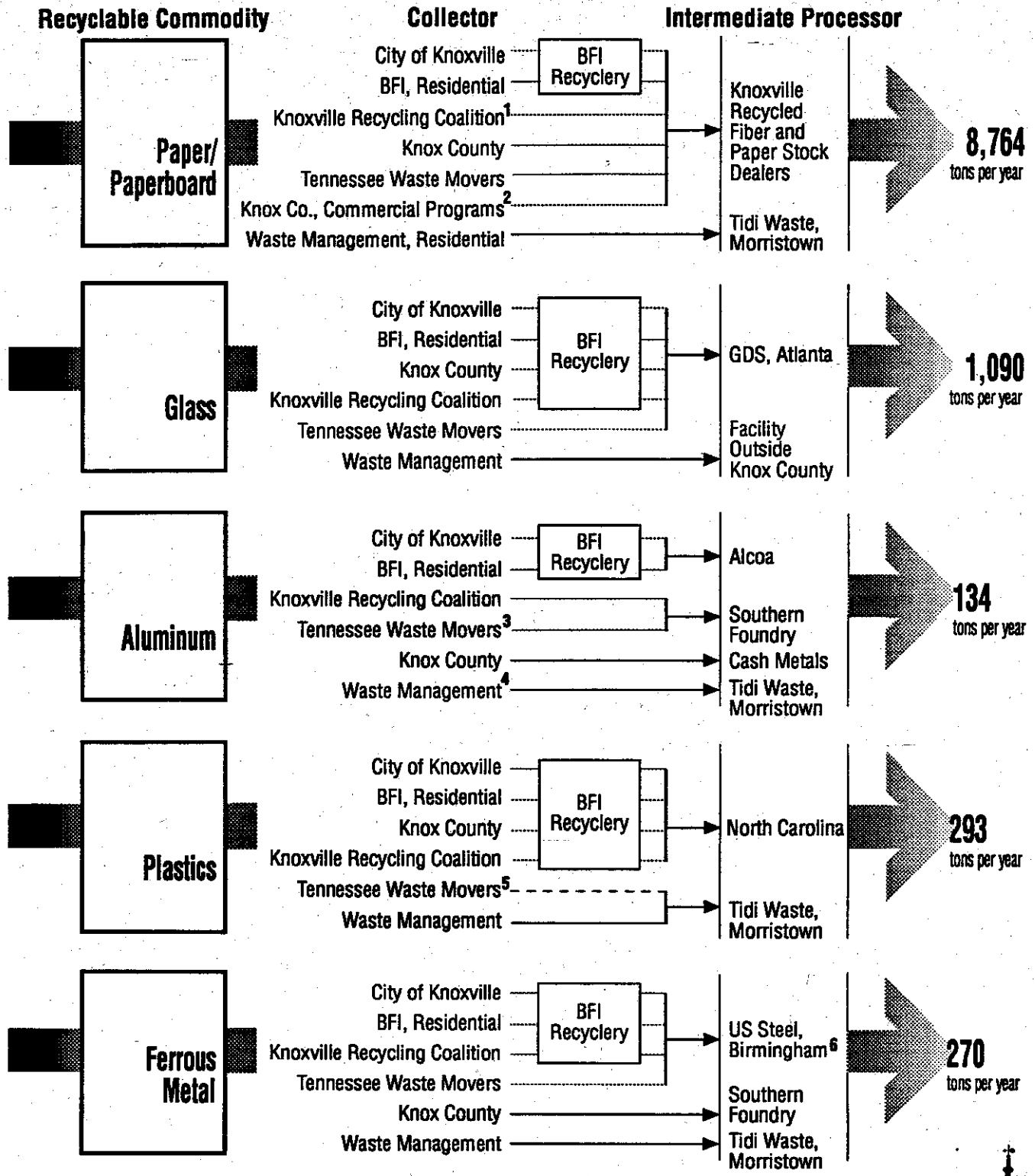
### **3.4 Disposal**

The regional goal of the disposal program is to ensure a disposal capacity that meets demands in an environmentally sound and cost-effective manner for the planning period. Capacity is expected to be provided through private contracts, at least initially.

Other objectives include the following:

- Maximizing C&D disposal in Class IV facilities through education and cost incentives for haulers, such as lower tipping fees

# Knox County 1993 Recycling Stream...



1 Residential

2 KRC, BFI, News-Sentinel, etc.

3 Alternate Market: Knox Metals

4 Alternate Market: Alcoa

5 Currently not active in plastic - 1993

6 Alternate Market: Southern Foundry, Knox Metals

Figure ES.1  
**Knox Region**  
**1993 Recycling Stream**  
 (recycled materials of >100 tpy)



- Find ways to encourage residents to take their C&D debris to special landfills designed specifically for such waste
- Planning for future disposal needs, including a regional Class I and/or IV Landfill, in the second half of the planning period

### **3.5 Public Information Education**

The regional goal of the public education program is to reach every resident of the county in a cost-effective manner with sound information on solid waste management and, in particular, waste reduction and recycling. This goal will be accomplished through the following:

- Seeking state grant money for educational planning as soon as a plan is approved
- Actively cooperating with school administrations to incorporate diversified solid waste curricula and activities in schools
- Encouraging the school system to schedule ongoing waste audits and waste reduction workshops by UT CIS and others
- Developing an aggressive campaign of public education using a speaker's bureau, workshops, displays at civic events, articles in newsletters, news stories, and public service announcements
- Working with South Central Bell on developing a "Green Pages" section of the phone book to place information in homes and businesses
- Actively promoting the Recycling Hotline
- Working with the Knoxville Chamber of Commerce, the Greater Knoxville Beautification Board, the League of Women Voters, the Homebuilders Association, and other community groups to promote recycling and waste reduction

### **3.6 Household Hazardous Waste**

The goal of the Solid Waste Planning Board is to have a permanent solution to HHW collection in place by fiscal year (FY) 1996 that disposes of HHW in an environmentally and economically sound manner. The primary objective to meet that goal is to conduct a feasibility study to determine the most efficient means of providing a permanent solution in FY 1994/1995. Other objectives are to develop an educational and promotional program and incorporate it into the schools, target an effective participation rate, and provide the collection service by imposing, at most, a small user fee.

## **4.0 System Elements in the Plan**

The system elements included in the plan are source reduction, source diversion, recycling, and landfilling. Figure ES-2 shows the final system configuration. Yard waste mulching and composting will likely divert the largest quantities from the landfill, followed by recycling. An aggressive public education program is anticipated to have a positive affect on the entire system.

Figure ES-3 (located at the end of this summary) shows the integrated solid waste management system, along with locations of recycling centers, collection and transportation stations, end markets, and landfills.

Source reduction is accomplished primarily through educational programs for businesses, industries, and institutions through waste audits and will emphasize residential source reduction among students and adults. Source diversion will be accomplished primarily through sending materials to Class IV Landfills rather than the Class I Landfill.

The Knox Region has not realized its recycling potential to date. In the future, increased emphasis will be placed on recycling at city Super Centers, county convenience centers, and buy-back centers. However, greater diversion is anticipated through recycling of office paper collected from businesses and industries. Materials that will continue to be recycled include office paper, corrugated cardboard, newsprint, aluminum, steel cans and other ferrous (metals containing iron) and non-ferrous metals, all colors of glass, and polyethylene terephthalate (PET) and high density polyethylene (HDPE) plastic. Recycling programs will be developed for pallets, tires, and other materials.

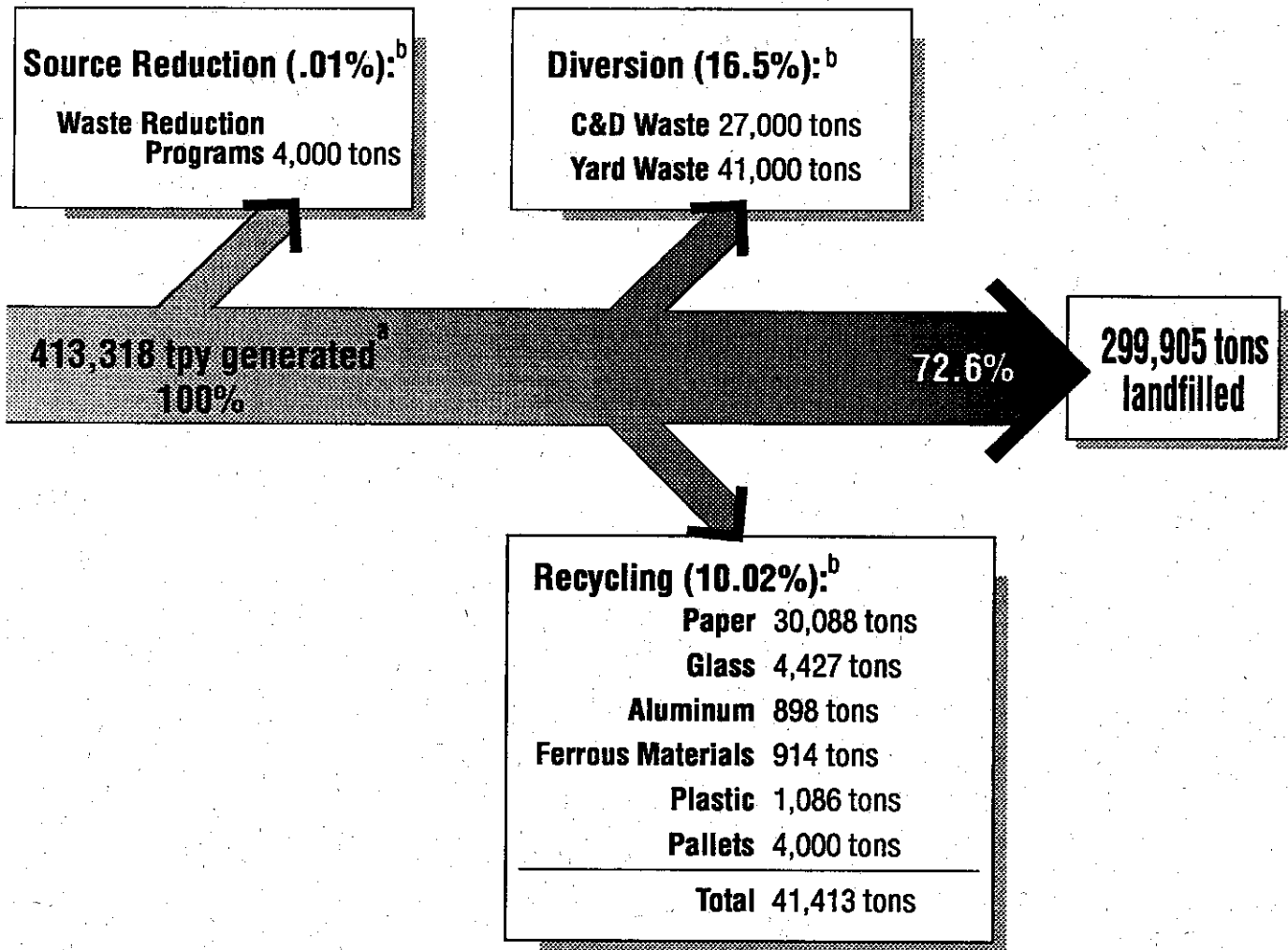
## **5.0 Coordination of New Elements and Existing System**

The four main types of new programs are public education, source reduction, recycling, collection and transportation, and HHW collection.

Public education is a critical element of this plan. The public education program will be integrated into the existing system primarily through the schools and businesses. Without knowledge of alternatives, the public can be expected to follow past practices that go against state mandates for waste reduction and diversion. The board has plans for the county to hire two full-time Solid Waste Coordinators, one designated for residential programs, special projects, and educational program development, the other to coordinate programs involving business and industry. The Solid Waste Coordinators will work with the Knoxville Recycling Coalition, waste haulers, and other recycling companies to achieve common goals in education.

Source reduction will be integrated into the existing system by using the talents of retired TVA engineers and the training of UT CIS.

The recycling program will be integrated into the existing system by more fully utilizing capacities of local processors of paper, aluminum, and other metals. Additional materials will



**NOTES:**

- a 1995 projected waste tonnages were used from Table 4-1.
- b Quantities are from 1995 target in Table 4-1.

Figure ES.2  
**Final System Configuration**  
 KNOX COUNTY WASTE PLANNING REGION

be added to the county convenience center recycling program. More partnerships in recycling will be sought with local businesses and media.

Collection and transportation is a strong element of the existing system, with private haulers handling most of the waste either by subscription or through the city contract. The city also has a transfer station and the county has convenience centers. The county will add a tire storage facility by January 1995. The region proposes to continue landfilling the waste that could not be reduced, recycled, composted, or diverted for the 10-year planning period.

Collection of HHW will be integrated with the existing system through environmental education programs conducted by the UT Agricultural Extension Service, Ijams Nature Park, and others.

After this solid waste management plan is approved, work will begin to implement new programs for improved solid waste management that are described in this plan. The county will transition from the system planning to the program implementation phase, which has distinct management needs, challenges, and hurdles. To ensure successful implementation of programs, the county will need to conduct implementation-level planning, budgeting, feasibility analysis, and analysis of program-specific design parameters for many programs described in the plan prior to their implementation. This is necessary because of the ever-evolving dynamics in a solid waste system that renders even the best solid waste management plan only a snapshot in time. Just a few of the changing parameters that affect the county's ability to successfully implement the recommended programs include the following:

- Changing materials markets
- Changing processing technologies
- Private sector collection, transfer, and recycling initiatives
- Variable participation rates
- Changing system economics

For these reasons new programs, particularly waste reduction and recycling programs, will often be implemented on a pilot program basis, then refined before full implementation. Likewise, if the feasibility analysis or pilot program results indicate that a program recommended in this plan is no longer likely to help improve solid waste management in Knox Region, the region may discontinue that program and focus on resources elsewhere. All programs will be implemented with the aim of achieving the goals stated in this plan.

## **5.2 New Services**

Residents will soon be able to recycle cardboard and paper at the convenience centers and take used oil and antifreeze to the city's Boyd Street Transfer Station. A waste exchange will be developed that consists of a county-coordinated service that enables businesses with a waste to contact other businesses that may use that waste as a feedstock.



### **5.3 New Facilities**

Two new convenience centers for the east and northeast portions of the county are proposed and will offer the same types of recycling as the other centers. The county must also establish a tire storage facility, which, if combined with one of the new convenience center locations, could result in cost savings. Additional staff are budgeted for these facilities.

A pallet recycling facility is also included in the plan. If a facility cannot be initiated through private enterprise, the county possibly could develop a facility that utilizes penal farm labor.

### **6.0 Implementation Schedule**

The proposed implementation schedule presented in Table ES-1 represents a summary of the combined schedules for each element of the plan. The complete implementation schedule is found in Table 11-1, and is provided in more detail for the first half of the planning period.

### **7.0 Estimated Ten-Year System Costs**

The estimated 10-year system costs are provided in Table ES-2. These costs include salaries for the new positions, new and replacement equipment, and public education materials.

### **8.0 Allocation of Responsibilities**

The institutional structure established to implement the plan consists of the Regional Planning Board and two implementing bodies, Knox County Government, and the City of Knoxville. The Regional Planning Board is responsible for plan modifications, the five-year plan update, annual reports, and oversight to ensure that major milestones of the plan are being met.

Knox County is responsible for the operation of its convenience centers and a tire storage facility, coordination of workplace waste reduction efforts with TVA and UT CIS, and public education in the county school system.

The City of Knoxville is responsible for collection within its corporate limits, contract oversight of the yard waste mulching and composting facility, operation of its transfer station, recycling at city Super Centers, and some public education efforts.

The Town of Farragut will be responsible for measuring the yard waste its employees chip and distribute to residents or use in parks. The data will be submitted to Knox County for inclusion in diversion totals.

The private sector is responsible for disposal at the Class I Landfill, the Class IV Landfills, as end users in some recycling markets, and as active recyclers.

**Table ES-1**  
**Summary of Implementation Schedule for Knox County Solid Waste Planning Region**

Fiscal Year	Task	Target Date
1993/1994	<ol style="list-style-type: none"> <li>1. Schedule UT CIS Waste Reduction Workshop.</li> <li>2. Select site for tire storage facility.</li> <li>3. Work with city, recycling coalition, UT Agricultural Extension Service to initiate backyard composting program.</li> <li>4. Design and construct tire storage facility.</li> <li>5. Coordinate county participation in city's contracted yard waste operation.</li> <li>6. Establish at least two business focus groups.</li> <li>7. Perform feasibility study for HHW permanent collection facility.</li> <li>8. Conduct Illegal Tire Survey.</li> <li>9. Develop "Green Pages" section for phone books.</li> <li>10. Feasibility study of franchise collection system within the county.</li> </ol>	<ol style="list-style-type: none"> <li>1. 02/23/94</li> <li>2. 03/01/94</li> <li>3. 04/01/94</li> <li>4. 06/01/94</li> <li>5. 06/30/94</li> <li>6. 06/30/94</li> <li>7. 06/30/94</li> <li>8. 06/30/94</li> <li>9. 06/30/94</li> <li>10. 06/30/94</li> </ol>
1994/1995	<ol style="list-style-type: none"> <li>1. Immediate hiring of all staff necessary for plan implementation.</li> <li>2. Seek grant for educational program.</li> <li>3. Institute a home and neighborhood Master Composter education program with UT Agricultural Extension.</li> <li>4. Set up yard waste composting demos at convenience centers.</li> <li>5. Recycling available at all Knox County schools (paper, glass, aluminum, plastic).</li> <li>6. Initiate a landfill site suitability search for a Class I landfill in Knox County.</li> <li>7. Assess user fee system for convenience centers.</li> <li>8. Negotiate variable can rate for haulers providing service to county residents.</li> <li>9. Begin encouraging large generators to submit solid waste reduction plans</li> <li>10. Begin waste exchange program for business and industry.</li> <li>11. Negotiate ban of C&amp;D debris from Chestnut Ridge Landfill.</li> <li>12. Design and construct eighth convenience center.</li> <li>13. Design and construct HHW facility.</li> </ol>	<ol style="list-style-type: none"> <li>1. 07/01/94</li> <li>2. 07/01/94 (after plan is approved)</li> <li>3. 07/31/94</li> <li>4. 08/31/94</li> <li>5. 08/31/94</li> <li>6. 12/01/94</li> <li>7. 12/30/94</li> <li>8. 01/01/95</li> <li>9. 01/01/95</li> <li>10. 02/01/95</li> <li>11. 02/28/95</li> <li>12. 04/01/95</li> <li>13. 06/30/95</li> </ol>
1995/1996	<ol style="list-style-type: none"> <li>1. Decision on long-term landfill plans in Knox County.</li> <li>2. Select site for ninth convenience center.</li> <li>3. Establish Adult Education Program.</li> <li>4. Hold 25% news event at landfill.</li> <li>5. Purchase cardboard baler.</li> <li>6. Design and construct ninth convenience center.</li> <li>7. Renovate existing transfer station.</li> </ol>	<ol style="list-style-type: none"> <li>1. 09/01/95</li> <li>2. 09/30/95</li> <li>3. 12/31/95</li> <li>4. 12/31/95</li> <li>5. 03/31/96</li> <li>6. 04/01/96</li> <li>7. 06/30/96</li> </ol>
1996/1997	<ol style="list-style-type: none"> <li>1. Purchase new transportation vehicles for transfer station modification.</li> <li>2. Begin implementation of new collection system.</li> </ol>	<ol style="list-style-type: none"> <li>1. 07/31/96</li> <li>2. 01/02/97</li> </ol>
1997/1998	<ol style="list-style-type: none"> <li>1. Have signed contract for waste disposal.</li> </ol>	<ol style="list-style-type: none"> <li>1. 07/01/97</li> </ol>

**Table ES-1  
Summary of Implementation Schedule for Knox County Solid Waste Planning Region**

Fiscal Year	Task	Target Date
1994/1995 through 2003/2004	1. Collect recycling operating data, problem waste data, and transportation and collection data and submit to Regional Solid Waste Planning Board.	1. 01/31
	2. Submit Annual Report to state.	2. 03/01
	3. Submit Annual Report to Office of Cooperative Marketing.	3. 03/01
	4. Conduct Illegal Tire Survey.	4. 06/30
	5. Place public service announcements (PSAs), newsletter stories, news releases.	5. Ongoing
	6. Ongoing education.	6. Ongoing

Table ES-2

Projected 10-Year Budget and Funding Plan  
Comprehensive Solid Waste Management Plan

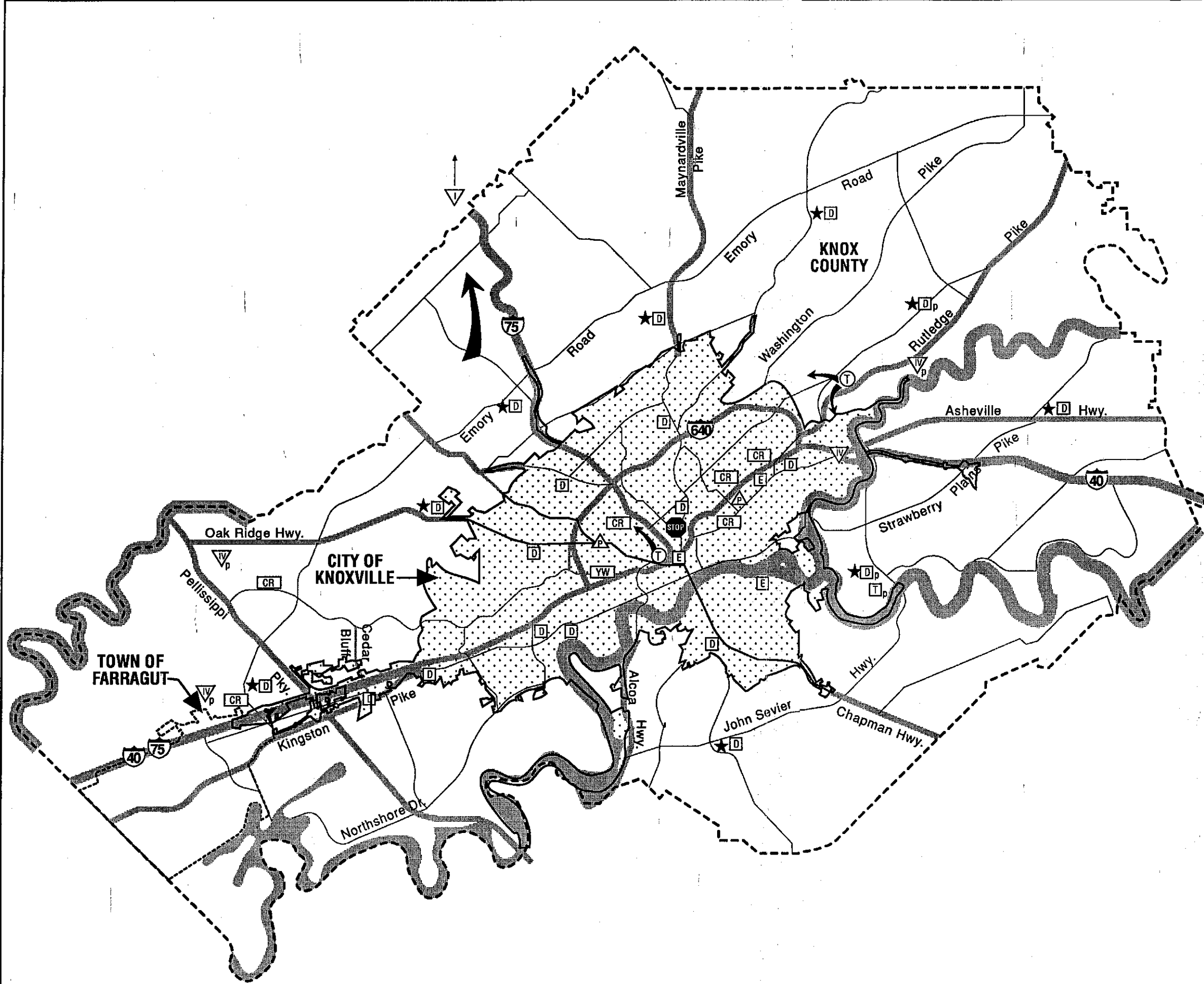
	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
<b>Operating Revenues</b>											
Property Taxes (a)	\$7,413,762	\$9,025,921	\$9,133,910	\$8,944,208	\$9,249,093	\$9,580,998	\$9,970,042	\$10,248,852	\$10,674,492	\$11,282,149	\$11,591,419
Refuse Collection Fees (b)	49,000	49,000	49,000	49,000	49,000	49,000	49,000	49,000	49,000	49,000	49,000
Landfill Fees (c)	72,003	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
Sale of Materials (d)	0	0	0	0	0	0	0	0	0	0	0
Other	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
<b>Total</b>	<b>\$7,549,765</b>	<b>\$9,159,921</b>	<b>\$9,267,910</b>	<b>\$9,078,208</b>	<b>\$9,383,093</b>	<b>\$9,714,998</b>	<b>\$10,104,042</b>	<b>\$10,382,852</b>	<b>\$10,808,492</b>	<b>\$11,416,149</b>	<b>\$11,725,419</b>
<b>Operating Expenditures</b>											
Waste Collection and Transportation	\$3,624,181	\$3,887,057	\$4,094,610	\$4,219,408	\$4,324,293	\$4,446,198	\$4,573,242	\$4,711,052	\$4,854,692	\$5,004,349	\$5,158,619
Recycling	1,103,250	1,430,260	1,439,260	1,439,260	1,439,260	1,439,260	1,444,260	1,439,260	1,439,260	1,439,260	1,439,260
Disposal	2,512,192	2,615,000	2,795,000	2,998,000	3,198,000	3,423,000	3,665,000	3,926,000	4,208,000	4,511,000	4,836,000
Public Information	0	82,680	82,680	17,680	17,680	17,680	17,680	17,680	17,680	17,680	17,680
Problem Wastes	17,143	133,786	263,860	263,860	263,860	263,860	263,860	263,860	263,860	263,860	263,860
<b>Total</b>	<b>\$7,256,765</b>	<b>\$8,168,783</b>	<b>\$8,675,410</b>	<b>\$8,938,208</b>	<b>\$9,243,093</b>	<b>\$9,589,998</b>	<b>\$9,964,042</b>	<b>\$10,357,852</b>	<b>\$10,783,492</b>	<b>\$11,236,149</b>	<b>\$11,715,419</b>
<b>Net Operating Income</b>	<b>\$293,000</b>	<b>\$991,138</b>	<b>\$592,500</b>	<b>\$140,000</b>	<b>\$140,000</b>	<b>\$125,000</b>	<b>\$140,000</b>	<b>\$25,000</b>	<b>\$25,000</b>	<b>\$180,000</b>	<b>\$10,000</b>
<b>Non-Operating Revenues</b>											
State Grants	\$25,000	\$42,500	\$42,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total</b>	<b>\$25,000</b>	<b>\$42,500</b>	<b>\$42,500</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Non-Operating Expenditures</b>											
Waste Collection and Transportation	\$268,000	\$460,000	\$635,000	\$140,000	\$140,000	\$125,000	\$140,000	\$25,000	\$25,000	\$180,000	\$10,000
Recycling	0	0	0	0	0	0	0	0	0	0	0
Disposal	0	50,000	0	0	0	0	0	0	0	0	0
Public Information	0	0	0	0	0	0	0	0	0	0	0
Problem Wastes	50,000	523,638	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>\$318,000</b>	<b>\$1,033,638</b>	<b>\$635,000</b>	<b>\$140,000</b>	<b>\$140,000</b>	<b>\$125,000</b>	<b>\$140,000</b>	<b>\$25,000</b>	<b>\$25,000</b>	<b>\$180,000</b>	<b>\$10,000</b>
<b>Net Non-Operating Income</b>	<b>(\$293,000)</b>	<b>(\$991,138)</b>	<b>(\$592,500)</b>	<b>(\$140,000)</b>	<b>(\$140,000)</b>	<b>(\$125,000)</b>	<b>(\$140,000)</b>	<b>(\$25,000)</b>	<b>(\$25,000)</b>	<b>(\$180,000)</b>	<b>(\$10,000)</b>
<b>Net Income</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

SOURCE: Summarized from Tables 5-4, 6-3, 8-3, 9-5, and 10-1.

NOTES:

- a. The majority of revenue requirements are expected to continue to be met by Knoxville and Knox County property tax revenues.
- b. Knoxville currently receives refuse collection fees of about \$50,000 per year. These revenues are assumed to continue.
- c. Knoxville currently receives landfill fees of about \$70,000 per year. These revenues are assumed to continue.
- d. Revenues from the sale of recyclable materials are reflected in reduced payments for waste disposal at the landfill.

Private industry will also accept more waste reduction responsibility following the waste reduction seminars and individual waste audits.



**LEGEND**

- Knox County Boundary
- City of Knoxville Boundary
- Town of Farragut Boundary
- Interstate Highway
- River
- Street
- Convenience Center
- Transfer Station
- Permitted Class I Landfill (Municipal Solid Waste)
- Permitted Class IV Landfill
- Subscript Small p Indicates a Planned Facility
- Processing Center for Recyclables
- Drop-off Recycling Center (city centers, convenience centers)
- Commercial Recyclers
- End Use Industry that Purchases Recovered Materials Directly
- Municipal House to House Collection Areas
- Indicates Waste Flow Patterns
- Education Sites
- City Yardwaste Composting
- Tire Storage Facility

NORTH  
  
NOT TO SCALE

Figure ES.3  
**Regional Solid Waste System (1994-2003)**



## Chapter 1 Description of the Municipal Solid Waste Region

### 1.1 General Description

The "region" referred to in this plan is Knox County. The City of Knoxville (1990 population: 165,121) and the Town of Farragut (1990 population: 12,793) are the two incorporated areas within the county.

Knox County spans 508.5 square miles and has a 1990 population of 335,749. The regional base map is shown in Figure 1-1 (located at the end of this chapter). The county's major physiographic features and land uses are described below.

#### 1.1.1 Topography

Knox County is characterized by a series of parallel ridges and valleys that run northeast to southwest. The slopes of the ridges often exceed 25 percent, with steeper grades on the north facing slopes. The ridges greatly affect the county's development pattern by presenting significant obstacles to utility and road extensions. The ridges have thus been instrumental in shaping urban growth.

#### 1.1.2 Geology

The county's geological formations are composed of sedimentary rock (limestone, dolomite, and shale) that has weathered for many years. Water-soluble rock, such as limestone, has been etched away to form the valleys. The dissolved limestone has also resulted in the formation of sinkholes, caves, and underground water channels. Such areas, known as "karst terrain," cover much of Knox County's valley landscape.

#### 1.1.3 Rivers and Streams

The county is drained by four significant rivers: the French Broad, the Holston, the Tennessee, and the Clinch. Additionally, more than 30 creeks drain the valleys. The rivers, like the ridges, have shaped transportation and development patterns (both within and beyond the county). With the exception of the downtown area, only a few bridges cross the rivers. This lack of crossways isolates various sections of the county, especially in the French Broad and Holston drainage basins.

#### 1.1.4 Transportation

The pattern of the highway system is shaped by the ridges, rivers, and the position of the central business district (CBD). The interstate highways (I-40 and I-75) are the foremost transportation corridors. Various arterial highways radiate from the CBD, the historic center of Knox County's development. These highways lead to neighboring cities in

adjacent counties and provide passage across the state. North-south transportation is constrained by the ridges and rivers; east-west routes running down each valley are far more numerous. The condition and efficiency of arterial roads vary markedly. Most of the older U.S. primary routes (the radial highways that stem from Knoxville) accommodate heavy truck and automobile traffic. Many other roads that function as arteries, such as Emory Road and Northshore Drive, are two-lane facilities with limited capacity. The spacing of arterials is quite varied—several miles often separate major roads—which is of special concern with routes leading north to south.

The two major railroads that serve Knox County are the CSX and Norfolk-Southern. Rail lines lead north, south, and west. Barges can be accommodated on the Tennessee River upstream to the "Forks of the River" where the French Broad and Holston join.

### **1.1.5 Land Use**

A review of the entire area indicates that roughly 55 percent of the land is agricultural, forest, or otherwise undeveloped. Summaries of land uses are presented in Tables 1-1 and 1-2.

In examining developed land, residential uses predominate (62 percent). Commercial and industrial uses, two other significant generators of solid waste, compose about 7 percent of developed areas.

## **1.2 Rationale for Region Formation**

Knox County was organized as a single-county region. The East Tennessee Development District (ETDD) Knox County Needs Assessment had recommended Anderson County as Knox County's logical regional partner because Anderson County is the host of Chestnut Ridge Landfill, Knox County's primary Class I disposal facility. Since issuance of the ETDD report, Chestnut Ridge has become the only such disposal facility for Knox and other counties. Another facility, Shoat Lick Hollow Landfill, owned and operated by Chambers Development within Anderson County, has been permitted but has not begun receiving solid waste at this writing.

Anderson County officials declined when they were contacted about regionalizing Knox County for planning purposes. The two main reasons were (1) the county already was a reluctant host to two landfills and (2) regionalizing with Knox County offered no real economic incentive. In November 1992, Anderson County voted to become a single-county region.

No other counties adjacent to Knox County expressed interest in regionalizing with Knox County. Regionalization would be an enormous change for these communities with a history of "going it alone." All 16 counties in the ETDD chose to remain single-county regions.



**Table 1-1  
Knox County Land Use  
All Acreage (Both Developed and Undeveloped)**

Land Use	Acres	Percent of Total
Agricultural, forestry, and vacant <sup>a</sup>	186,835.3	55.3
Residential	87,082.8	25.8
Commercial (office and retail)	6,867.1	2.0
Industrial, warehousing, and mining	2,753.1	0.8
Public, quasi-public, and recreation	15,027.0	4.4
Transportation, communications, and utilities	1,176.6	0.3
Water	10,795.0	3.2
Other uses, sites under construction, and rights of way	27,463.1	8.2
<b>Total</b>	<b>338,000.0</b>	<b>100.0</b>

<sup>a</sup>Includes single-family residential on parcels of 10 acres or more.

Source: 1993 Tax Assessor's records for all categories except water [that acreage comes from previous Metropolitan Planning Commission (MPC) land use studies].

**Table 1-2  
Land Use  
Developed Land and Land Committed to Public/Quasi-Public Purposes<sup>a</sup>**

<b>Land Use Category</b>	<b>Acres</b>	<b>Percent of Total</b>
Residential	87,082.8	62.0
Commercial (office and retail)	6,867.1	4.9
Industrial, warehousing, and mining	2,753.1	2.0
Public, quasi-public, and recreation	15,027.0	10.7
Transportation, communications, and utilities	1,176.6	0.8
Other uses, sites under construction, and rights-of-way	27,463.1	19.6
<b>Total</b>	<b>140,369.7</b>	<b>100.0</b>

<sup>a</sup>This does not include the 1,844 acres of single-family acreage on parcels of 10 acres or more that were considered as agricultural/vacant land in MPC and use study.

Source: 1993 Tax Assessor's records for all categories except water (that acreage comes from previous MPC land use studies).

Since passing the deadline for establishing regions, Knox County and its planning board have taken the lead in organizing discussions with other counties and regions about various solid waste management options, such as scrap tire management, household hazardous waste (HHW), and yard waste composting. Knox County hosted an all-day seminar on July 10, 1993, for elected officials and planning board members from all 16 ETDD counties and regions. At the conclusion of the meeting, the regional chairs agreed to discuss mutual concerns on a regular basis. In late 1993, Knox County hosted the first such meeting.

Knox County also has offered to use its purchasing power and warehouse capabilities to assist regional counties and cities in increasing their procurement of recycled products. Since these potential developments were discussed, several counties and regions have shown interest in regionalizing with Knox County if state law is amended. Knox County has recommended this legislative course to its own delegation.

### 1.3 Institutional Structure

The Knox Solid Waste Planning Region Board is composed of 11 members. All of the board members are Knox County residents; none of the members serve as elected or appointed officials of local governments. Most of the members responded to a news story printed in a local newspaper in which the region issued a call for volunteers to serve on a solid waste planning board. More than 90 individuals showed interest in being a member of the board. Several members were recruited to bring particular talents or expertise to the process, such as financial planning or civic networking experience. One member was selected by the Mayor of Knoxville to satisfy the provision of TCA 68-211-813(b)(1) for representation of municipalities that offer solid waste collection services. As a courtesy, one board appointment was offered to the Town of Farragut, which has a significant population but offers no collection. The board includes a business person, a systems analyst, the director of the local homebuilder's association, a retired certified public accountant, an organic farmer/nutritionist, a public relations person, an agricultural extension home economist, two educators (one retired), a retired engineer, and a University of Tennessee (UT) professor.

The decision to select private residents instead of elected or appointed officials was made after considerable research. Solid waste organizations in Virginia, Pennsylvania, Maryland, and New York were contacted for their opinions about what kind of board worked best. The five contacted unanimously agreed that a residents-only board was the most productive. Because private residents are not elected, the rationale is that they reflect the needs and wishes of the general population—minus any concern about financial decisions affecting an election.

One of the duties of the Knox County Solid Waste Planning Region Board is to assist in development of this Knox County Solid Waste Management Plan. The board will continue to monitor implementation of the plan and the required updates over the 10-year planning

period. This involves regular meetings with and requests for information from city and county agencies related to solid waste, public services, and financing.

The Knox Region uses a different approach with its Regional Advisory Committee. The committee is comprised of those who initially volunteered for the board, but remained to help after board selections were made. The Regional Solid Waste Board decided to give the members of the Regional Advisory Committee an active role in preparing the plan. With assistance from residents, board members formed committees to research and write chapters of the plan. A core of approximately 45 of the original 90 persons continue active participation. New members are added as they show interest in committing to the task. In addition to individual mailings to all Regional Board and Citizen Committee members, all meetings are announced in local newspapers and are open to the public.

## **1.4 Demographics**

The 1993 population of the Knox County Region is estimated to be 341,130, based on the U.S. Census Bureau projections from the 1990 census. The average population density is 670.8 people per square mile, which is an increase from the 660.3 people per square mile cited in the ETDD Knox County Needs Assessment (1992).

Knox County's population grew by 5 percent between 1980 and 1990, increasing by 16,055 persons. The local economy (see Chapter 2) is anticipated to remain balanced. This should contribute to slow but steady population growth; correspondingly, overall waste generation should steadily increase.

The numbers of housing units (17,805) increased during the 1980s more than the population increased. Most units were added in areas beyond the city, particularly to the west and the north. Correspondingly, population growth (almost 26,000 persons) was most pronounced in areas beyond the city limits. The city's population declined by 5 percent primarily because of decreases in household size. Growth in the numbers of households likely will continue to rise significantly in areas beyond the current city limits.

Areas beyond the city limits are particularly important when examining programs for waste collection, recycling, and reduction because significant growth in households and population can be anticipated.

## **1.5 Economic Activity**

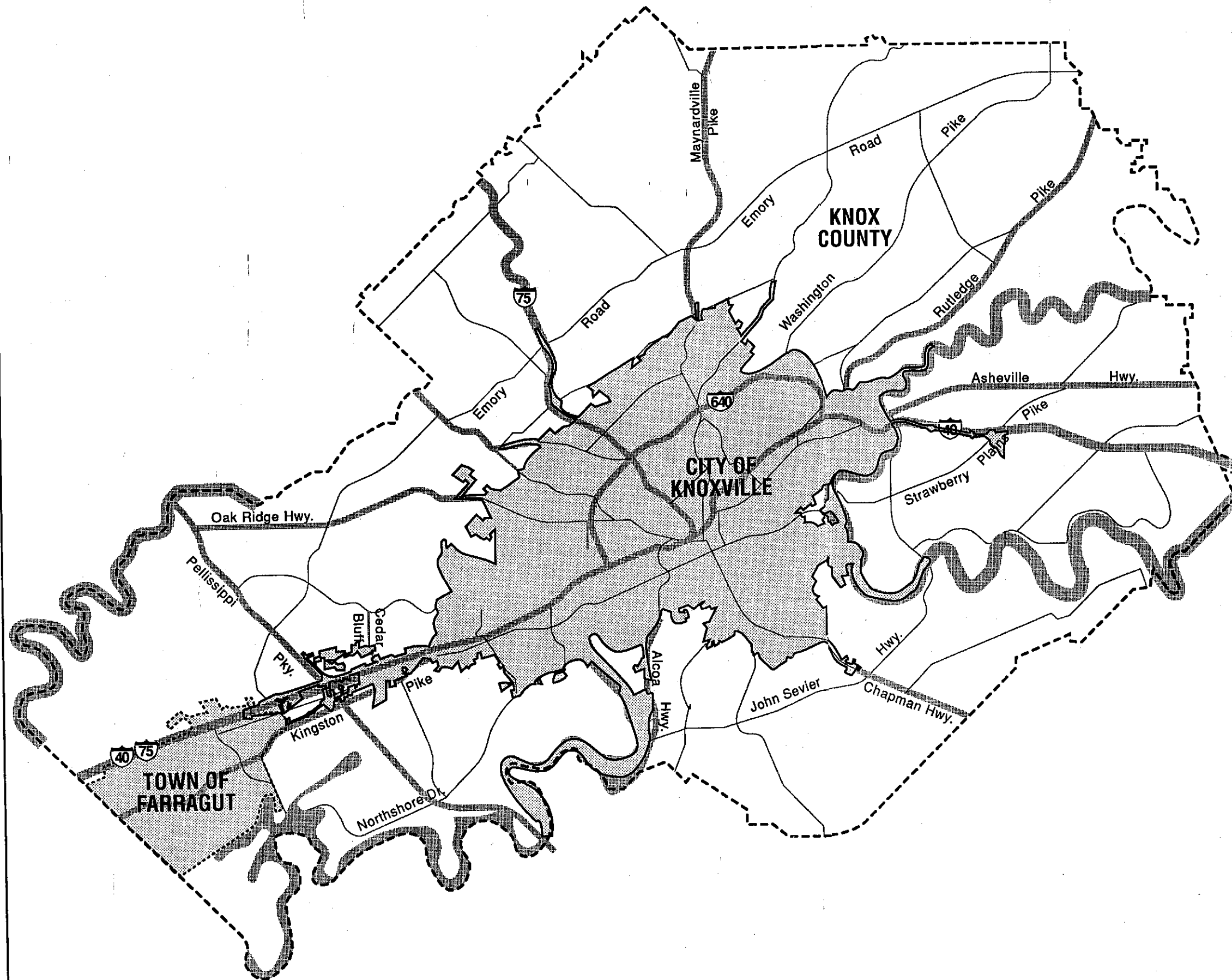
The proportions of each sector of the Knoxville Metropolitan Statistical Area (MSA) economic base are very similar to that of the state and the nation (Table 1-3). The proportional relationships are anticipated to remain similar, which will help in sustaining slow but steady economic growth. The high percentage of government employees in the region will help stabilize the business cycles.

Table 1-3  
 Non-Agricultural Jobs for Knoxville MSA<sup>a</sup>, Tennessee, and United States in 1986, 1989, 1990 and 1991

	1986		1989		1990		1991	
	1,000s	Percent	1,000s	Percent	1,000s	Percent	1,000s	Percent
<b>Knoxville MSA<sup>a</sup></b>								
Manufacturing	51.0	21.1	52.0	19.7	51.1	18.9	50.9	18.7
Non-Manufacturing	191.0	78.9	212.5	80.3	218.7	81.1	221.3	81.3
<b>Tennessee</b>								
Manufacturing	490.5	25.4	523.8	24.3	520.3	23.7	501.2	23.0
Non-Manufacturing	1,439.3	74.6	1,629.6	75.7	1,671.8	76.3	1,673.5	77.0
<b>United States</b>								
Manufacturing	18,965	19.1	19,612	18.1	19,111	18.4	18,426	17.8
Non-Manufacturing	80,560	80.9	88,970	81.9	85,014	81.6	85,163	82.2

<sup>a</sup>Knoxville MSA: Anderson, Blount, Grainger, Jefferson, Knox, Sevier, and Union Counties.

No major shifts in the economy are anticipated to result in any booms or busts. No new major facilities that would impact growth (manufacturing plants, airports, highways, etc.) are anticipated. The growth of business, industry, and government should be relatively balanced, thus resulting in incremental growth in waste generation.



- LEGEND**
- Knox County Boundary
  - City of Knoxville Boundary
  - Town of Farragut Boundary
  - Interstate Highway
  - River
  - Street
  - Municipality



**NOT TO SCALE**

Figure 1.1  
**Regional  
 Base Map**



**KNOX SOLID WASTE PLANNING REGION**

**Chapter I**  
**Forms**



<b>Table I-1</b> <b>Population and Population Density</b> <b>Knox County Region</b>			
<b>County</b>	<b>Area (Sq. Miles)</b>	<b>1993 Estimated Population</b>	<b>Estimated 1993 Average Density Population per Sq. Miles</b>
Knox	508.5	341,130	646
<b>Regional Total</b>	<b>508.5</b>	<b>341,130</b>	<b>646</b>

Source: Metropolitan Planning Commission.

<b>Table I-2</b> <b>Distribution of the Total Regional Population</b> <b>by Urban and Rural Areas</b> <b>Knox County Region</b>				
<b>Knox County</b>	<b>Urban</b>		<b>Rural</b>	
	<b>Population</b>	<b>Percent</b>	<b>Population</b>	<b>Percent</b>
1990 Census	261,720	78.0	74,029	22.0
1993 Estimate	267,105	78.3	74,025	21.7

Note: Based on the "rate of shift" to urban population that was extrapolated in the East Tennessee Development District Needs Assessment.

**Table I-3**  
**Distribution of the Total Regional Population by Sex and Age**  
**Knox County Region**

Age	Total	Male	Percent	Female	Percent
Zero through 4	21,426	10,932	51.0	10,494	49.0
5 through 17	53,686	27,405	51.0	26,281	49.0
18 through 44	152,753	75,390	49.4	77,363	50.6
45 through 64	65,194	30,641	47.0	34,553	53.0
65+	42,690	15,999	37.5	26,691	62.5
<b>Regional Total</b>	<b>335,749</b>	<b>160,367</b>	<b>47.8</b>	<b>175,382</b>	<b>52.2</b>

Source: 1990 Census.

**Table I-4**  
**Distribution of Regional Population by Education**  
**(Age ≥ 25)**  
**Knox County Region**

Knox County	Number	Percent
Less than 9th Grade	23,831	10.9
9th through 12th Grade, no diploma	31,671	14.5
High School Graduate	59,953	27.5
Some College, no degree	40,105	18.4
Associate Degree	10,550	4.8
Bachelor's Degree	33,697	15.4
Post Graduate/Professional Degree	18,514	8.5
<b>Regional Total</b>	<b>218,321</b>	<b>100.0</b>

Source: 1990 Census.

**Table I-5  
Distribution by Type of Housing and Occupancy  
Knox County Region**

	<b>Total Units</b>	<b>Occupied</b>	<b>Owner</b>	<b>Rented</b>
<b>Single Family</b>				
1, Detached	93,797	89,256	76,026	13,230
1, Attached	3,152	2,931	2,087	844
<b>Multi-Family</b>				
2	3,482	3,074	499	2,575
3 to 4	5,376	4,780	289	4,491
5 to 9	9,007	7,797	259	7,538
10 to 19	9,507	8,403	165	8,238
20 to 49	5,464	4,699	201	4,498
50 or more	4,575	4,329	86	4,243
Institutional <sup>a</sup>	NA	NA	NA	NA
Mobile Home/Trailer	7,848	7,143	5,149	1,994
Other <sup>b</sup>	1,374	1,227	608	619
<b>Regional Total</b>	<b>143,582</b>	<b>133,639</b>	<b>85,369</b>	<b>48,270</b>

<sup>a</sup>The number of persons in institutional housing in 1990 was 12,349; that includes dorms, correctional facilities, nursing homes, mental hospital, and juvenile institutions.

<sup>b</sup>Emergency shelters and group quarters (non-institutional).

Source: 1990 Census.

Table I-6 Regional Population Projections 1994 to 2003 Knox County Region										
Regional Population 1993: 341,130										
Knox County	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Regional Total	342,924	344,718	346,519	348,319	350,120	351,920	353,721	355,178	356,635	358,092
Source: Knoxville/Knox County MPC Projection using year 2000 fertility rates.										

Table I-7 Basic Economic Information for Knox County Region in 1991						
Knox County	1991 Population	MSA County (yes/no)	Total Employment	Total Earnings	Per Capita Income	Percent Population Below the Poverty Line
Regional Total	337,498	yes	158,820	\$3,344,898,630	\$17,382	14.1
Sources: 1991 population estimate (MPC using projected 2,000 fertility rates); population below poverty line (1990 census); other information (Tennessee Department of Employment Security).						

Table I-8 Number of Employees by Sector and Percent of Total Employment Knox County Region								
Knox County	Manufacturing	Construction	Trade	Finance	Service	Govt.	Transportation Pub. Utilities	Other
Regional Total	23,029	7,147	44,946	6,035	42,246	28,270	6,670	477
Percent	14.5	4.5	28.3	3.8	26.6	17.8	4.2	0.3
Source: Tennessee Department of Employment Security.								

**Table I-9  
Agricultural Employees  
Knox County Region**

<b>Knox County</b>	<b>Employment</b>
<b>Regional Total</b>	<b>908</b>
Source: Tennessee Department of Employment Security.	

**Table I-10  
Regional Summary of Major Generators of Commercial and  
Non-Hazardous Industrial Waste in 1990  
Knox County Region**

Firms by Employment Size Class										
Industry	All Firms	1 to 4	5 to 9	10 to 19	20 to 49	50 to 99	100 to 249	250 to 499	500 to 999	1,000+
Total	10,176	5,125	2,154	1,394	944	320	187	31	13	8
Agric. Services, Forestry, Fisheries	114	66	31	14	2	--	1	--	--	--
Mining	25	7	--	6	6	5	1	--	--	--
Construction	815	411	169	115	82	29	7	1	1	--
Manufacturing	488	173	80	65	76	41	31	14	7	1
Transportation, Communications, Utilities	371	170	62	55	49	13	16	4	1	1
Wholesale Trade	998	420	211	165	150	36	15	1	--	--
Retail Trade	2,618	1,072	686	421	273	103	58	5	--	--
Finance, Insurance, Real Estate	884	517	203	89	56	11	7	1	--	--
Services	3,511	1,954	702	457	250	82	51	5	4	6
Source: U.S. Department of Commerce, <i>County Business Patterns</i> , 1990, Tennessee.										

**Table I-11  
Regional Summary of Institutions Housing More than 100 Persons  
Knox County Region**

<b>Institution</b>	<b>Type</b>	<b>Number of Students, Inmates, and Residents</b>	<b>Estimated Quantity of Waste<sup>a</sup> (if available)</b>
Knoxville Community Service Center	Penal	140	128 tpy
Knox County Jail	Penal	215	196 tpy
Knox County Penal Farm	Penal	315	287 tpy
Johnson Bible College	College	400	365 tpy
UT	College	7,000	19,000 tpy
Knoxville College	College	726	662 tpy
<b>County Totals</b>		<b>8,796</b>	<b>20,638 tpy</b>

<sup>a</sup>5 lb per person per day.  
Source: Waste Management, Inc.

**Table I-12**  
**Summary Data on Major Health Facilities in Knox County Region**  
**(Larger than 50 Beds)**

Facility	Location	No. of Beds	Estimated Quantity of Solid Waste Tons Per Yr.	Infectious Waste Management	
				Onsite/ Offsite	Method of Treatment
East Tennessee Baptist Hospital	Knoxville	425	1,241	Offsite	Incineration
East Tennessee Children's Hospital	Knoxville	121	353	Offsite	Incineration
Fort Sanders Regional Medical Center	Knoxville	575	1,680	Onsite	Incineration and Autoclave-- Browning-Ferris Industries (BFI) Landfills
Fort Sanders Park West Medical Center	Knoxville	350	1,022	Onsite	Incineration
Lakeshore Mental Health Institute	Knoxville	299	873	Offsite	Incineration
St. Mary's Medical Center, Inc.	Knoxville	531	1,550	Onsite	Incineration (excess hauled by BFI)
UT Medical Center	Knoxville	602	78	Offsite	Incineration--National Medical Waste hauls to Nashville
Brakebill Nursing Homes, Inc.	Knoxville	222	203	Offsite	Incineration
Farragut Health Care Center	Knoxville	103	94	Offsite	Incineration--BFI hauls to Chattanooga
Hillcrest Central and North (merged)	Knoxville	490	514	Onsite	Autoclaved--BFI hauls to landfill
Hillcrest South	Knoxville	110	100	Onsite	Autoclaved--BFI hauls to landfill
Hillcrest West	Knoxville	300	274	Onsite	Autoclaved--BFI hauls to landfill
Knoxville Convalescent Center	Knoxville	139	127	Offsite	Incineration--BFI hauls to Memphis
Knoxville Health Care Center	Knoxville	175	160	Offsite	Incineration
Northhaven Health Care Center	Knoxville	93	85	Offsite	Incineration--Waste Management, Inc., hauls to North Carolina
Serene Manor Medical Center	Knoxville	73	72	Offsite	Incineration--Waste Management, Inc., hauls to North Carolina
Shannondale Health Care Center	Knoxville	200	183	Offsite	Incineration--BFI hauls
<b>County Totals</b>		<b>4,814</b>	<b>8,609</b>		

Source: Estimates from Waste Management, Inc.

Notes:

16 lb per person per day--Hospitals.  
5 lb per person per day--Nursing Homes.

**Table I-13**  
**Sources of Local Revenue Utilized in the Region for Solid Waste Management in FY 1993**

City/County	Property Tax	Local Sales Tax	Wheel Tax	Local Waste Fee	User Fee/ Tipping Fee	Other <sup>a</sup>
Knox County	\$1,384,901	\$0	\$0	\$0	\$0	\$35,095
Knoxville	4,894,783	0	0	0	126,209	53,516
Farragut	2,500	0	0	0	0	0
<b>Total</b>	<b>\$6,282,184</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$126,209</b>	<b>\$88,611</b>

<sup>a</sup>Other revenues include operating transfers and other local revenues for the county, and grants, donations, and interest for the city.  
Source: Knox County and Knoxville Departments of Finance, and budget documents.

**Table I-14**  
**Tax Bases for Types of Local Tax Revenue Utilized for Solid Waste Management in FY 1993**

City/County	Total Assessed Value	Property Tax Revenue	Sales Subject to Sales Tax	Sales Tax Revenue	Number of Registered Vehicles	Wheel Tax Revenue
Knox County	\$3,787,060,945	\$42,370,176	UA	\$4,331,715	UA	UA
Knoxville	1,467,264,427	48,309,175	UA	18,557,083	NA	NA
Farragut	UA	UA	UA	UA	NA	NA
<b>Total</b>	<b>\$5,254,325,372</b>	<b>\$90,679,351</b>	<b>\$0</b>	<b>\$22,888,798</b>	<b>\$0</b>	<b>\$0</b>

Notes:  
UA = Unavailable  
NA = Not Applicable  
Source: Departments of Finance, City of Knoxville and Knox County.



## Chapter 2 Analysis of the Current Waste Management System for the Region

This chapter presents an analysis of the current waste management system in Knox County. The purpose of the analysis is to identify county waste management needs based on the information gathered in the Knox County Solid Waste Needs Assessment (ETDD, 1992).

With few exceptions, data (except cost information) that are analyzed are those in Chapters III, V, VI, VII, VIII, and IX in the Knox County Needs Assessment. These data depict the waste management system as it currently exists and were collected for calendar year 1991 by the ETDD. Efforts were made to update and verify the Needs Assessment data, primarily through direct telephone calls to the business to obtain current information.

Current revenue and cost figures were taken from Knox County and City of Knoxville records for the appropriate fiscal years.

### 2.1 Waste Stream Characterization

The data used to characterize the present waste stream in Knox County were collected for calendar year 1991 and are based on calculations using the Environmental Protection Agency (EPA) default percentages for the average national composition. This characterization is not based on a field waste sorting and weighing program over a year's period, which would be required for a more complete and accurate analysis of the waste stream. Because of the urban nature of Knox County, no differences are expected to exist between the national composition of waste materials and the county composition.

According to data included in Chapter III of the Knox County Needs Assessment, Knox County generated 389,900 tons of solid waste in 1991 based on accurate written records kept by operators from July 1 through December 31. Quantities for the first 6 months of the year were estimated. Thirty percent of the total is residential waste, 36 percent is commercial or industrial, and 25 percent is nonhazardous industrial. Nine percent of the total is classified as "special waste"; that is, nonhazardous industrial wastes that may be buried in a landfill if the generator receives consent from the operator and the state. The composition of the waste stream by materials in Knox County, based on the national percentages, has been provided in Table II-4.

### 2.2 Waste Collection and Transportation Systems

Waste collection services are provided by municipalities or private hauling companies for a total of approximately 75,000 residences and 13,835 businesses in the Knox Region. Collection services are in the form of convenience centers and door-to-door collection.

Waste collection services are provided by the City of Knoxville through a contract with Browning-Ferris Industries (BFI) for all city residents and small commercial clients. Knox County does not contract with any private companies to provide collection services. Commercial and industrial businesses, including public institutions within Knoxville and Knox County, are required to contract privately with a waste collection service for the removal of their solid waste. A breakdown of the types of collection services is provided in Table 2-1.

### **2.2.1 Door-to-Door Collection Service**

The City of Knoxville provides door-to-door collection for 60,135 households and small commercial clients, as presented in Table 2-1. Knox County residents have the option of contracting privately with one of four solid waste collection and disposal companies. The distribution of door-to-door waste collection services between Knoxville and private companies is presented in Table 2-1.

### **2.2.2 Convenience Centers**

Knox County operates and maintains seven convenience centers that accept household garbage, bagged leaves and yard clippings, appliances, carpeting, and furniture. These centers serve approximately 64,264 residences (ETDD, 1992) and accept an estimated 25,500 tons per year (tpy) of solid waste from residential and commercial generation. Waste collected at the convenience center locations is transported to the Chestnut Ridge Landfill for ultimate disposal. The average distance traveled by a resident to deliver waste to a convenience center is estimated to be 5 miles.

The estimated volume of waste received at each of the seven convenience centers, based on the number of containers and a 52-week operation schedule, is provided in Chapter 5. The convenience centers also accept numerous materials for recycling, as is described in Chapter 5. The locations of these centers are shown in Figure 2-1, which appears at the end of this chapter.

### **2.2.3 Underserved Areas**

Two sectors of the county, the east and northeast, have been identified as unserved by either contract waste service or convenience centers.

The Knox County Needs Assessment estimates that 20,685 tons of waste are uncollected. These wastes are presumably disposed of outside the collection system, such as in roadside dumps and as litter or disposed of in another region.

**Table 2-1  
Waste Collection Distribution in Knox County Region**

<b>Waste Collection</b>	<b>Number of Residences Served</b>	<b>Number of Businesses Served</b>
<b>Municipal:</b>		
City of Knoxville <sup>a</sup>	47,000 <sup>c</sup>	13,135 <sup>b</sup>
<b>Private Companies:</b>		
Diamond-T Waste Services	100 <sup>b,c</sup>	
Fay Portable Buildings	on call	
Tennessee Waste Movers	4,000 <sup>c</sup>	100 <sup>c</sup>
BFI	19,000 <sup>c</sup>	
Waste Management, Inc.	4,500-5,000 <sup>c</sup>	500-600 <sup>c</sup>
<sup>a</sup> Through contract with BFI. <sup>b</sup> Data from Needs Assessment, 1992. <sup>c</sup> Data verified with private companies, February, 1994.		

## **2.3 Source Reduction and Recycling Systems**

Recycling collection services and programs are currently provided by Knoxville, Knox County, four private-for-profit organizations, and two non-profit organizations. In addition, a number of businesses and industries have initiated major recycling programs. All of these programs are detailed in the Knox County Needs Assessment. Table 2-2 summarizes these activities and the materials recovered.

## **2.4 Waste Processing, Composting, and Waste-to-Energy/Incineration Systems**

### **2.4.1 Waste Processing**

An operating transfer station is located on Boyd Street in the City of Knoxville. Approximately 100 tons of waste are collected and transported to the station daily from both the residential and commercial sectors. Some recycling is incorporated at this facility; however, most waste is collected, compacted, and transported to the Chestnut Ridge Landfill.

Domermuth Soil Treatment, located on Rutledge Pike, thermally processes contaminated soil. Contaminants are vaporized and burned. Moist soil is dried to dust and disposed of at Chestnut Ridge Landfill.

Reclamation Services, Inc., processes and markets plastics and glass for Pepsi Cola and other businesses.

Fay Transfer Station processes unsegregated waste brought to the facility by Fay Portable Buildings. Waste is separated, reduced, and compacted and hauled to Chestnut Ridge Landfill.

### **2.4.2 Composting Facilities**

An existing composting facility will close after January 1994. The City of Knoxville is currently reviewing proposals for the operation of a composting facility designed to handle almost 30,500 tpy of brush and leaves for a period of 3 to 10 years. It is expected that the new facility will be operational by the end of 1994.

### **2.4.3 Waste-to-Energy/Incineration Systems**

No such facilities exist in the region and none are planned. However, several health care facilities have onsite incineration of medical waste, as described in Table III-4.

**Table 2-2  
Current Recycling Programs in Knox County**

Name	Materials Recovered	Quantity Recovered
Greater Knoxville Beautification Board <sup>a</sup>	Glass Plastic Aluminum	0.8 tpy 1.2 tpy 8.5 tpy
Knox County <sup>a</sup>	Newsprint Glass Plastic Steel Cans Aluminum Other	564 tpy 222 tpy 46 tpy 194 tpy 4 tpy 38 tpy
Knoxville <sup>a</sup>	Newsprint Glass Plastic Aluminum	1,473 tpy 489 tpy 68 tpy 22 tpy
BFI <sup>a</sup>	Newsprint Glass Plastic Steel Cans Aluminum	2,600 tpy 204 tpy 252 tpy 276 tpy 76 tpy
Knoxville Recycling Coalition <sup>a</sup>	Office/Computer Newsprint Glass Aluminum	500 tpy 41 tpy 45 tpy 1.2 tpy
Project 2000 <sup>a</sup>	Newsprint Glass Plastic Aluminum	0.2 tpy 0.62 tpy 0.05 tpy 0.03 tpy
Witherspoon Plastics <sup>a</sup>	Polymers	114 tpy
Lay Packing Company <sup>a</sup>	Aluminum Cans > <sup>b</sup> Cardboard > Scrap Metals >	185 tpy
Bike Athletic <sup>a</sup>	Aluminum Cans > Cardboard > Office Paper > Cloth Scraps > Silver > Oil Wood Pallets Empty Drums Batteries	500 tpy 10 gal./yr 1,500/yr 70/yr 2/yr
Rail Bearing Service <sup>a</sup>	Cardboard > Chrome > Wood Pallets >	950/yr
Knoxville Sports Unlimited <sup>a</sup>	Cardboard	200/tpy

**Table 2-2  
Current Recycling Programs in Knox County**

Name	Materials Recovered	Quantity Recovered
Matsushita Electronic Components	Cardboard > Computer Paper > Aluminum Cans > Scrap Metal > Wood Pallets	345 tpy 1,200/yr
Toyota of Knoxville <sup>a</sup>	Cardboard > Scrap Metal > Paint Thinner > Batteries > Oil Filters > Freon™ > Naphtha > Oil Antifreeze	470 tpy 12,000 gal./yr 1,800 gal./yr
Eagle Distributing <sup>a</sup>	Cardboard > Computer Paper > Aluminum Cans > Scrap Metal >	15 tpy
Knoxville News-Sentinel Company <sup>a</sup>	Office Paper > Newsprint Waste > Silver Film > Electronic Chips > Oil	3,235 tpy 1,000 gal./yr
Aqua Chem, Inc.	Oil and Machine Coolant > Scrap Metal > Paint Waste	217 tpy
East Tennessee Baptist Hospital	Office Paper > Computer Paper > Aluminum Cans >	156 tpy
Computational Systems	Office Paper > Computer Paper > Aluminum Cans >	7 tpy
ATC Management Corporation	Oil Coolant Freon™ > Oil Filters >	2,000 gal./yr 1,000 gal./yr 10 tpy
Silver Furniture Company <sup>a</sup>	Aluminum Cans > Office Paper > Computer Paper > Cardboard > Wood > Wood Pallets >	10 tpy
Rohm and Haas	Scrap Metal	100 tpy

**Table 2-2  
Current Recycling Programs in Knox County**

Name	Materials Recovered	Quantity Recovered
St. Mary's Medical Center	Office Paper > Computer Paper > Aluminum Cans > Cardboard >	84 tpy
Multimedia WBIR, Inc.	Office Paper > Computer Paper >	11 tpy
Ft. Sanders Regional Medical Center	Office Paper > Computer Paper > Aluminum Cans > Cardboard > Scrap Metal >	300 tpy
Ted Russell Ford <sup>a</sup>	Oil Paint Thinner Solvent	300 gal./month 55 gal./month 45 gal./month
Flakt, Inc.	Office Paper > Computer Paper > Aluminum Cans >	5 tpy
Cobble Personnel <sup>a</sup>	Paper > Aluminum Cans >	1 tpy
Knox Porcelain Corporation <sup>a</sup>	Oil	100 gal./month
Regas Brothers, Inc.	Oil > Cardboard >	200 tpy
Coca Cola <sup>a</sup>	Glass > Cardboard > Aluminum > Plastic Oil	200 tpy
Colonial Freight <sup>a</sup>	Oil Batteries Tires	200 gal./month 12/yr 150/yr
Ronald McDonald House <sup>c</sup>	Aluminum Cans	42 tpy
Enterprise Oil	Oil	302,500 gal./yr
Necessary Oil	Oil	35,885 gal./yr
Industrial Oil	Oil	N/A

<sup>a</sup>Primary source of information is from Knox County Needs Assessment (1992). Footnoted facilities were contacted in February 1994 to verify and update the recyclable quantities.

<sup>b</sup>> Indicates that these materials are included in the total of the Quantity Recovered column.

<sup>c</sup>Some of this total may already be included in totals reported by individual businesses.

Notes: tpy = tons per year      N/A = Not Available

## **2.5 Disposal Facilities – Landfills and Balefills**

With some limited exceptions, as described in Chapter 8 of this plan, all solid waste that is generated in Knox County and that must be disposed of in a Class I Landfill is hauled to the Chestnut Ridge Landfill in Anderson County. This facility has sufficient capacity to accommodate such waste through the 10-year horizon included in this plan. Existing or planned landfills are identified in Table 2-3 and existing landfills are shown in Figure 2-1 (located at the end of this chapter).

## **2.6 Costs of Current System**

Table 2-4 provides a summary of costs incurred by Knox County and the City of Knoxville for solid waste management during fiscal year (FY) 1993. The Town of Farragut relies on Knox County for solid waste services. Figure 2-2 is a bar chart that portrays the expenditures of Knox County and the City of Knoxville on solid waste management for three cost categories: landfill, convenience centers, and collection.

## **2.7 Revenues**

Table 2-5 presents a summary of the sources of revenues that support the current solid waste management system. Figure 2-3 is a pie chart that graphically illustrates the relative share of each major category of revenues.

## **2.8 Public Information and Education Programs**

Both the City of Knoxville and Knox County have a solid waste management organization within the respective governments. John Evans is Director of Knox County Solid Waste Department and Ed Umbach is Director of the City of Knoxville Office of Solid Waste. Public information programs are being developed for each of these organizations; however, no central source or listing of educational programs currently exists.

Some schools include recycling and reduction activities as part of their science and environmental curricula. A number of community environmental organizations, local businesses, and others include recycling and waste reduction education as part of their activities. Other public information programs include Glad Bag-A-Thon, River Rescue Clean-Up, Trash Bash, Keep America Beautiful Week, Adopt-A-Highway, Christmas in the City, Adopt a Spot, and Christmas TreeCycling.

Locations of schools or other community-based educational programs are shown on Figure 2-1 (located at the end of this chapter).



**Table 2-3  
Existing and Planned Landfills in the Knox Region**

<b>Landfill Name</b>	<b>Class</b>	<b>Approximate Life Remaining</b>	<b>Tons/Day (tpd)</b>	<b>Comments</b>
Chestnut Ridge	I	13.8 years	1,300	In Anderson County
Yarnell Road	IV			In permitting
Armstrong Burnett	IV	N/A		
Fay Portable	IV			In permitting
Brad and Park	IV			In permitting

**Table 2-4  
Costs Incurred by Knox County and Municipalities  
for Solid Waste Management in FY 1993**

<b>Cost Category</b>	<b>Knox County</b>	<b>City of Knoxville</b>	<b>Town of Farragut</b>
Collection/Transportation	\$102,406	\$2,716,109	\$2,500
Convenience Centers	548,806		
Intermediate Processing			
Recycling	73,121	999,906	
Problem Wastes			
Landfill Services	632,647	1,297,607	
<b>Total</b>	<b>\$1,356,980</b>	<b>\$5,013,622</b>	<b>\$2,500</b>

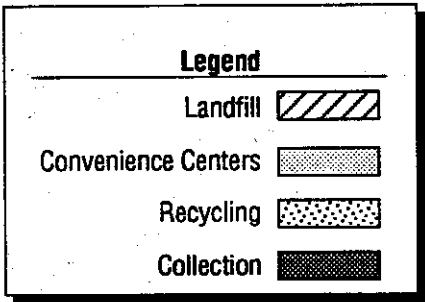
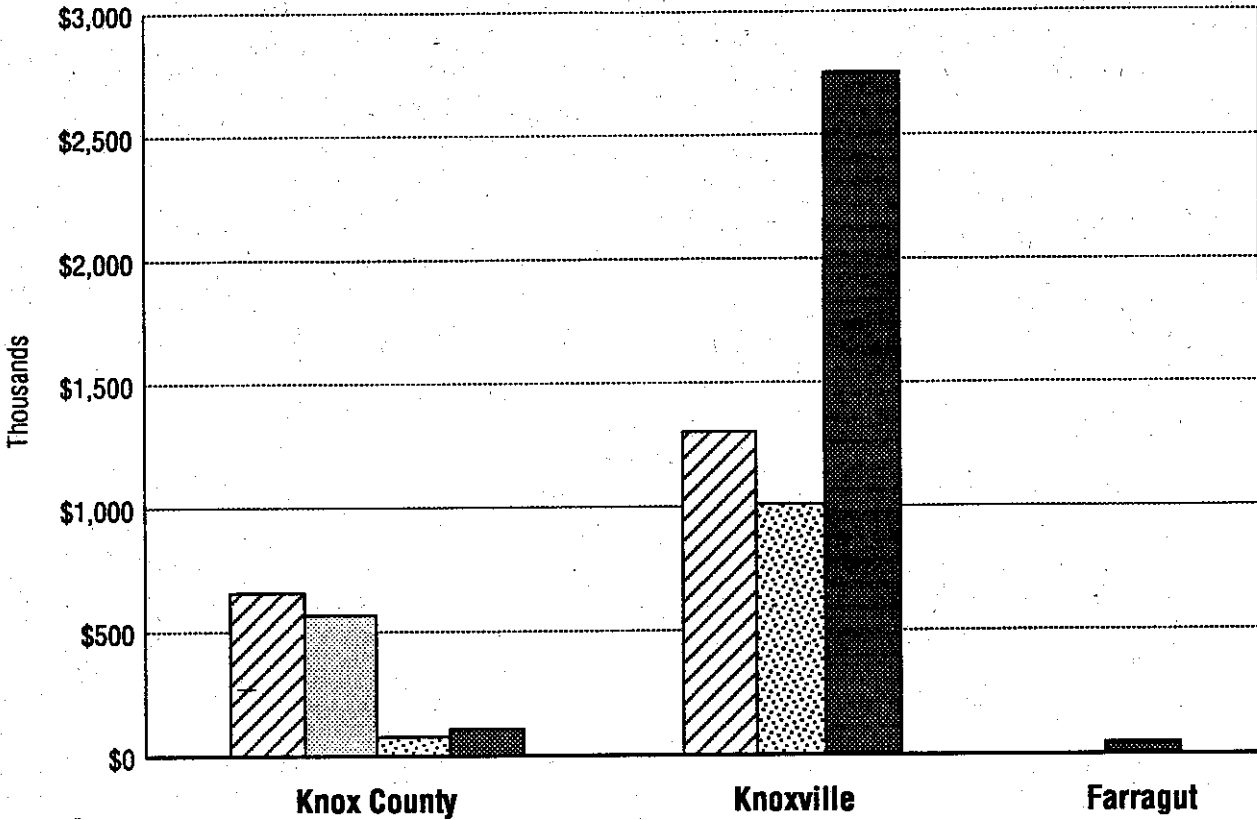


Figure 2.2  
**Components of Current Solid Waste Management System Cost**  
Knox County and Municipalities - FY1993



**Table 2-5  
Sources of Revenue for Knox County and Municipalities  
for Solid Waste Management in FY 1993**

Type of Revenue	Base <sup>a</sup>	Rate <sup>b</sup>	Revenue Yield <sup>c</sup>	% for Solid Waste <sup>d</sup>	\$ for Solid Waste <sup>e</sup>
<b>Knox County</b>					
Property Tax	\$3,787,060,945	0.0112	\$42,370,176	3.3	\$1,384,901
Tipping Fees		NA	0	NA	0
Other Revenues <sup>f</sup>		NA	35,095	100.0	35,095
<b>Knoxville</b>					
Property Tax	\$1,467,264,427	0.0329	\$48,309,175	10.1	\$4,894,783
Tipping Fees		NA	126,209	100.0	126,209
Other Revenues		NA	53,516	100.0	53,516
<b>Farragut</b>					
Property Tax	UA	UA	UA	UA	\$2,500
Tipping Fees		UA	UA	UA	0
Other Revenues		UA	UA	UA	0
<b>Totals</b>					
Property Tax					\$6,282,184
Tipping Fees					126,209
Other Revenues					88,611
<b>Total</b>					<b>\$6,497,004</b>

\*From Table I-14.

<sup>b</sup>Estimated by dividing Revenue Yield by Tax Base.

<sup>c</sup>Property tax yield from Table I-14, tipping and other fees from Table I-13.

<sup>d</sup>Estimated by dividing dollars for solid waste by revenue yield.

<sup>e</sup>Property tax revenues are from Table I-13, tipping and other revenues are product of "Revenue Yield" and "% for Solid Waste."

<sup>f</sup>Other revenues include transfers and other local revenues for the county, and grants, donations, and interest for the city.

Notes:

UA = Unavailable

NA = Not Applicable

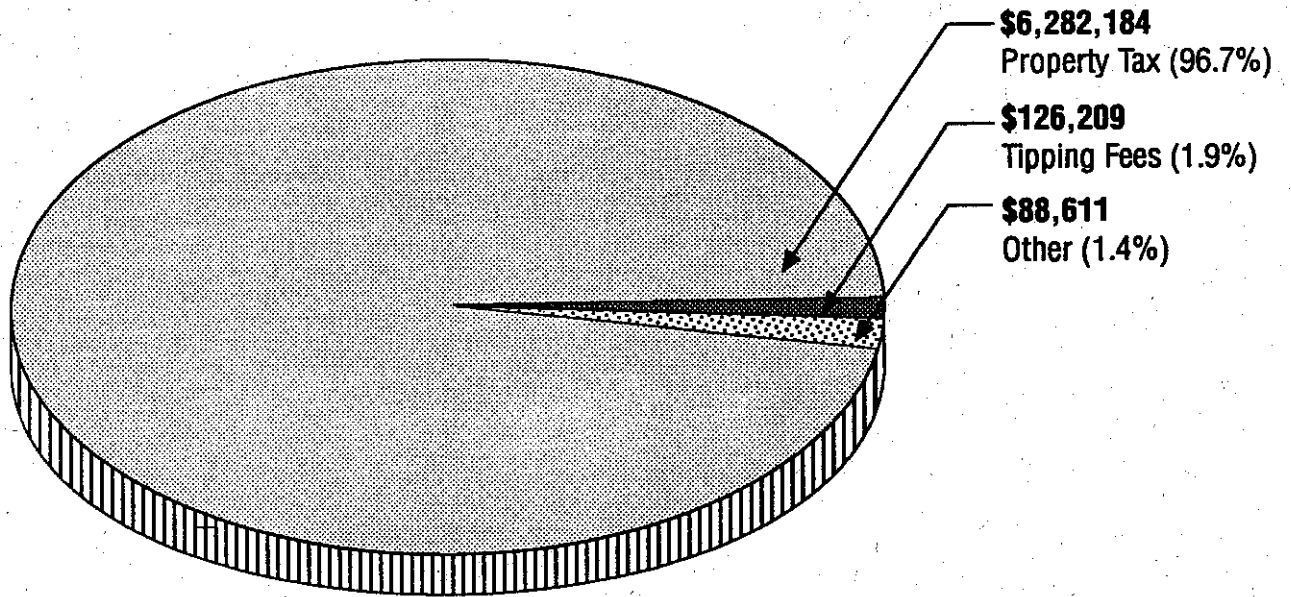


Figure 2.3  
**Sources of Revenue for  
Solid Waste Management**  
Knox County and Municipalities - FY 1993



## **2.9 Problem Wastes**

Existing and future plans for county problem waste management are discussed in detail in Chapter 10 of this plan.

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

While much activity is already devoted to the proper management of solid waste in Knox County, a totally integrated system does not exist.

#### **2.10.1 Strengths of the Current System**

The Class I disposal capacity presents no problems for the short-term. The following is a list of the strengths of the current disposal system in Knoxville and Knox County.

- A mechanism already exists for receiving some types of HHW at convenience centers.
- The city is committed to a composting facility.
- The county will participate in composting as appropriate.
- Strong recycling centers operated by Knoxville and Knox County already exist.
- High interest from citizens exist.
- BFI recycles within the city and in certain county subdivisions.
- A market exists for recycled materials. One major end user, Kimberly Clark, can reuse all of the recycled office paper generated in Knox County.
- Intermediate processors such as Knox Recycled Fibers, Pallet Exchange, and scrap dealers provide possibilities for greater recycling.
- Knox County has more than the minimum number of convenience centers, all of which meet state standards.
- Every citizen has access to some type of collection system.
- A full door-to-door solid waste collection system is operating within the city.
- A transfer station is centrally located within the city.

- The Chestnut Ridge Landfill in Anderson County has 10+ years left until closure.

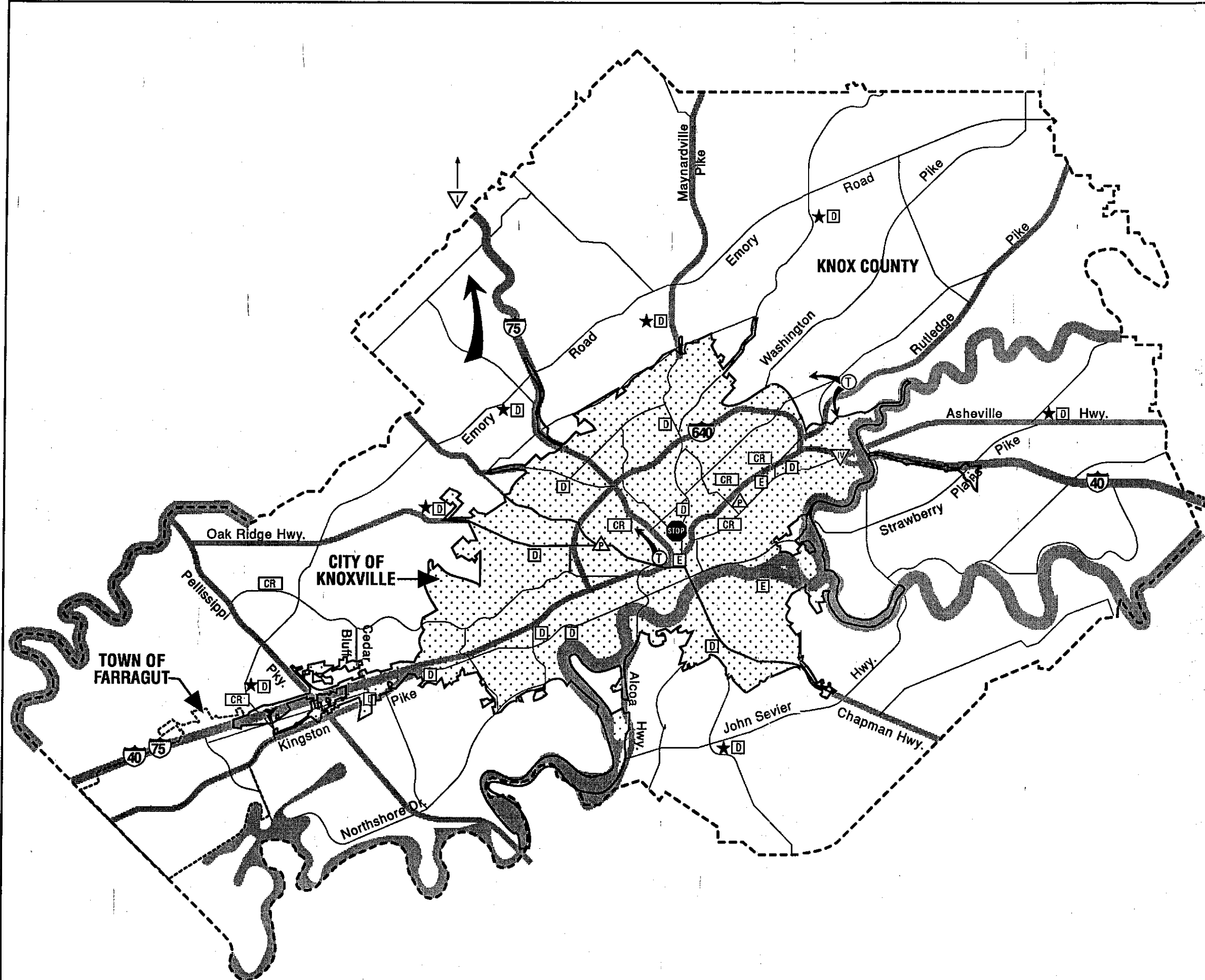
## **2.10.2 Weaknesses of the Current System**

Although the current disposal system is sufficient for the short term, it has some weaknesses that need to be addressed. Some of the weaknesses include the following:

- A county-wide yard waste collection and composting program does not currently exist.
- A concentrated waste reduction effort does not exist in the commercial sector.
- A need exists for an integrated and extended HHW disposal program.
- A permanent tire collection, storage, and shredding program needs to be developed.
- Illegal dumping of HHW and construction and demolition (C&D) waste continues in parts of the county.
- Knox County is relying on one Class I Landfill that has a limited life expectancy (12 to 18 years).
- Knox County does not own or control a Class I Landfill inside or outside the region.
- Two areas of Knox County need more efficient convenience center service. Problems with convenience centers include the size, the current separation of wastes system, the accessibility, the layout, and the aesthetics.
- Training programs for convenience center personnel are needed.
- The coverage of waste collection (door-to-door service) is inconsistent beyond the city limits.
- A portion of the C&D waste is being sent to the Class I Landfill.
- A need exists for intermediate (collection/transfer) sites for small generators of C&D waste.
- Operational C&D landfills within Knoxville need to be integrated into the disposal system.

- The provisions for reporting data on waste management are inadequate from both generators and disposal facilities.
- A formal system of full cost accounting for revenues and expenses associated with solid waste has not been developed.
- Problems exist with separation of materials for reduction and recycling. These include the following:
  - Most citizens and businesses do not bother to recycle
  - Many do not realize the environmental benefits of recycling
  - Most businesses see no economic benefit from recycling efforts
- The public and local businesses are unaware and lack an understanding of the following issues:
  - Waste reduction
  - State mandated goals
  - Costs associated with waste management
  - Natural resource protection and waste management
  - Types of landfills (classes) and the different materials they can accept
- Formal means for coordinating waste management efforts with surrounding counties do not exist.





**LEGEND**

- Knox County Boundary
- City of Knoxville Boundary
- Town of Farragut Boundary
- Interstate Highway
- River
- Street
- Convenience Center
- Transfer Station
- Permitted Class I Landfill (Municipal Solid Waste)
- Permitted Class IV Landfill
- Processing Center for Recyclables
- Drop-off Recycling Center (city centers, convenience centers)
- Commercial Recyclers
- End Use Industry that Purchases Recovered Materials Directly
- Municipal House to House Collection Areas
- Indicates Waste Flow Patterns
- Education Sites

NORTH  
 NOT TO SCALE

Figure 2.1  
**System Map for  
 Base Year  
 (1993)**



**Chapter II  
Forms**

OROKC2/066.WP5

Table II-1 Quantity of Solid Waste Received for Disposal/Incineration in Calendar 1991			
County	Tons Disposed	Population (1991)	Waste Disposed Per Capita (tons)
Knox	389,900 <sup>a</sup>	337,498 <sup>b</sup>	1.16
<b>Regional Total</b>	<b>389,900</b>	<b>337,498</b>	<b>1.16</b>

<sup>a</sup>This figure represents the total amount of solid waste collected for treatment and disposal in 1991 for the entire county, including the cities and municipalities. Solid waste exported to another county for disposal by any entity of the county is included in this figure. Likewise, solid waste imported to this county for disposal by any entity outside the county is not included in this figure.

<sup>b</sup>MPC estimate (based on model using 2000-year fertility rates).

Table II-2 Origin of Regional Solid Waste in 1991 Tons Per Year					
County	Residential	Institutional/Commercial	Non-Hazardous Industrial	Special <sup>a</sup>	Other
Knox	116,970	140,364	97,475	35,091	—
<b>Regional Total</b>	<b>116,970</b>	<b>140,364</b>	<b>97,475</b>	<b>35,091</b>	<b>—</b>

<sup>a</sup>"Special waste" as defined by Tennessee Solid Waste Regulations: "In general, special wastes are non-hazardous industrial solid wastes which may be buried in a landfill provided the generator receives consent of the operator and the state."

Table II-3 Acceptance of Certain Categories of Solid Waste for Disposal or Incineration										
Knox County Facility	Yard Waste (clippings, leaves, and grass)		Sewage Sludge		Construction and Demolition		Tires		White Goods	
	Y/N	Qty	Y/N	Qty	Y/N	Qty	Y/N	Qty	Y/N	Qty
Chestnut Ridge	Y	58,696	Y	200	Y	28,000	Y	475	Y	1
Twin Oaks	Y	10,000	N	—	Y	5,640	N	—	N	—
<b>Regional Total</b>		<b>68,696</b>		<b>200</b>		<b>33,640</b>		<b>475</b>		<b>1</b>

<sup>a</sup>White goods are discarded major appliances such as washing machines, dryers, refrigerators, etc.

**Table II-4  
Description of the Waste Stream by Materials**

<b>Waste Category</b>	<b>National Percent</b>	<b>Calculated Regional Tons</b>
Paper and Paperboard	40.0	155,960
Glass	7.0	27,683
Ferrous Metals	6.5	25,344
Aluminum	1.4	5,459
Other Non-Ferrous Metals	0.6	2,339
Plastics	8.0	31,192
Rubber and Leather	2.5	9,748
Textiles	2.1	8,188
Wood	3.6	14,036
Food Waste	7.4	28,853
Yard Waste	17.6	68,622
Miscellaneous Inorganic Waste	1.5	5,848
Other	1.7	6,628
<b>Total Municipal Solid Waste</b>	<b>100.0</b>	<b>389,900</b>

Table II-5 Unmanaged Waste*				
County	Potential Waste Generation 1991 (tpy)	Actual Waste Disposal 1991 (tpy)	Unmanaged Waste 1991 (potential/actual) (tpy)	Percent of Potential Total
Knox	369,215	389,900	-20,685	-5.6
<b>Regional Total</b>	<b>369,215</b>	<b>389,900</b>	<b>-20,685</b>	<b>-5.6</b>

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

Table II-6 Operating and Planned Composting Facilities in the Region					
County	Facility Location	Tons of Waste Processed/Year	Composted Materials		
			Yard Waste	Sewage Sludge	Solid Waste
<b>Existing: None</b>					
<b>Planned:</b>					
City-owned	CCA Site	+30,000	X		
<b>Regional Total</b>		<b>+30,000</b>	<b>X</b>		

Note: CCA = Compost Corporation of America.

Table II-7 Municipal Solid Waste Incinerators or Waste-to-Energy Facilities in the Region				
County	Facility Location	Design Capacity (tpy)	Current Use (tpy)	Anticipated Operating Life of Facility
<b>Operating Facilities</b>				
None				
<b>Planned Facilities</b>				
None				

Table II-8 Existing Municipal Solid Waste Landfills in the Region					
County	Name of Landfill	Location	Permitted Capacity (acres)	Current Rate of Waste Accepted (tpd)	Remaining Capacity (tons)
Knox	N/A				
<b>Regional Total</b>					

Table II-9 Existing Landfills Expected to Close Before 2003				
County	Location	Current Use (tpd)	Current Annual Use (tpy)	Anticipated Date of Closure
Knox	N/A			

Table II-10 Planned Expansions and Planned New Facilities That Will Operate for Ten Years or More							
County	Proposed Facility		Location	When Will Capacity be Available	Permitted Capacity Sought (acre)	Design Rate of Waste Disposed (tpd)	Potential Expansion (Yes/No)
	Expan.	New					
Knox	N/A						
<b>Planned New Regional Capacity</b>							
N/A = Not applicable.							

Table II-11 Total Existing and Planned Capacity in the Region at the Close of the Next Ten Years			
Fiscal Year	Tons		
	Existing	Planned	Total
1993 through 2003	0	0	0

## Chapter 3 Growth Trends, Waste Projections, and Preliminary System Structure

The purpose of this chapter is to establish probable growth trends and evaluate the quantity of solid waste the county will be required to manage in each year of the 10-year planning period (1994 through 2003). Information established in Chapter IV of the Knox County Needs Assessment (ETDD, 1992) will be used to help define the solid waste management demand. To evaluate this 10-year planning period, projections were extended an additional two years. Population projections in this chapter were modified from the Knox County Solid Waste Needs Assessment and are based on projections developed by the Knoxville/Knox County Metropolitan Planning Commission (MPC) (see Chapter 1).

Knox County will evaluate possible components of an integrated solid waste management plan based on population growth trends and solid waste demand for the 10-year planning period. The county will also estimate the amount of the waste stream that might be handled by each component and evaluate how effective each component will be.

### 3.1 Projections of Solid Waste Generation

The projection of solid waste generation for Knox County is based on information in Chapter IV of the Knox County Needs Assessment and population projections provided by the Knoxville/Knox County MPC. This information was used to develop projected annual waste generation through the year 2003. These updated projections are included in Tables III-1 through III-4 and are updated from the Knox County Needs Assessment projections.

### 3.2 Preliminary System Design

An integrated solid waste management system involves the integrated use of several alternatives for managing solid waste. The alternatives to be evaluated for Knox County are source reduction, source diversion, recycling, composting, and landfilling. It is estimated that 75 percent of the total projected quantity of solid waste will be landfilled, 20 percent will be diverted or composted, and the remaining 5 percent recycled or reduced at the source. A description and function of each of these components are discussed in the following paragraphs.

#### 3.2.1 Source Reduction

Source reduction is a program that minimizes the generation of waste. This method of waste management can be practiced by businesses, industry, and individual households within the county and city. A properly implemented source reduction program reduces the



amount of solid waste sent to Class I Landfills, thereby extending the operating life of the facility. Source reduction also decreases the need for labor- and energy-intensive recycling programs. The key to being able to implement effective source reduction programs is public education. An effective county-wide source reduction education program would include some or all of the following components:

- Joint efforts with businesses and industries to reduce waste associated with processing and packaging
- Residential education programs
- Joint efforts with charitable groups that accept reusable items (i.e., in Knox County these include the Goodwill Industries, the Salvation Army, the Council for the Blind, and the Disabled American Veterans)
- Development of county and city waste reduction policies and strategies

To enhance the source reduction education programs, the following educational materials and strategies might be utilized:

- Workshops, training courses, and conferences
- Establishing business and industry focus groups
- Joint efforts with school groups
- Master Composter Program for yard waste
- Videotapes, brochures, and other printed materials
- Community and neighborhood level education efforts
- Media advertising and progress reports
- Tours of waste management facilities by civic organizations and school groups
- Contests and awards
- Speaker's bureau

### **3.2.2 Source Diversion**

Source diversion is a management practice that involves diverting specific components of the waste stream to alternative disposal methods (those other than a Class I disposal

facility), thereby extending the life of Class I Landfills. Source diversion can also reduce the cost of disposal for materials that can be properly diverted. It includes finding other uses for materials or recycling materials so that disposal is not necessary.

The disposal of C&D debris in Class IV Landfills is an example of source diversion presently being implemented Knox County. Currently, one Class IV Landfill is used to divert C&D debris from the Class I Landfills. In addition, Class IV Landfills in surrounding areas are also available to Knox County for disposal of C&D debris. The following is a list of typical C&D debris:

- Wood waste
- Vinyl siding
- Drywall waste
- Shingles
- Carpet and vinyl floor covering
- Styrofoam
- Tile remnants
- Scrap metal
- Brick
- Plastic
- Dirt
- Incidental paper and cardboard
- Rock
- Insulation scraps
- Concrete rubble

Other methods of source diversion are currently being researched in Knox County, such as donating surplus building materials from C&D debris to low-income housing programs and recycling as many of the remaining products as possible. In addition, administrative and/or regulatory controls could be implemented to promote source diversion, recycling, and Class IV Landfill disposal of C&D debris.

### **3.2.3 Composting**

The City of Knoxville contracts with the private sector for the composting of yard waste hauled by city-owned vehicles. Yard wastes are chipped and composted, and then either sold or donated to nonprofit organizations. Future plans in Knox County are to continue composting yard waste and increase the county's participation in the City of Knoxville's composting services.

Practices such as home composting and leaving grass clippings on lawns rather than bagging them as waste will be encouraged by both the county and the city. Services provided by the city and the county such as chipping discarded Christmas trees will also be continued. Furthermore, the county will work with the UT Agricultural Extension Service

to provide education and assistance to Knox County residents wishing to adopt composting and yard waste management techniques.

#### **3.2.4. Recycling**

An expanded recycling program will be implemented to preserve landfill space and conserve energy and natural resources. The factors that will influence the selection of the type of material to be recycled include the following:

- Recyclability of the material
- Value of the material and stability of the end market
- Quantity of the material available from sources within the county
- Ease of identification, separation, and preparation of the material for recycling
- Cost of collection and processing
- Environmental benefit of recycling and removal of the material from the waste stream

Knox County intends to target businesses, industries, and residences for the expanded recycling program further described in Chapters 4 and 6. Materials to be recycled include:

- Newspaper
- Office/computer paper
- Cardboard
- Glass
- Plastics
- Aluminum cans
- Steel cans
- Used motor oil/automotive fluids
- Pallets
- Scrap metal

The City of Knoxville has established five recycling Super Centers and six drop-off centers located at grocery stores in various parts of the city. The Super Centers are staffed with employees from the Goodwill Industries from 9 a.m. through 5 p.m. daily and accept aluminum; steel; green, clear, and brown glass; high density polyethylene (HDPE) and polyethylene terephthalate (PET) plastics; mixed paper; cardboard; and newspaper. Four of the drop-off centers are set up to accept aluminum cans; steel cans; green, clear, and brown glass; HDPE and PET plastics; and newspaper. Two drop-off centers only accept aluminum cans, newspaper, and plastic.

Additional convenience centers will be added to handle the collection of recyclables. Moreover, the City of Knoxville will be providing additional drop-off locations at shopping centers and retail businesses. Specific information regarding the future recycling program and the implementation schedule has been provided in Chapter 6.

### **3.2.5 Landfilling**

Although the main purpose of implementing an integrated solid waste management program is to reduce the quantity of waste requiring landfill disposal, the Chestnut Ridge Class I Landfill in Anderson County will remain an integral component of the waste management system. This Class I Landfill will still be used in handling wastes not managed by the other components of the waste management system.

The Chestnut Ridge Landfill is owned and operated by Waste Management, Incorporated. Knox County uses this facility for its municipal solid waste (Class I) and part of its C&D debris (Class IV). A five-year contractual agreement exists between Knox County and Waste Management, Incorporated, for disposal services. This contract expires in 1995 and a copy is presented in Appendix D.

Chestnut Ridge Landfill accepts waste from Knox County, as well as from private haulers of both Class I and IV waste and from other regional haulers. The estimated remaining disposal capacity of this landfill is estimated to be 13.8 years.

## **3.3 Evaluation Criteria**

The Knox County Solid Waste Planning Region Board has developed evaluation criteria during the process of creating its mission statement and during its preliminary meetings. The criteria will be used to test the acceptability of each system component as it is developed and to test the feasibility of the overall system. The final configuration of the solid waste management system is detailed in Chapter 11 and will reflect the application of these evaluation criteria.

The primary criteria selected by the Solid Waste Regional Board are in agreement with its overall mission to "promote practices which are economically feasible, environmentally sound and comprehensive in scope." They are as follows:

- **Public Acceptability**—Knox County's recent abandonment of the incinerator was done mainly because of public opposition, therefore, the Board has made public acceptability one of the most important criteria.
- **Economics**—As new elements of the plan are proposed, capital, operating, and unit costs will be evaluated to determine if the costs are reasonable compared to the value the elements add to the waste management system. The board is committed to proposing a system the citizens can afford.

- **Environmental Concerns**—The selected alternatives shall meet all federal, state, and local regulations, as well as be implemented in a manner to reduce environmental impact.
- **Availability of Regional Markets**—Markets must be available for composted and recycled wastes. Recycling and composting will have limited success if markets for the material are not available or cannot be developed.
- **Integration with Existing Elements**—Efficiently expanding and integrating new elements with existing systems will be considered to minimize disruption of services.

**Chapter III**  
**Forms**

OROKC2/066.WP5

Table III-1			
County	Total Waste Disposed in FY 1993	Projected Population 1993	Annual per Capita Generation Tons/Person/Year
Knox	394,445 <sup>a</sup>	341,130 <sup>b</sup>	1.16 <sup>c</sup>
Total	394,445 <sup>a</sup>	341,130 <sup>b</sup>	1.16 <sup>c</sup>

<sup>a</sup>Estimate from ETDD Knox County Needs Assessment.  
<sup>b</sup>Estimate based on MPC's projection using year 2000 fertility rates.  
<sup>c</sup>Note: The 1989 figure was 1.01 tpy.

**Table III-2**  
Quantity of Solid Waste Requiring Disposal  
(Using 1991 Generation Rate of 1.16)

County	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Knox	397,792	399,873	401,962	404,050	406,139	408,227	410,316	412,006	413,697	415,387
Total	397,792	399,873	401,962	404,050	406,139	408,227	410,316	412,006	413,697	415,387

**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
Knox	410,818	413,318	415,835	418,367	420,914	423,475	426,052	428,246	430,456	432,682
Knox	410,818	413,318	415,835	418,367	420,914	423,475	426,052	428,246	430,456	432,682

Note: Based on MPC estimate of 3.2 percent composite annual economic growth for Knox County.

**Table III-4**  
Quantity of 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
Knox	348,024	299,905	298,006	296,071	294,101	292,094	290,051	287,694	285,308	282,892
Total	348,024	299,905	298,006	296,071	294,101	292,094	290,051	287,694	285,308	282,892

Tables III-5 (Waste Projections Adjusted for Regulatory Factors), III-6 (Special Factor Adjustments), III-7 (Waste Projections Adjusted for Imports/Exports), and III-8 (Waste Projections Totaled for All Three Adjustments) do not apply to the Knox Region and are omitted from this plan.



## Chapter 4 Waste Reduction

This chapter describes Knox County's waste reduction activities for attaining the 25 percent reduction required by Section T.C.A. 68-211-861(a) of the 1991 Solid Waste Management Act. Source reduction, reuse, recycling, and diversion will be used to reduce the solid waste disposed of at the Chestnut Ridge Landfill in Anderson County and to meet this 25 percent reduction by December 31, 1995.

### 4.1 Establishing the Base Year Quantity

#### 4.1.1 1989 Population and Waste Generation

The Tennessee Department of Environment and Conservation (TDEC) has established 1989 as the base year from which the targeted 25 percent waste reduction goal will be measured. The base year quantity of waste generated in Knox County must first be determined to establish the amount of waste reduction necessary to meet the mandatory 1995 reduction goal. This reduction goal will be measured on a per capita basis.

Information required to establish the base year quantity includes the population and quantity of waste disposed of in 1989. The 1989 estimated population of Knox County was 332,400 and the waste disposed of was 336,396 tons (as provided by UT, February 1991).

#### 4.1.2 Adjustment to Base Year Data

Note that dividing this tonnage (336,396) by the 1989 population (332,400) provides the Knox County per capita waste generation rate of 1.01 tons/person/year. However, because 1989 records are volume-based and error prone and because subsequent years of weight-based information indicates a fairly steady generation rate of 1.16 tons/person/year, Knox County has applied to the State of Tennessee for use of 1.16 tons/person/year as more representative of actual 1989 generation.

Copies of the letter to the State Planning Office and the approval letter from the state are contained in Appendix B. Table IV-1 has been completed using the adjusted quantity and data from Chapter 3 of this plan.

#### 4.1.3 Alternate Base Year

This section does not apply to the Knox Solid Waste Planning Region.

#### 4.2 1995 Target Reduction Goal

The 25 percent reduction is calculated on the basis of the TDEC *Guidelines on the 25% Waste Reduction Goal* (December 1993). The average 1989 per capita disposal rate (1.16 tons/person/year) derived above was multiplied by 0.75 to obtain the targeted per capita waste disposal goal of 0.87 tons/person/year, which reflects a 25 percent reduction:

$$(1.16) \times (0.75) = 0.87 \text{ tons/person/year}$$

Based on the target per capita disposal rate of 0.87 and the projected 1995 county population of 344,718, no more than 299,905 tons in 1995 of waste from Knox County should be disposed of in the Chestnut Ridge Landfill:

$$(0.87) \times (344,718) = 299,905 \text{ tons in 1995}$$

Thus, if generation continued at a rate of 1.16 pounds per person per year in 1995, actual generation would total 399,873 tons, and the target reduction tonnage would total 399,873 tons minus 299,905 tons, or 99,968 tons:

$$(1.16) \times (344,718) = 399,873$$

$$399,873 - 299,905 = 99,968 \text{ tons}$$

This target reduction tonnage can also be obtained by multiplying 1.16 times 0.25 to obtain 0.29 tons/person/year target reduction, in turn multiplied by the projected 1995 population of 344,718 to obtain 99,968 tons. If the per capita generation rate increases above 1.16 by 1995, the target reduction tonnage will increase correspondingly.

However, since the waste reduction goal will be determined by measuring actual tonnages at the landfill in 1995, actual generation rate is determined by applying a 3.2 percent composite annual factor for economic growth. Thus, actual generation would total 413,318 tons (Table III-3), and the target reduction tonnage would total 113,413 tons resulting in a per capita disposal rate in 1995 of 0.87:

$$(413,318) - (113,413) = 299,905 \text{ tons to landfill}$$

$$(299,905) \div 344,718 \text{ (1995 population)} = 0.87$$

$$100 - \left[ \frac{0.87}{1.16} \right] = 25 \text{ percent}$$

### **4.3 Regional Waste Reduction Plan to Meet Statewide Goal**

#### **4.3.1 Waste Reduction Goals and Objectives**

The short-term (present through December 31, 1995) goal of the region is to achieve the 25 percent waste reduction goal mandated in T.C.A. 68-211-861(a). The objectives in order of priority to reaching this goal include the following:

- Increasing public awareness of waste reduction as the highest priority means reducing the amount of waste going to the landfill and increasing citizen and business awareness about how to reduce the waste
- Increasing awareness about the costs of waste disposal and the importance of waste reduction and recycling in the waste management hierarchy
- Coordinating and expanding workplace waste reduction, reuse, and recycling programs
- Establishing ordinances, bans, and incentives to reflect the region's new solid waste management priorities
- Diverting C&D debris to Class IV Landfills
- Recycling yard waste through a mulch and compost operation
- Expanding and enhancing residential curbside and drop-off recycling centers
- Encouraging policies and practices that facilitate the reuse of products and materials
- Promoting the purchase of recycled products

The long-term goal (1995 to 2003) is to achieve a 1 percent waste reduction each year after 1995, for a total reduction of 33 percent by the year 2003. (Target per capita rate would be 0.79 tons/person/year.)

#### **4.3.2 Quantitative Allocation of the 1995 Target**

##### ***4.3.2.1 Allocation By Material***

Materials that will be targeted are paper (including newsprint, office paper, and cardboard), glass, aluminum, ferrous metals (including scrap metal and steel cans), plastic, yard and untreated wood waste, pallets, and C&D debris. The target quantities per year of each material necessary to achieve the 25 percent reduction goal are presented in Table 4-1.

**Table 4-1  
Material Reduction Targets By Year  
Knox Region**

<b>Year</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>
Paper	8,764	11,685	30,088
Glass	1,090	2,595	4,427
Aluminum	134	472	898
Ferrous	270	476	914
Plastic	293	566	1,086
Yard Waste	30,000	35,000	41,000
C&D Waste	0	10,000	27,000
Pallets	0	0	4,000
Waste Reduction Programs	0	2,000	4,000
<b>Total</b>	<b>40,551</b>	<b>62,794</b>	<b>113,413</b>
Projected Waste Without Reduction*	408,333	410,818	413,318
Projected Per Capita Disposal Rate	1.08	1.01	0.87
Percent Reduction Per Capita Rate	7	13	25

\*Values are from Table III-3 for 1994 and 1995, which includes adjustment for population and economic growth.

Notes:

1. Exact methods to achieve these targets are described in this plan. This is an allocation of materials to set targets to meet the state goals. Chapter 6 presents estimates of 1995 diversion achieved from the recommended programs at full implementation levels.
2. Based on the target per capita disposal rate of 0.87 and the projected 1995 county population of 344,718, no more than 299,905 tons can be sent to the landfill in 1995.
3. Actual volumes recycled are shown in 1993.
4. C&D volume assumes Class I Landfill ban in effect.
5. 1991 C&D volumes were: 34,000 tons to Class IV, 33,640 tons to Class I.
6. Projected waste is volume sent to Class I Landfill.

*Paper* has been recycled in Knox County for at least 20 years. According to Knoxville Recycled Fiber, Paper Stock, and Tidi Waste (the three major buyers of paper from Knox County), in 1993 approximately 8,764 tons were recycled from Knox County in addition to what was recycled prior to 1989. The potential to recycle a significant amount of paper is enormous, especially if a workplace recycling infrastructure were developed. Using the national average for waste composition (40 percent), an estimated 155,000 tons of paper are available in the Knox County waste stream. Although mixed paper is currently collected at the city Super Centers, future markets are questionable. Thus, the recycling program will focus on office paper, newspaper, and cardboard.

*Glass* (clear, brown, and green) is currently recycled through city and county drop-off centers and through curbside residential pickup by private waste haulers provided to county residents who live outside the city. Approximately 1,090 tons of glass were recycled in 1993, mostly from residences. Glass has the biggest potential for contamination; as much as 50 percent of glass collected for recycling in Knox County has to be landfilled because of contamination. Glass-making factories that accept recycled bottles must be especially cautious in excluding contaminants that because of their different melting points can ruin entire furnace-loads of glass. Contaminants include clear Pyrex™ baking dishes, windowpanes, and light bulbs, all of which are indistinguishable from container glass after they have been broken and mixed together. Ways to minimize this contamination problem include training attendants at all drop-off sites, locking bins after hours at unattended sites, and providing better signage. However, glass that cannot be recycled into containers could be used in the road-paving process.

*Aluminum cans* will continue to be recycled because the infrastructure is in place and an end-user is located near the region. Approximately 134 tons of aluminum cans were recycled through city and county drop-off centers and residential curbside programs provided by private haulers. Documenting the actual tonnage being recycled in the region is not currently possible because of the availability of buy-back operations to the public and because purchasers and end-users buy from several counties. Based on the national average, an estimated 5,500 tpy are available for recycling in Knox County.

Approximately 270 tpy of *ferrous metals* (scrap metal, steel, and tin cans) are recycled through the convenience centers, city drop-offs, and residential curbside recycling by private providers. Although many businesses are recycling ferrous metals, most have not been keeping records of this information. Private haulers and end users are unable to provide these data because they accept materials from many other counties, and they do not track the origin of the materials.

*Plastic* is currently being collected for recycling at the convenience centers (milk and soda containers) and the city drop-off centers (Nos. 1 and 2 plastic containers with necks), and by private haulers who offer curbside pick-up to county residents outside the city. Approximately 293 tons were collected in 1993 by these residential programs. Because plastic is lightweight and pickup is expensive and because some resins are difficult to clean adequately, many communities find that these obstacles render plastic recycling the most difficult to achieve.

*Yard waste* recycling to mulch or compost is an integral part of the reduction plan. In 1991 the city contracted with a mulch/compost operation to divert this material from the Chestnut Ridge Landfill. Yard waste is currently picked up by the city inside the city limits. County residents who live outside the city have been taking bagged yard waste and leaves, which ends up in the landfill, to the County Convenience Centers. In 1993, approximately 30,000 tons of yard waste was taken to the compost site. The site stopped receiving yard waste at the end of 1993, and the city is currently reviewing proposals for a new contractor to provide a site. The city's contract will allow the opportunity for anyone to bring yard waste to the site for a tipping fee. Through intensive public education and recycling of yard waste at the convenience centers, and if yard waste is banned from disposal at Chestnut Ridge Landfill, the potential for yard waste diversion could be up to 65,000 tpy.

*C&D waste* can be diverted to Class IV Landfills. Currently, only one permitted Class IV Landfill exists in Knox County, and three other potential operators have applied for permits. According to the Knox County Needs Assessment (ETDD, 1992), which was based on visual observations by the landfill operators, waste receipts, and information provided by private haulers, approximately 33,640 tpy of C&D waste was disposed of by generators from Knox County in 1991 at Class I Landfills. Additionally, C&D waste from small generators (e.g., pickup truckloads) will not be accepted at Class IV Landfills. If the city and county share the costs to expand and reconstruct the Boyd Street transfer station to incorporate a C&D debris transfer station, a significant amount of this waste could be diverted. Tipping fees would help offset some of the operation costs. Hazardous wastes that are commonly found in C&D debris, white goods, and reusable materials could be removed from the waste stream at the transfer station as well.

#### **4.3.2.2 Allocation By Waste Generation Sector**

The target portion of waste reduction that each waste generation sector will need to contribute to reach the state goal of 25 percent is presented in Table 4-2. Except for the yard waste component, the industries and commercial businesses are expected to be able to contribute the greatest amount to the waste reduction. This is expected because according to the Knox County Needs Assessment (ETDD, 1992) they generate a combined 60 to 70 percent of the waste in the region.

#### **4.3.2.3 Allocation By Year**

The target amounts to be reduced for the calendar years 1994 and 1995 are presented in Tables 4-1 and 4-2. For the long-term goal, waste reduction is assumed to increase 1 percent per year in each category. The 1 percent increase is reasonable given the proposed coordination of programs for the workplace and the education and public information program further described in Chapter 9.

**Table 4-2  
Reduction Targets by Waste Generation Sector**

Sector	Year		
	1993	1994	1995
Residential	7,282	9,503	15,194
Commercial	12,056	15,838	25,324
Institutional	10,048	13,199	21,103
Industrial	11,165	14,254	22,792
C&D	0	10,000	29,000
<b>Total</b>	<b>40,551</b>	<b>62,794</b>	<b>113,413</b>

**Notes:**

1. Residential sector consists of: paper, glass, ferrous, aluminum, plastics, and yard waste.
2. Commercial sector consists of: paper, glass, aluminum, and yard waste.
3. Institutional sector consists of: paper, glass, aluminum, and yard waste.
4. Industrial sector consists of: paper, glass, aluminum, and yard waste.

### **4.3.3 Waste Reduction Strategy**

#### **4.3.3.1 Previous Waste Reduction Credit**

The Knox Solid Waste Planning Region does not currently intend to apply for any credit for previous waste reduction prior to 1989.

#### **4.3.3.2 Materials Recovery, Reuse, and Recycling**

The quantities of materials estimated to be recovered from the waste stream for 1994 and 1995 are presented in Table 4-1. A 1 percent growth rate is assumed for the remaining years of the planning period. The strategy for materials recovery, reuse, and recycling consists of elements described below (described in detail in Chapter 6):

- Establish business and industry focus groups to strategize and implement waste reduction, reuse, and recycling programs. The focus groups will involve solid waste providers, city and county staff, property managers of buildings and complexes, Knoxville Recycling Coalition, and other non-profit groups. UT Center for Industrial Services (CIS) and the Tennessee Valley Authority (TVA) could help coordinate technical and program development assistance.
- Institute a waste exchange program among the various industries, working with the Greater Knoxville Chamber of Commerce or another business advocacy group as a facilitator. Provide information to the Southern Waste Information eXchange Clearinghouse, a regional waste exchange.
- Develop economic incentives or grants to companies that use recycled materials as feedstock.
- Establish policies for waste reduction, reuse, and the purchase of recycled materials for all government offices.
- Require all large generators (those who dispose of more than 200 tpy) to submit a solid waste and recycling plan to the Knox County Solid Waste Department showing how they will reduce waste by 25 percent by the end of 1995. The plan will include evaluation of recycling office paper, cardboard, pallets, steel, special wastes, or additional material generated by the business.
- Coordinate the establishment of an infrastructure for office paper and cardboard recycling in target zones with private providers to ensure convenience and economic viability of recycling.
- Expand and enhance recycling at the seven operating county convenience centers.



- Construct two new county convenience centers in underserved areas (Northeast and East Knox County) designed for emphasizing recycling.
- Institute a home composting or neighborhood composting education program with the UT Agricultural Extension Service to reduce the amount of yard waste in the waste stream.
- Coordinate county participation in the city's yard waste mulch and compost operation.
- Investigate the feasibility of establishing a C&D debris transfer station as a joint project with the city.
- Negotiate with Anderson County and state officials to ban yard waste and C&D waste at the Chestnut Ridge Landfill after transfer station and yard waste operations are in place.

#### **4.3.3.3 Regulatory Bans**

The Knox County Solid Waste Planning Region proposes imposing the following regulatory disposal bans on materials to be processed or diverted instead:

- Consider banning yard waste from disposal bins at convenience centers when the compost operation or other alternatives are available to all residents.
- Develop a program with Anderson County to ban yard waste and C&D debris from the Chestnut Ridge Landfill, or impose a surcharge to discourage disposal of these materials.

#### **4.3.3.4 Economic Incentives and Disincentives**

The Knox County Solid Waste Planning Region recommends that the following actions be taken to harness market incentives for the reduction of waste for disposal and the establishment of recycling opportunities. Public awareness of these incentives will be developed through the public education programs.

**Residential Garbage Disposal.** A variable rate fee structure should be implemented for county residents utilizing convenience centers for garbage disposal, excluding a charge for disposal of recyclables. Several alternative fee structures exist including a clear bag system, a blue bag system, a per-unit sticker system, a permit system, and a punch card system. Currently, no recommendations are being made about the exact nature of the system or penalties for non-participation because a study is needed to determine the most feasible and effective program for Knox County. A volume-based fee structure provides residents an incentive to reduce their volume of garbage for disposal by source reduction, composting,

and recycling. Revenues from residential disposal should be used to cover transportation and disposal costs.

Upon expiration (in 1996) of the City of Knoxville's current residential waste hauling contract, the city should consider adopting a variable rate charge (with City Council approval) to city residents for waste disposal to reflect the costs of solid waste disposal and to provide an incentive for source reduction, composting, and recycling. This would require that residents pay for disposal in proportion to the amount of waste generated in the form of a fee structure that may include a declining, fixed, or increasing per-can or per-bag charge.

If a variable rate fee structure is implemented by both the county and the city, careful planning and coordination will be needed to make sure all residents, both city and county, are paying their fair share based on their production of solid waste.

A similar rate structure should be adopted by Knox County for private haulers contracting with households for door-to-door collection of garbage for disposal. In addition, the City of Knoxville and Knox County may require private waste haulers to provide recycling collection services as a condition of their business license or franchise agreement. A comprehensive study would be appropriate to determine rate structures, contract agreements, minimum levels of service, and penalties, if appropriate.

This type of program will be implemented so that residences and businesses can reduce their garbage bill by recycling. Because any rate structure modifications may be accompanied by a temporary increase in illegal dumping, increased enforcement will accompany any rate change. This plan recommends that the county and the city work together to implement a common rate structure.

**Commercial Garbage Disposal.** The City of Knoxville should consider phasing out partial disposal subsidies for commercial properties such as offices that are owned as condominiums. Former subsidy money may be diverted to establishing economic incentives for commercial recycling, including establishment of a directory of materials available or needed as output or input to activities or processes, grants for facility renovations to incorporate recycling opportunities, and coordination of waste audits.

**Disposal Surcharges.** The region should meet with Anderson County officials to consider a surcharge at Chestnut Ridge Landfill for yard waste and C&D waste from Knox County after the region's compost site and transfer station are in operation.

**Entrepreneurial Incentives.** Grants and/or tax credits should be provided to businesses that use recycled materials as feedstock. In addition, the planning region should facilitate the coordination of better information about available output that may be used as feedstock for another process or activity for use by the commercial sector.

**Fines for Littering and Illegal Dumping of Waste.** Establishment of a fee structure for county, city, and commercial disposal of waste that more accurately reflects the disposal costs simultaneously increases the incidence of littering and illegal dumping. Increased penalties for such violations should be implemented, which will also necessitate additional enforcement resources.

**Building Codes.** Building codes should be revised to require adequate space for recycling in new apartment buildings and commercial developments, and the presence of such an area should be a criterion for accepting proposed building plans. "Adequate" space may include access for recycling trucks, safe storage for recyclables, and sufficient floor space for desk-side or centralized collection bins.

#### **4.4 Staffing, Budget, and Funding**

Staffing, budget, and funding recommendations include the following:

- At least one full-time staff person in the Knox County Solid Waste Department to coordinate education and public information, to be hired in FY 1994/1995
- A waste reduction engineer, funded by TVA, trained by UT CIS, coordinated by Knox County Solid Waste Department, to be hired by March 31, 1994
- Administrative Assistant for support of all solid waste programs
- Contract with an outside public relations firm to support targeted campaigns
- Research costs to measure public awareness and behaviors before and after campaign
- Improved prosecution and enforcement of litter and illegal dumping (e.g., coordination with the District Attorney General, increased prosecution, fines, and other deterrents for illegal dumpers)
- Investigate the feasibility of hiring of officers to enforce illegal dumping
- Investigate the feasibility of a joint city and county C&D transfer station

Staffing, budget, and funding requirements for the waste reduction strategies presented in this chapter are further described in Chapter 6.

#### **4.5 Implementation Schedule**

A composite 10-year implementation schedule for the waste reduction strategies described in Chapter 4 and the recycling programs described in Chapter 6 is provided in Table 6-3.

#### **4.6 Allocating Responsibility for Plan Implementation**

The Knox County Solid Waste Planning Region Board will have oversight responsibility to ensure that the waste reduction goals are being met. As operating agencies within the county, the City of Knoxville and the Town of Farragut will have responsibility for physically implementing their portions of the plan. The City of Knoxville Office of Solid Waste will be specifically responsible for the recycling drop-off centers operated by the city, the compost operation contract, and the Project 2000 Public Housing Recycling Project. The Knox County Solid Waste Department will be responsible for the convenience centers. The City of Knoxville Office of Solid Waste and the Knox County Solid Waste Department will be jointly responsible for investigating the feasibility of operating a transfer station for C&D waste, Knox County Schools recycling programs, telephone book recycling, and Christmas tree recycling. The Town of Farragut will be responsible for measuring yard waste that its employees chip and distribute to residents or use in parks. The data will be submitted to Knox County for inclusion in diversion totals. Further details on responsibilities for plan implementation are found in Section 6.14, Specific Allocation of Responsibility.

#### **4.7 Reporting Requirements**

The Knox County Solid Waste Planning Region Board will submit its first annual report to the State Planning Office for the 1993 calendar year and annually thereafter. The format of this report will be based on guidance received at a future date from the State Planning Office. Data requirements of this report include the following:

- Waste collection and transportation system
- Recycling
- Disposal
- Public costs
- Other information deemed relevant by the board regarding solid waste planning and management

Collection of the necessary data for this report will be the responsibility of the Knox County Solid Waste Department. Any entities actively engaged in transportation of

municipal solid waste or in the recovery of recycling materials in Knox County will be required to provide information to the Knox County Solid Waste Department. To protect the confidentiality of private business information, information from private haulers will be released at the aggregate level only.

In addition to and in conjunction with the annual report, the county will submit an annual report to the State Planning Office on the progress made toward implementation of this solid waste management plan.

The region will collect the data from the Knox County Solid Waste Department, the City of Knoxville Office of Solid Waste, the Knoxville Field Office of the TDEC, Chestnut Ridge Landfill, and cooperating industries (e.g., BFI, Waste Management, Inc., Tennessee Wastemovers, Knoxville Recycling Coalition, the compost facility operator, Knoxville Recycled Fiber, Paper Stock, Tidi Waste, Southern Foundry and Knox Metals, and Seton Iron Works). The annual report and progress reports will be prepared by the Knox County Solid Waste Department.

**Chapter IV**  
**Forms**

**Table IV-1  
Population and Quantities of Waste Disposed of at Municipal Solid  
Waste Disposal Facilities and Incineration, 1989\***

<b>County</b>	<b>1989 Population</b>	<b>1989 Total Waste Disposed (tons)</b>
Knox	332,400	336,396

\*UT's Waste Management Research and Education Institute's report on *Managing Our Waste: Solid Waste Planning for Tennessee*, February 1991

**Table IV-2  
Estimated Quantities of Waste Removed or Diverted From the Waste Stream (tons)**

Year	Previous Reductions <sup>a</sup>	Recovered & Recycled	Diverted to Alternative Disposal <sup>b</sup>	Economic Incentives	Other	Total
1985 to 1989	0	N/A <sup>c</sup>	N/A	0	0	N/A
1990	0	N/A	0	0	0	0
1991	0	N/A	0	0	0	0
1992	0	N/A	30,000	0	0	30,000
1993	0	10,551 <sup>d</sup>	30,000	0	0	40,551
1994	0	17,794	45,000	0	0	62,794
1995	0	45,413	68,000	0	0	113,413
<b>Subtotal</b>	<b>0</b>	<b>73,758</b>	<b>173,000</b>	<b>0</b>	<b>0</b>	<b>246,758</b>
1996	0	48,329	69,500	0	0	117,829
1997	0	52,296	70,000	0	0	122,296
1998	0	56,313	70,500	0	0	126,813
1999	0	60,381	71,000	0	0	131,381
2000	0	64,501	71,500	0	0	136,001
2001	0	68,552	72,000	0	0	140,552
2002	0	72,648	72,500	0	0	145,148
2003	0	76,790	73,000	0	0	149,790
<b>TOTAL</b>	<b>0</b>	<b>573,568</b>	<b>743,000</b>	<b>0</b>	<b>0</b>	<b>1,316,568</b>

<sup>a</sup>No credits for previous reductions are claimed.

<sup>b</sup>Value consists of yard waste and C&D demolition waste. Does not include C&D waste already diverted to Class IV Landfill.

<sup>c</sup>Not available.

<sup>d</sup>Values include paper, glass, aluminum, ferrous, plastic, pallets, and waste reduction programs.

<sup>e</sup>Totals reflect a 25 percent waste reduction goal by 1995 and a 1 percent reduction each year thereafter.



## **5.6 Implementation of Timetable**

The Solid Waste Administrator within the Knox Region is responsible for implementing elements of this plan (Table 5-3). The City of Knoxville also has primary jurisdiction over many residences and businesses affected by this plan.

## **5.7 Waste Collection and Transportation Element Location**

Please refer to Figure 2-1 for a description of the current waste collection system and waste flow patterns within the Knox Region.

## **Chapter 6 Recycling**

This chapter discusses the steps proposed by the Knox County Solid Waste Planning Region Board to expand its recycling efforts. This chapter has been developed through a process of reviewing existing conditions; defining regional needs, goals, and objectives; and outlining strategies and programs for the development of a comprehensive county-wide recycling program.

### **6.1 Existing Conditions**

Although the infrastructure for residential recycling is largely in place, participation rates are low, which results in only a 2 percent diversion of the total waste stream through residential programs. However, the recycling infrastructure has not been widely developed in the workplace (including commercial, industrial, and institutional sectors). Recent pilot efforts by the non-profit Knoxville Recycling Coalition office paper recycling program, targeting 70 worksites, have initiated business recycling and have provided a model for future recycling efforts. The potential for expanded recycling in the workplace is high, with more than 10,000 businesses operating in Knox County and a high proportion of commercial wastes. Knox County is fortunate to have relatively stable materials markets resulting from proximity to major buyers of recycled materials, but few end users of recycled materials are located in the county. Table 6-1 and Figure 6-1 show how specific materials were being recycled in Knox County in 1993.

### **6.2 Regional Needs**

Knox County has multiple opportunities to address regional recycling needs. The region's most pressing need is for strong educational programs and incentives for participation in recycling programs. Other primary regional needs include the following:

- Development and improvement of the infrastructure for workplace recycling, with initial emphasis on high recyclability locations and materials
- Upgraded residential recycling opportunities
- Increased education, awareness, and participation in all recycling sectors
- Enhanced materials markets including development of recycling industry end users located within Knox County
- Targeting of recyclable and compostable materials with high recycling rate potential, including yard waste and C&D debris

Table 6-1  
 Recyclable Materials Market in Close Proximity to Knox County

Company Name, Address, and Telephone	Scrap Iron, Copper, Brass	Aluminum Cans	Newsprint	Corrugated Cardboard	Office Paper	Plastic	Glass	Used Oil, Oil Filters, and Fluids	Other Materials
A-1 Wiping Rag Company 1942 Western Avenue Knoxville, TN (615) 521-6580	X	X							
Alcoa Recycling Alcoa, TN		X							
Alcoa Recycling Center 600 North Gay Street Knoxville, TN (615) 971-1907		X							
BFI Recycling Systems 2400 Chipman Street Knoxville, TN (615) 522-0078	X	X	X			X	X		
Cash Metals Company 7826 Old Rutledge Pike Knoxville, TN (615) 525-1634	X	X							X
Enterprise Oil 5201 Middlebrook Pike Knoxville, TN (615) 558-0533								X	
IMCO Recycling, Inc. Rockwood, TN		X							
Industrial Oil Service 2708 Crosslane Drive Knoxville, TN (615) 693-7627								X	

Table 6-1  
 Recyclable Materials Market in Close Proximity to Knox County

Company Name, Address, and Telephone	Scrap Iron, Copper, Brass	Aluminum Cans	Newsprint	Corrugated Cardboard	Office Paper	Plastic	Glass	Used Oil, Oil Filters, and Fluids	Other Materials
Inskip Glass Recycling 1111 Chicamauga Avenue Knoxville, TN (615) 688-4082							X		X
Inskip Recycling 210 Sylvia Drive Knoxville, TN (615) 522-6129									X
The David Joseph Company 2420 Schofield Avenue Knoxville, TN (615) 637-0683									X
Joyner's Enterprises Highway 58 Kingston, TN	X	X							
Knox Metals Corporation 822 Richards Avenue Knoxville, TN (615) 637-4353	X								
Knoxville Recycled Fiber 410 Frazier Drive Knoxville, TN (615) 522-6129			X	X	X				? Mixed Paper
Knoxville Recycling Coalition 220 Carrick Street Knoxville, TN (615) 525-9694					X				
Midsouth Paper Recycling 2810 Hoyt Avenue Knoxville, TN (615) 546-2912					X				X

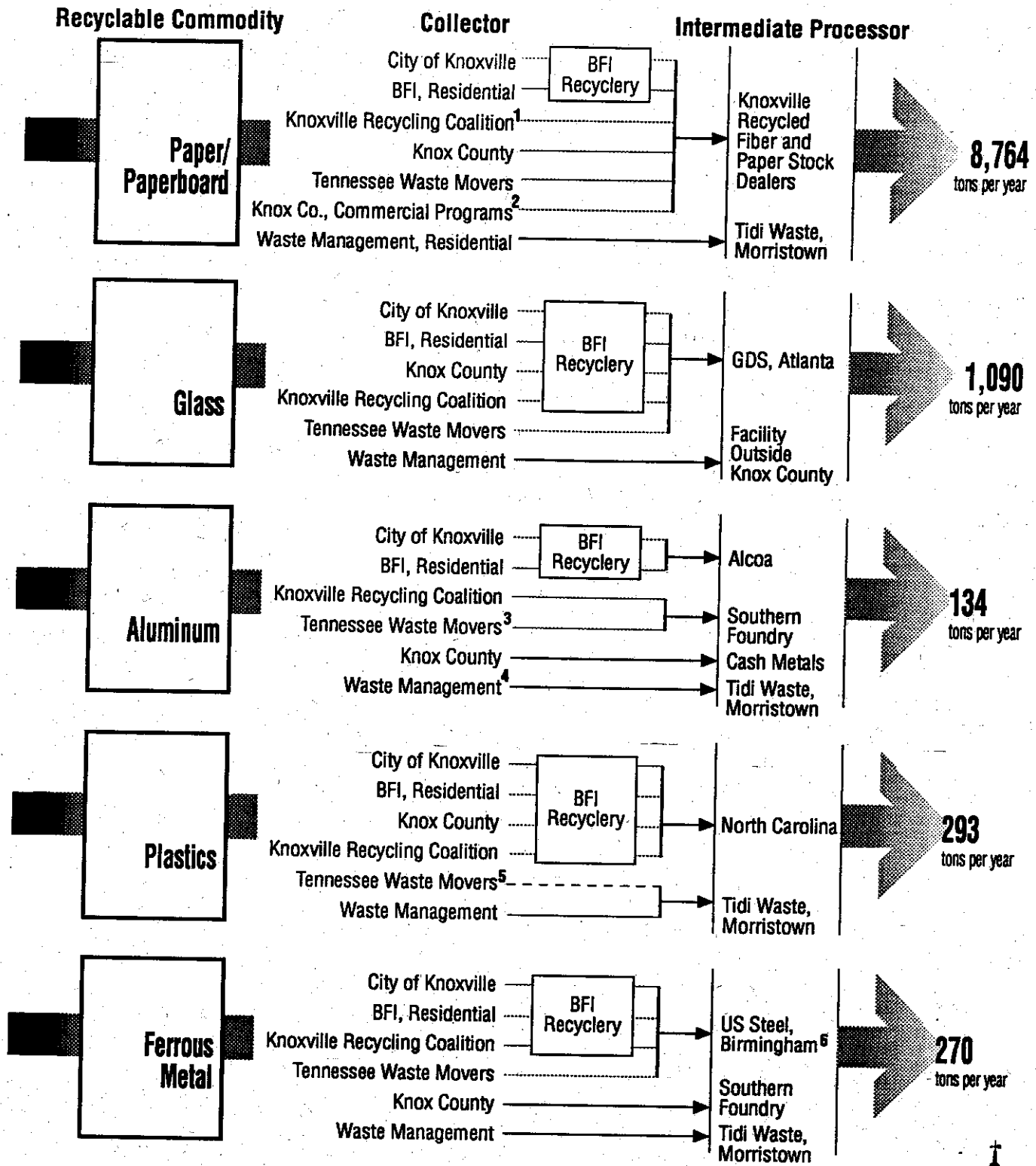
Table 6-1  
 Recyclable Materials Market in Close Proximity to Knox County

Company Name, Address, and Telephone	Scrap Iron, Copper, Brass	Aluminum Cans	Newsprint	Corrugated Cardboard	Office Paper	Plastic	Glass	Used Oil, Oil Filters, and Fluids	Other Materials
<b>Pallet Exchange</b> 214 West Morelia Avenue Knoxville, TN (615) 523-1203									
<b>Paper Stock Dealers, Inc.</b> 1111 Mitchell Street Knoxville, TN (615) 524-0309		X	X		X				
<b>Phillips Salvage</b> Rockwood, TN			X	X					
<b>R &amp; R Batteries, Inc.</b> 6540 Garwood Circle Knoxville, TN (615) 688-5671									X
<b>Reclamation Services Central Recycling</b> 301 West Quincy Road Knoxville, TN (615) 525-9775	X								Batteries?
<b>Safety-Kleen Corporation</b> 826 Stewart Lane Knoxville, TN (615) 522-2333								X	? Paint Thinner, Machine Coolant
<b>Seaton Iron &amp; Metal Company</b> 1507 Decatur Pike Athens, TN (615) 745-3870	X								
<b>Service Industries</b> 1547 N. Liberty Hill Road Morristown, TN (615) 581-1876									X

Table 6-1  
Recyclable Materials Market in Close Proximity to Knox County

Company Name, Address, and Telephone	Scrap Iron, Copper, Brass	Aluminum Cans	Newsprint	Corrugated Cardboard	Office Paper	Plastic	Glass	Used Oil, Oil Filters, and Fluids	Other Materials
Smokey Mountain Smelters 1455 Maryville Pike Knoxville, TN (615) 573-2791		X							
Southern Foundry 2826 North Central Avenue Knoxville, TN (615) 524-2791	X	X	X						X
Southern Salvage Scrap Metals Lower Carter Street Harriman, TN	X	X							X
Spectra Environmental Services 178 Judson Drive Alcoa, TN (615) 970-2160									
Tidil Waste Morristown, TN		X	X			X	X		X
Waste Management, Inc. 2552 Western Avenue Knoxville, TN (615) 525-0529		X			X	X	X		
Willy's Recycling 7220 Central Avenue Pike Powell, TN (615) 947-1442									X
David Witherspoon, Inc. 901 Maryville Pike Knoxville, TN (615) 577-1613	X	X							X

# Knox County 1993 Recycling Stream...



1 Residential

2 KRC, BFI, News-Sentinel, etc.

3 Alter nate Market: Knox Metals

4 Alter nate Market: Alcoa

5 Currently not active in plastic - 1993

6 Alter nate Market: Southern Foundry, Knox Metals

Figure 6.1  
**Knox Region  
1993 Recycling Stream**  
(recycled materials of >100 tpy)



KNOX SOLID WASTE PLANNING REGION

- Implementation of incentives, policies, and ordinances that promote Knox County's new waste management strategy and priorities
- Need to manage and account for the interaction of recycling programs with other solid waste programs, including policies and procedures, to fully realize the benefit of avoided disposal, transfer, and collection costs resulting from implementation of recycling programs

### **6.3 Specific Actions Under the Recycling Program**

#### **6.3.1 Regional Goals and Objectives**

Goals for the Knox Region recycling program include the following:

- Implement waste reduction programs as the priority solid waste management strategy.
- Increase Knox Region diversion levels through recycling and composting as quickly as possible in a cost-effective manner to help achieve local and statewide recycling goals.
- Design residential recycling programs that enhance and complement existing programs, and expand recycling to the commercial, institutional, and manufacturing sectors of the county.
- Develop and enhance the existing private recycling infrastructure to the extent possible, and foster cooperation between private enterprise and local government to maintain and expand a viable recycling industry.
- Increase public awareness of waste reduction and recycling activities through educational and promotional programs.
- Provide ample opportunity for public input into the final development and implementation of waste reduction and recycling programs.
- Develop a plan framework that simultaneously achieves plan goals and allows maximum flexibility to participating cities for implementing specific program components.
- Achieve cooperative plan implementation and model program status on the part of the region, municipalities, school districts, and other institutions to the greatest extent possible.



- Create a monitoring and evaluation process that results in effective improvement and modification of county programs to maintain adequate progress toward plan goals.

Specific objectives to reach these goals include the following:

- Implementation of a public education and information program
- Expansion of office paper and cardboard recycling programs
- Establishment and coordination of business focus groups
- Coordination of a waste exchange information system for businesses
- Expansion and enhancement of the convenience center drop-off recycling programs
- Reporting of solid waste plans for major commercial questions
- Modification and expansion of the existing convenience centers to enhance residential recycling
- Addition of two more convenience or recycling centers in underserved areas
- Implementation of a yard waste composting program that has sufficient capacity to handle yard waste from the county and the city
- Developing a system to divert reusable materials from C&D debris

### **6.3.2 Recycling Strategies**

The key strategy of the recycling program is to create an environment within the region where plan goals are accomplished as a result of mutual coordination among agencies, jurisdictions, the public, and private interests. Infrastructure for workplace recycling and expanded residential recycling will require coordinated efforts with private waste companies, nonprofit groups such as the Knoxville Recycling Coalition, the City of Knoxville, TVA, and UT.

A second, equally important strategy for Knox Region recycling programs is to ensure development of infrastructure and markets prior to the collection of increased quantities of recyclable materials. High-quality recyclable materials at large generators and collection points will be targeted first, while markets and infrastructure are developed to absorb additional quantities of lower quality materials that can further increase the recycling rate. This strategy will help ensure that programs are implemented cost-efficiently and will not lead to the collection of materials that subsequently do not find a market outlet.

### **6.3.3 Description of Planned Recycling Program**

The planned recycling programs to be initiated in the region build upon the existing programs and the regional centers available for processing or using the recycled materials. Elements of the planned recycling program were chosen and designed to address the regional needs discussed above and to guide Knox Region toward meeting its regional goals and objectives. The following is a breakdown of the elements of the recycling program:

- **County-wide Education and Promotion Program**
- **Workplace Recycling**
  - Preparation of solid waste plans
  - Workplace focus groups
  - Office paper recycling
  - Cardboard recycling
  - Waste Exchange Program
  - Pallet Exchange, Reuse, and Repair Program
  - Consideration of mandatory recycling
- **Residential Recycling**
  - Expanded and enhanced operation of convenience center recycling
  - City Super Centers
  - Backyard Composting Program
  - Coordinated county curbside collection
  - Yard Waste Program
- **Other Recycling Programs**
  - School recycling
  - Recovery of recyclables from C&D debris

The programs described in this plan are also designed to balance the benefits gained by public awareness resulting from recycling in the residential section with the higher waste stream diversion potential resulting from recycling in business sectors in Knox County. The county will continue to stress through education and incentives recycling policies that encourage voluntary recycling in all sectors. No recycling mandates or penalties for not recycling are included in this plan other than possible separation requirements for Class IV materials. In the event that voluntary programs do not achieve the mandated 25 percent recycling, additional programs described in this chapter will be considered.

Existing programs that adequately recycle materials such as batteries, used oil, and scrap metal were described in Chapter 2 and are not discussed further in this section. Figure 6-1 shows current recycling programs, recycled materials, and amount of recovered materials, while Figure 6-2 (located at the end of this chapter) shows the location of existing and planned recycling programs.

Each of these programs is described in further detail below. Table 6-2 (located at the end of this chapter) summarizes the anticipated diversion level that should be achievable through new program implementation by the end of 1995. These estimates represent new recycling in addition to existing programs and assume that program implementation begins as soon as possible in 1994 so that programs are operating at the indicated level by the end of 1995. The diversion tonnage calculations are based on five factors multiplied by the total waste tonnage forecast for 1995:

- Percent total waste stream by sector—residential, commercial, institutional, industrial, and special
- Percent composition by material—EPA estimates applied to Knox Region
- Service area—percent of the applicable target sector (residences, businesses, etc.) that is served by the new program
- Capture rate—the amount of available material that participants actually recycle
- Participation rate—percentage of participants within the service area

Table 6-2 (located at the end of this chapter) also presents recycling diversion in tons by material, program, and sector, as well as a percentage of the waste stream. Because waste composition data are not available by sector for Knox Region, the EPA composition data are assumed to apply uniformly to all sectors. This necessary assumption introduces some error into individual program calculations (e.g., industrial generators will not likely produce much, if any, yard waste). However, the calculated totals include material diversion estimates from all sectors, balance the error present in individual programs, and represent the best estimate of recycling diversion based on program design features. Introduction of new recycling programs in a pilot capacity and additional waste composition studies specific to Knox Region will help ensure the implementation-level feasibility of the programs recommended in this plan.

The recycling tonnages presented in Table 6-2 (located at the end of this chapter) are included in the estimates of total county waste reduction presented in Chapter 4.

### ***6.3.3.1 County-Wide Education and Promotion***

Waste reduction education is a required element of the solid waste plan. In order of priority, important elements should include the following:

- Information about the true costs of waste disposal and the importance of waste reduction and recycling

- Waste reduction as the best and most preferred way to reduce the amount of waste going to landfills
- Importance of buying recycled or used products
- Methods of dealing with yard waste and food waste

**Scope of Education Program.** As part of the solid waste plan, recycling program guidelines require Knox Region to include an educational component aimed at all appropriate waste generators. Groups to target with special messages include schools, home builders and construction companies, large generators, groups of similar types of business (e.g., restaurants), and groups of businesses in targeted locations (e.g., industrial parks or office buildings). A concerted media campaign (with a slogan or theme) should be planned to raise awareness among the public and should outline specific activities that people can perform in helping to achieve the goals. Unfortunately, this type of campaign cannot rely on public service announcements or one-paragraph announcements in the local papers. This campaign will require advertising or public relations specialists and paid advertising to reach those who can best benefit from the messages. Knox County Solid Waste Department staff could be responsible for supervising such a campaign and for handling associated and supporting public information tasks. The campaign will include surveys to measure public awareness and behaviors before and after the campaign. Costs for this campaign are included in the Public Education (Chapter 9) budget.

**School Curricula.** The region can adapt state or other existing curricula or develop its own curricula for all grades by working with students, teachers, schools, and school districts to implement waste reduction curricula. It is recommended that schools may become involved through special classes and integration of waste reduction concepts into different business, industrial, and economics classes. The new Knox County Solid Waste Coordinator/Residential position will spend 30 percent of the time compiling and distributing information and coordinating with educators responsible for solid waste in the school system.

**Waste Audits.** Waste audits are a specific form of technical assistance to non-residential generators of waste. The county can coordinate waste audits for local businesses as a method of motivating and educating businesses and institutions about the need to and opportunities for reducing and recycling waste. UT CIS is willing to provide waste audit training to a group of volunteers (e.g., TVA retirees), as further described in Section 6.3.3.2. Programs in other locations that involve a similar pool of volunteers have proven successful in assisting businesses in reducing their waste stream.

**Technical Assistance.** Region staff can coordinate with UT CIS to provide waste reduction technical assistance to non-residential generators through fact sheets, workshops, labor and management training, demonstration programs, and volunteers as mentioned above. Like waste audits, technical assistance offers a valuable service to non-residential generators by providing them with experience and knowledge that can take months to develop without outside assistance.

**Waste Reduction Planning by Non-Residential Generators.** Knox Region will require non-residential generators (more than 200 tpy) to prepare plans to reduce and recycle wastes at their operations. Such requirements will be supported by a specific waste reduction planning form and guidelines for useful content and examples of a workplace solid waste and recycling plan. Waste reduction plans can be a valuable source of reporting and monitoring information. The plans can be structured as a helpful tool in assisting business and operations managers in identifying opportunities for waste diversion. Some businesses may have legitimate concerns about confidentiality, which should be addressed.

The county will contact businesses to inform them about technical assistance with waste reduction planning. The county will work closely with UT CIS when individual businesses request planning assistance.

**In-House Waste Reduction.** The region will expand its current in-house waste reduction program to include additional county facilities and to encompass new waste reduction measures. By carefully monitoring the waste reduction effectiveness, costs, and avoided costs of this program, the county will develop a model for county businesses, city government, and schools.

**Support of Business and Non-Profit Groups That Promote Reuse.** Businesses and non-profit groups that promote the reuse of items include pallet manufacturers, diaper services, equipment rental services, cartridge remanufacturers, furniture reupholstering businesses, appliance reconditioners, and second-hand retail stores. All such entities provide an infrastructure that supports waste reduction activities. The region can support this by promotion and education, reduced business taxes and fees, reduced regulatory burdens, or avoided disposal credits where the county provides a direct financial payment for each ton of waste diverted from the landfill. Only promotion and education will occur during the entire planning period; financial or regulatory incentives will be delayed until the second half of the period.

**Awards and Public Recognition.** Awards and public recognition can be used to develop intrinsic motivations to reduce waste at the source. Awards can be issued honoring individuals, organizations, institutions, and businesses that have contributed significantly to waste reduction in Knox Region through leadership, innovation, or volunteerism or through setting a positive example for others to follow. Public recognition provides an opportunity for the county to publicize innovative waste reduction programs and encourages the non-residential sector to participate in county waste reduction activities. In 1993, the Greater Knoxville Beautification Board developed the Environmental Awards program that recognizes individuals and businesses that demonstrate the criteria described above.

The county could become more involved with these awards and create more publicity and recognition in the future. The county will seek corporate co-sponsorship to help pay for the awards.

### 6.3.3.2 Workplace Recycling

**Workplace Focus Groups.** Knox Region will continue its relationship with UT CIS in providing Waste Reduction Education Workshops or Focus Groups for businesses and industries in the region. The first such workshop was held in the Forks of the River Industrial Park in February 1994, with more than 25 industries and businesses attending. The sessions involve a half day of intensive waste management training by UT CIS representatives, followed by plant visits by waste reduction engineers. After the tours, the engineers write recommendations for waste reduction and recycling. If the industries require further assistance, they have the option of scheduling more in-depth training with UT CIS. The Knox Solid Waste Plan anticipates two workshops per year for the remainder of the planning period.

In addition, Knox Region has joined with UT CIS and TVA in a pilot project matching TVA retired engineers with large individual waste generators. UT CIS will train the retirees and will offer one-on-one counseling in waste reduction to the top 100 generators. This "urban demonstration project" includes a follow-up survey several months after the visit to track waste reduction and recycling. UT CIS believes this is the first such tracking effort ever undertaken; if it is successful, the Knox Region intends to extend it indefinitely.

**Office Paper Recycling Program.** Office paper pickup and recycling services for Knox County businesses currently number fewer than five firms. These firms are servicing some of the larger generators of paper in the county such as UT, *The Knoxville News-Sentinel*, and IT Corporation. Some of the Knox County schools, through subsidy of the city and county, are also being serviced. Obviously, only the larger generators in the county can individually produce the quality and quantity of paper that haulers must have to make a profit. Even with high quality and quantity, the low market price of paper forces at least one hauler to charge for the pickup service. In current market conditions, experience has shown that only firms in excess of 40 employees can individually offer a viable, sustainable office paper recycling program. Other companies may operate paper recycling programs, but these programs ultimately must be supported through company funds or employee volunteer efforts.

Low quantity generators of office paper face more obstacles for instituting a cost-effective office paper recycling program. Enhanced business recycling infrastructure facilitated by the county will help overcome the market forces that inhibit recycling. Educational programs through workplace focus groups will be designed to illustrate recycling versus waste disposal and cost savings available through recycling. The region will help organize businesses into recycling groups to increase the quality and quantity of recyclable material offered to a hauler. Such a program would help establish relationships with haulers and facilitate the design of a cooperative recycling program. Particular attention should be given to office park management, shopping center building management, and office tower building management to encourage office paper recycling in addition to trash handling services. Building these relationships between nearby businesses is the key to building an economical self-supporting office paper recycling program.

**Cardboard Recycling.** Cardboard is the least expensive material to sort for recycling. Cardboard recycling is readily available to the business, industrial, and commercial sectors through private haulers such as BFI, Waste Management, Inc., Knoxville Recycled Fiber, and Paper Stock Dealers. Some private haulers provide a compactor to businesses that generate large volumes of cardboard. For example, Paper Stock Dealers provides a compactor for businesses that generate at least 12 tons per month. Higher disposal costs should encourage participation in existing private programs. Several end users of cardboard are located in neighboring counties and states.

**Waste Exchange Program.** A waste exchange program involves providing a means to put industries that produce a waste product in contact with other industries that may view that waste product as a raw material for their processes. A waste exchange program may be implemented through local seminars and through membership in exchange services such as the Southern Waste Information eXchange Clearinghouse.

The Greater Knoxville Chamber of Commerce or other business advocacy groups may be able to help coordinate the waste exchange program with initial help from the UT CIS. UT CIS will facilitate waste reduction seminars or focus groups in the region; one purpose is to assemble industry representatives in the same room to exchange information. A pre-seminar poll should determine industry willingness to participate in the program and will indicate types of waste that are available. The Solid Waste Department will provide businesses and non-profit organizations with overall coordination and information from the Office of Cooperative Marketing.

**Pallet Exchange, Reuse, and Repair Program.** This is a multi-faceted program ultimately designed to keep pallets out of the landfill. A key element in the success of this program could be the labor force available at the Knox County Penal Farm. This labor could be used to refurbish and recycle pallets brought to the farm from local pallet dealers.

The pallet exchange program initially involves the Chamber of Commerce, which will serve as a facilitator for local industries in determining whether any pallets can be exchanged among them. The industries will be responsible for the actual physical exchange. The repair program involves coordination between pallet dealers, industries, and the Penal Farm to determine if a greater percentage can be repaired versus discarded. The Solid Waste Department will have overall coordination responsibility.

### **6.3.3.3 Residential Recycling**

**Expanded and Enhanced Operation of Convenience Center Recycling.** In addition to the seven existing convenience/recycling centers located in the county, two new centers are proposed for construction in areas underserved in the county. The following are recommendations for improving the operations of all convenience centers and for increasing recycling participation:

- Expand and reconfigure sites to allow more space for collection of recyclables and to improve traffic flow.
- Establish standards for operating hours, cleanliness, and pickup of recyclables before bins are completely full.
- Train attendants to promote and encourage recycling.
- Establish better signage for recyclables.
- Provide demonstrations of home composting by showing bins and educational materials.
- Beautify the sites (landscaping, attractive signs, fencing, or screening).
- Accept cardboard and newspaper at all sites, and ban the disposal of these materials in regular trash bins.
- Provide bins for yard waste when the compost operation is available to all residents.
- Charge a fee for waste disposal to encourage recycling.

**City Super Centers.** The city has established five staffed Recycling Super Centers, all of which are currently operational. These centers accept newspapers, corrugated cardboard, mixed paper, aluminum, and steel cans, plastic, and glass containers. They are located at four Kroger grocery stores and one Buy For Less grocery store.

**Residential Backyard Composting Program.** For the first half of the planning period, the residential backyard composting program will be an educational endeavor. These educational efforts will involve the county, the city, Ijams Nature Center, and the UT Agricultural Extension Service Master Gardener program. One means to providing education is through cooperative demonstration projects at the World's Fair Park, Ijams Nature Center, Farmer's Market, convenience centers, etc.

A long-range goal is to fund a Master Composter position under the Master Gardener program; one possible source of funding is TVA. The Solid Waste Administrator will be responsible for investigating funding sources.

**County Curbside Residential Service.** Private haulers currently provide free recycling to their subscribers in the county. To increase the participation rate, the Knox County Solid Waste Department will be responsible for promoting and coordinating this service to county residents.

**City Yard Waste Program.** The city yard waste program, more fully described in Chapter 7, provides for collection and composting of yard waste generated in the city.



However, the city's contract also includes a provision allowing the contractor to accept waste that is not generated within the city limits.

The county proposed to develop an educational and promotional program to inform county residents that they have an alternative to disposing of their yard waste at the landfill or convenience centers. About 10,000 flyers will be printed and distributed through the Highway and Air Pollution Control Departments, as well as at the convenience centers. Landscaping firms, residents who request burn permits, and persons who telephone the Solid Waste Department will also be provided with information about this alternative.

#### **6.3.3.4 Other Recycling Programs**

**School Recycling.** Knox County will work with schools to encourage cost-effective recycling at school locations. The educational value of in-school recycling and carryover to home-based behavior is perhaps more important than the potential diversion tonnage from school recycling. The region will work with schools to establish programs such as source separated materials recycling and demonstration composting sites.

**Recyclables Recovery from C&D Debris.** Salvaging recyclable materials from the C&D waste stream is an expensive operation, usually used only by municipalities with very high landfill tipping fees. The Solid Waste Department will investigate the feasibility of instituting such an operation in the region during the first half of the planning period. If positive recommendations result from this investigation, any implementation would occur in the second half of the planning period.

#### **6.3.4 Recyclable Materials Collection Site Location**

The approximate location of the sites for collection of recyclable materials is shown in Figure 6-1, along with the county convenience centers, city Super Centers, commercial recyclers, processing centers, and end users.

#### **6.3.5 Regional Processing Center**

The BFI Recyclery on Prosser Road in Knoxville processes recyclable materials and sells them to end users. Materials processed at the BFI facility include newspaper; glass; aluminum; plastic; and scrap iron, copper, and brass. This processing center has the capacity to process approximately 1,370 tpd. In addition, the region has significant additional processing capacity represented by the scrap dealers and other businesses described in Table 6-1. Before considering the development of new recycling facilities, the region will work with existing material handlers that maintain an interest in handling increased recyclable quantities. Barring space limitations, existing operations are readily capable of increasing capacity by adding containers and processing equipment.

Tidi Waste, which is located in Morristown (Hamblen County), also operates a regional processing center for recyclables. They buy, separate, and market glass (clear, brown, and

green), aluminum cans, newspaper, magazines, and plastic (Nos. 1 and 2). They currently process 150 tons per month and are capable of processing 250 tons per month.

Knox Recycled Fibers and Paper Stock Dealers are two of the larger regional processors for newsprint and office paper. They receive materials from numerous sources, as shown on Figure 6-1.

### **6.3.6 Marketing of Recyclable Materials**

Recyclable materials currently being collected, transported, processed, and marketed in Knox Region are shown in Figure 6.1. Recyclable materials markets in proximity to Knox County are presented in Table 6-1. Private haulers and processing centers operating in and around Knox County indicate a need for more recycled materials to keep their recycling operations economically viable and to provide steady and reliable sources of materials for their markets. The strongest current regional markets are for paper and cardboard. Based on the demand for additional materials to process, the region will not likely provide an immediate strong focus on market development. Initial resource allocation will be aimed at priority education and waste reduction programs. The region also will set procurement requirements as an example for recycling market development and maintenance of demand for recycled content products. The region will continue to monitor and assess market conditions to ensure that as new programs are implemented and new materials are added to existing programs, markets will remain capable of handling all materials collected.

### **6.3.7 Interaction with Office of Cooperative Marketing**

Knox County will provide the following information on an annual basis (where available) to the Office of Cooperative Marketing, established within the Department of Economic and Community Development:

- Buyers within Knox County, including product specifications, markets, and prices
- Public and private for profit and non-profit recycling programs within Knox County and the quantity and quality of materials offered for sale by these programs
- Inventory of available quantities, qualities, and locations of recyclable materials in Knox County
- Information on the Southern Waste Information eXchange

Knox County may request from the Office of Cooperative Marketing, through their directories and information clearinghouse, the above information from other counties or regions within Tennessee.

### **6.3.8 Incentives to Encourage Program Participation**

The implementation of ordinances and other incentives provide alternatives for the county to ensure progress of a waste diversion plan toward established goals. The following options are under consideration by the county. Brief descriptions of several alternatives for ordinances and incentives are presented below. The county will continue to stress policies that encourage voluntary recycling resulting from awareness and education throughout the county. If voluntary participation proves inadequate to meet state goals, the county will consider more aggressive recycling support policies described in the subsections that follow.

In February 1994, the Knox County Commission approved amendments to the county's procurement ordinance that encourage the purchase of supplies and materials that contain recycled content. The ordinance requires all bidders to propose recycled products, if available, in their bids. If the products are determined to be suitable for use, the ordinance gives them preference over virgin materials. The ordinance also gives the County Executive authority to pay up to 5 percent more for recycled products over virgin materials on a case-by-case basis. In addition, the ordinance requires bidders to submit proposals on recycled paper and to print double sided. A copy of the ordinance is included as an attachment to this chapter.

Knox County is working through the East Tennessee Purchasing Association to offer Knox County's purchasing power to other counties and municipalities in East Tennessee. Joint purchasing could lower costs and make the purchase of recycled goods more economically feasible.

#### ***6.3.8.1 Mandatory Separation Ordinance***

Although considered a fairly aggressive alternative, the Knox County Solid Waste Planning Region can require that residential and/or commercial generators separate their recyclables from waste set out for disposal or taken for disposal to convenience centers. A properly implemented mandatory separation ordinance will ensure greater participation and material recovery than a voluntary program with equivalent levels of service. A mandatory separation ordinance sends a strong signal to generators about the importance of recycling and would ultimately influence waste reduction behaviors. In addition, this type of ordinance may be desirable for market development by ensuring a reliable flow of materials. The county would incur some administrative costs through enforcement of the ordinance to ensure compliance. This type of ordinance may specify which materials must be separated, how the materials must be set out for collection, and/or whether they may be taken to drop-off facilities or donated to non-profit groups. This type of ordinance will be considered by the county, particularly if during implementation of this plan, it appears the county will not otherwise be able to achieve the mandated 25 percent goal.

### **6.3.8.2 Service Level Requirements**

Knox County or the City of Knoxville may be able to require haulers to provide recycling collection services as a condition of their business licenses or franchise agreements. If the region enacts an ordinance that implements the recommendations of a solid waste management plan, this would require compliance by its affected haulers. Such an ordinance will require definition of standards for minimum service levels in different areas of the region and could benefit the region by specifying a greater level of detail than normally specified by a solid waste plan.

Service level ordinances may imply issues of equity between larger companies that are able to capitalize new recycling equipment and smaller firms that cannot. An enforcement system accompanying such an ordinance must be empowered to handle complaints about non-complying haulers. Key specifications in the ordinance would include materials to be collected, required frequency of collection, provision of any incentives for recycling (e.g., rate reductions to customers who actively recycle or penalties for those who do not recycle), and a payment system for compensation of costs to the hauler. While the expansion of recycling programs will decrease the amount of waste that requires disposal, maintenance of the private sector's role in providing waste management services may be enhanced by including recycling as part of such services.

### **6.3.8.3 Incentive Rate Structures**

Variable container garbage rate structures should be used as an incentive for participation in waste reduction, recycling, and composting programs. These require that waste generators pay more for service to dispose of high quantities of waste and rely on the incentive that disposal behavior can be used to affect the disposal bill. This non-mandatory type of rate structure relies on customer choice. A variable can rate structure, however, does not prohibit the implementation of a mandatory separation ordinance. Several rate structure types, in order of increasing recycling incentive, are as follows:

- Flat monthly charge (no incentive)
- Declining per-can charge
- Fixed per-can charge
- Increasing per-can charge
- Weight-based charge

While a weight-based charge may provide the highest incentive for waste diversion programs, it is also hardest to implement and is currently experimental. The county would effect rate structures in its jurisdiction by working with local haulers and by passing a minimum service level ordinance. This type of program will be implemented so that residents and businesses can reduce their garbage bill by recycling. Because any rate structure modification may be accompanied by a temporary increase in illegal dumping, increased enforcement will accompany any rate change. This plan recommends the county and city work together to implement a common incentive rate structure.

#### **6.3.8.4 Building Codes**

A common barrier to the separation of recyclables is the cost of providing collection containers, inconvenient locations for containers, and/or lack of building space for the containers. Building codes can be revised to require adequate space for recycling in new apartment buildings or commercial developments. County staff can then include adequate space for recycling as a criterion for accepting proposed building plans. Codes may require that new developments have adequate access for recycling trucks, safe storage for recyclables, and sufficient floor space for deskside or centralized collection bins. Unless existing facilities are also required to provide convenient access to recycling containers, which is often a difficult proposition, code revisions provide benefits over the long run as older business facilities are replaced with newer ones.

#### **6.3.8.5 Landfill Disposal Bans**

Although Knox Region has no jurisdiction over the Chestnut Ridge Landfill in Anderson County, the region should propose to Anderson County officials the banning of specific types of waste that create a significant burden on the waste stream. Materials that should be banned include yard waste, white goods, C&D debris, corrugated cardboard, white paper, newspaper, wood, and tires. If a disposal ban were implemented, several elements necessary to its success would include provision of recovery alternatives for banned materials, effective monitoring and enforcement, and clear communication of goals and implementation schedules to affected parties such as haulers, regulators, and generators. At this writing, the county plans to ban C&D debris, which will be diverted away from Class I Landfills to Class IV Landfills.

Once long-term alternatives for handling banned materials are developed and in place, the city may consider supporting these types of measures.

#### **6.3.8.6 Recycling Reporting Requirements**

This type of ordinance can require, as a condition of receiving a business license or permit, that recycling and private refuse haulers record and report documentation of quantities handled. In T.C.A. 68-31-863(b), state statutory requirements already specify that "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." The goal of implementing reporting requirements is to achieve accurate monitoring of progress toward meeting state waste reduction and recycling goals. While some legislation addresses this issue at the state level, this type of ordinance can be of assistance to a municipality's monitoring and measurement programs. T.C.A. 68-211-871(c) allows the region the opportunity to require haulers and others in the business to report on quantities recycled. Information from private haulers would be released by the Office of Solid Waste at the aggregate level only, in order to protect the confidentiality of private business information.

### **6.3.8.7 Business Solid Waste and Recycling Plans**

To encourage up-to-date waste management practices within the industrial and commercial sectors, the county will require business generating in excess of 200 tpy to prepare solid waste and recycling plans. The county will furnish each business with guidelines for the content of a brief plan, a waste reduction planning form, one or more samples of plans that can help business reduce their overall solid waste management costs by recycling and by technical assistance where needed. This program may be accompanied by county recognition and possibly awards for "green businesses." While this program will not require mandatory recycling for businesses, it will focus on helping business identify where they can reduce total costs by recycling. The county will consider other programs as necessary to reach the state-mandated 25 percent recycling goal.

### **6.3.9 Staffing Plan**

Staff to implement the various recycling programs described in this chapter will be obtained from a variety of sources including new hires at the Knox County Solid Waste Department and staff funded under other programs (e.g., Ijams Nature Center). Staff needed to manage the additional recycling at the existing and new convenience centers are described and budgeted in Chapter 5. Staff hours for personnel under other budgets (such as the school budgets or UT Agricultural Extension Service) are not included in this staffing plan and associated budget. Staff hours for future improved enforcement of litter and illegal dumping are also not included in this budget.

The implementation of the programs described under Section 6.5 will be accomplished by the Solid Waste Administrator, two Solid Waste Coordinators, an Administrative Assistant, a part-time intern from the county, and the Director of the City's Office of Solid Waste. The Administrator and Director are existing positions.

The coordinator positions are proposed to be filled in FY 1994/1995. One of the Solid Waste Coordinator positions will concentrate on residential recycling and special projects (such as HHW collection), while the other will emphasize commercial and industrial recycling. These positions will be necessary for developing and implementing programs, monitoring results, and implementing modifications and improvements to programs. As minimum qualifications, these positions will require experience in communications and public education; numerical, database, economics, and budgeting; negotiations and mediations; and consensus building. The coordinator positions will be leveraged by the involvement of volunteer groups such as Master Recyclers, Master Gardeners, and Master Composters.

Coordination and promotion of the county-wide Education and Promotion Element of the recycling program will be staffed by the Solid Waste Department. This program element will involve an estimated 50 percent of the Administrator's time, 30 percent of the Residential Coordinator's time, and 5 percent of the Business Coordinator's time. The

staff of the Solid Waste Department will coordinate with the UT CIS, county school board, and other organizations.

The Residential Recycling Element of the program will be implemented by both the city and the county. An estimated 10 percent of the County Administrator's time and 20 percent of the Residential Coordinator's time will be spent on this element. Fifteen percent of the City Director's time is estimated to be needed to manage the city's Super Center recycling and composting programs. Staff will coordinate with the UT Agricultural Extension Service staff on composting issues.

The Workplace Recycling Element of the program will be coordinated with approximately 10 percent of the Administrator's and 75 percent of the Business Coordinator's time for the planning period. The city as well as the county will be encouraged to participate in these programs, and some of the City Director's time will be required to accomplish this coordination.

The Other Recycling Programs Element includes school recycling and recovery of recyclables from C&D debris. The Residential Solid Waste Coordinator will work with the schools on recycling (20 percent of time in addition to time in education and promotion element) and the County Administrator will spend about 1 percent of the time for the first half of the planning period pursuing the feasibility of recycling from C&D debris.

### **6.3.10 Ten-Year Budget**

Table 6-3 presents a 10-year budget and funding plan (by the four main elements) for the recycling program. Costs for construction, upgrade, operation, and maintenance of the convenience and recycling centers are detailed in the Chapter 5 budget. New equipment and labor for these convenience centers also are included in Chapter 5 and are not repeated in this budget.

For the purposes of this budget estimate, two positions for Solid Waste Coordinator are proposed to be established to help implement the recycling program elements. The estimated yearly salary is \$35,000, each which includes 12 percent fringe benefits. These positions are planned for FY 1994/1995. The Administrative Assistant's yearly salary is estimated at \$20,000, to begin in FY 1994/1995.

For each of the four program elements and based on the estimated percent of time each staff member will spend on that program element, portions of the salaries for the Administrator, Coordinators, Administrative Assistant, and City Director are presented in Table 6-3.

Other types of costs that are proposed for program implementation include a media campaign in FY 1994/1995 and FY 1995/1996, mailings, development of handouts and brochures, coordination of workshops, artwork preparation for various ads, awards,

Table 6-3  
Projected 10 Year Budget and Funding Plan

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
<b>Recycling</b>											
<b>Operating Revenues</b>											
Property Taxes (a)	\$1,078,250	\$1,425,260	\$1,414,260	\$1,439,260	\$1,439,260	\$1,439,260	\$1,444,260	\$1,439,260	\$1,439,260	\$1,439,260	\$1,439,260
Sale of Materials (b)											
Total	1,078,250	1,425,260	1,414,260	1,439,260	1,439,260	1,439,260	1,444,260	1,439,260	1,439,260	1,439,260	1,439,260
<b>Operating Expenditures</b>											
Knoxville's Continuing Program (c)	\$1,033,960	\$1,034,000	\$1,034,000	\$1,034,000	\$1,034,000	\$1,034,000	\$1,034,000	\$1,034,000	\$1,034,000	\$1,034,000	\$1,034,000
County's Continuing Program (d)	69,290	69,000	69,000	69,000	69,000	69,000	69,000	69,000	69,000	69,000	69,000
Recycling Technician	0	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
County-Wide Education	0	55,930	55,930	55,930	55,930	55,930	55,930	55,930	55,930	55,930	55,930
Workplace Recycling	0	61,930	51,930	51,930	51,930	51,930	51,930	51,930	51,930	51,930	51,930
Residential Recycling (e)	0	197,500	192,500	192,500	192,500	192,500	197,500	192,500	192,500	192,500	192,500
Other Recycling	0	18,900	20,900	20,900	20,900	20,900	20,900	20,900	20,900	20,900	20,900
Poss. Add'l 40,000 Tons Yd Waste (f)	0	0	0	0	0	0	0	0	0	0	0
Total	1,103,250	1,450,260	1,439,260	1,439,260	1,439,260	1,439,260	1,444,260	1,439,260	1,439,260	1,439,260	1,439,260
<b>Net Operating Income</b>	(25,000)	(25,000)	(25,000)	0	0	0	0	0	0	0	0
<b>Non - Operating Revenues</b>											
State Recycling Rebate Grants (g)	\$25,000	\$25,000	\$25,000								
Total	25,000	25,000	25,000	0	0	0	0	0	0	0	0
<b>Non - Operating Expenditures</b>											
Total	0	0	0	0	0	0	0	0	0	0	0
<b>Net Non - Operating Income</b>	25,000	25,000	25,000	0	0	0	0	0	0	0	0
<b>Net Income</b>	0	0	0	0	0	0	0	0	0	0	0

**NOTES:**

- a. Property tax funding from City and County residents is anticipated to continue as the primary revenue source.
- b. Revenues from sale of recycled materials are already deducted from the cost of Knoxville's continuing recycling program.
- c. The City of Knoxville's recycling program is expected to continue throughout the planning period at 1994 funding levels. This program primarily relates to the collection and composting of yard wastes.
- d. Knox County's recycling activities are also anticipated to continue at 1994 funding levels.
- e. Residential recycling includes \$5,000 for composting bins in 1995 and 1997.
- f. The County could possibly need to process an additional 40,000 tons of yard waste in the future, but no decision has yet been made. Therefore, no costs are included for implementation of this program.
- g. State recycling rebate grant to Knox County; the amount shown is the amount budgeted by the County for FY 94. This level is assumed to continue through FY 96, when the state program ends.



meetings with industries and schools, supplies and training materials, and initial and ongoing educational and promotional aspects of the program. Except for the pallet program workshop (budgeted at \$10,000), costs other than labor for the remaining program elements range from \$500 to \$3,000 per year for each of the planning years. Costs for the media campaign, which is budgeted at \$50,000 for each of the first two years, are included in the Chapter 9 budget.

### **6.3.11 Funding Plan**

Funding for the Knox County Solid Waste Administrator position is from the county property taxes. The new Solid Waste Coordinator positions and the Administrative Assistant position will be funded from property taxes. Funding for the City Director is from city property taxes and the general revenue fund.

Funding for the actual programs, such as the city's yard waste composting program, is from property taxes. Funding for costs (other than labor) associated with implementing the various program elements will also be from general revenues.

Revenues generated from the sale of recyclable materials at the county convenience centers are returned to the Knox County Solid Waste Fund. Revenues from the sale of recyclable materials at the city Super Centers are deducted from the costs of hauling and tipping fees. State rebate grants are available through FY 1995/1996 for the local recycling programs and are included in the budget as non-operating revenues. Rebate grants have been available to the City of Knoxville, the Town of Farragut, and Knox County. Grants will be applied for until they are no longer offered. The majority of the funding for the recycling program will likely come from appropriations from the county and city general funds; less than 10 percent will likely come from the combined sale of recovered materials and grant money (while available).

### **6.3.12 Data Collection**

For the successful operation of a recycling program, information and data must be collected for making evaluations. Such evaluations are necessary to gauge the success of the program in terms of costs and benefits and to assist in prioritizing yearly budget and resource allocations. At a minimum, the data collection for the convenience and recycling centers and city drop-off and major business generators sites should include the following:

- Amounts of materials collected by classifications and types
- Total amount of materials disposed of at convenience centers
- Number of residents using drop-offs and residential programs (participating rate estimates)

- Total money collected from selling recyclable materials
- Capital and operations costs for recycling operations

The above information should be collected monthly on a standard reporting form and sent to the Solid Waste Administrator, who is responsible for maintaining a central file for each element of the program. A yearly report should be prepared by the Administrator and submitted to the Division of Solid Waste after approval from the Knox County Solid Waste Planning Region Board.

#### **6.4 Coordination of Recycling Program with Other Programs**

The expanded recycling program proposed for Knox Region will depend on a closely integrated arrangement between the public and private sector, both for profit and non-profit. The Knox County Solid Waste Department will work closely with the City of Knoxville Office of Solid Waste and with private haulers to coordinate and implement programs to meet the waste reduction and recycling goals. In particular, the city and county will work together closely on the issue of business recycling within the city limits.

#### **6.5 Implementation Schedule**

A composite 10-year implementation schedule for the waste reduction strategies described in Chapter 4 and the recycling programs described in Chapter 6 is presented in Table 6-4. It is weighted toward the beginning of the planning period because many aspects of the program are necessary to fulfill the 25 percent waste reduction goal. These programs must be operational by December 31, 1995.

#### **6.6 Specific Allocation of Responsibility**

Responsibility for implementation of the recycling program in Knox County lies primarily with the Knox County Solid Waste Department and with the City of Knoxville Office of Solid Waste. The responsibilities by program element are detailed in Table 6-5. Other groups that will have implementation responsibility include the Chamber of Commerce, UT CIS, UT Agricultural Extension Service, and the Knox County School System.

**Table 6-4  
Ten-Year Implementation Timetable for Waste Reduction and Recycling Strategies**

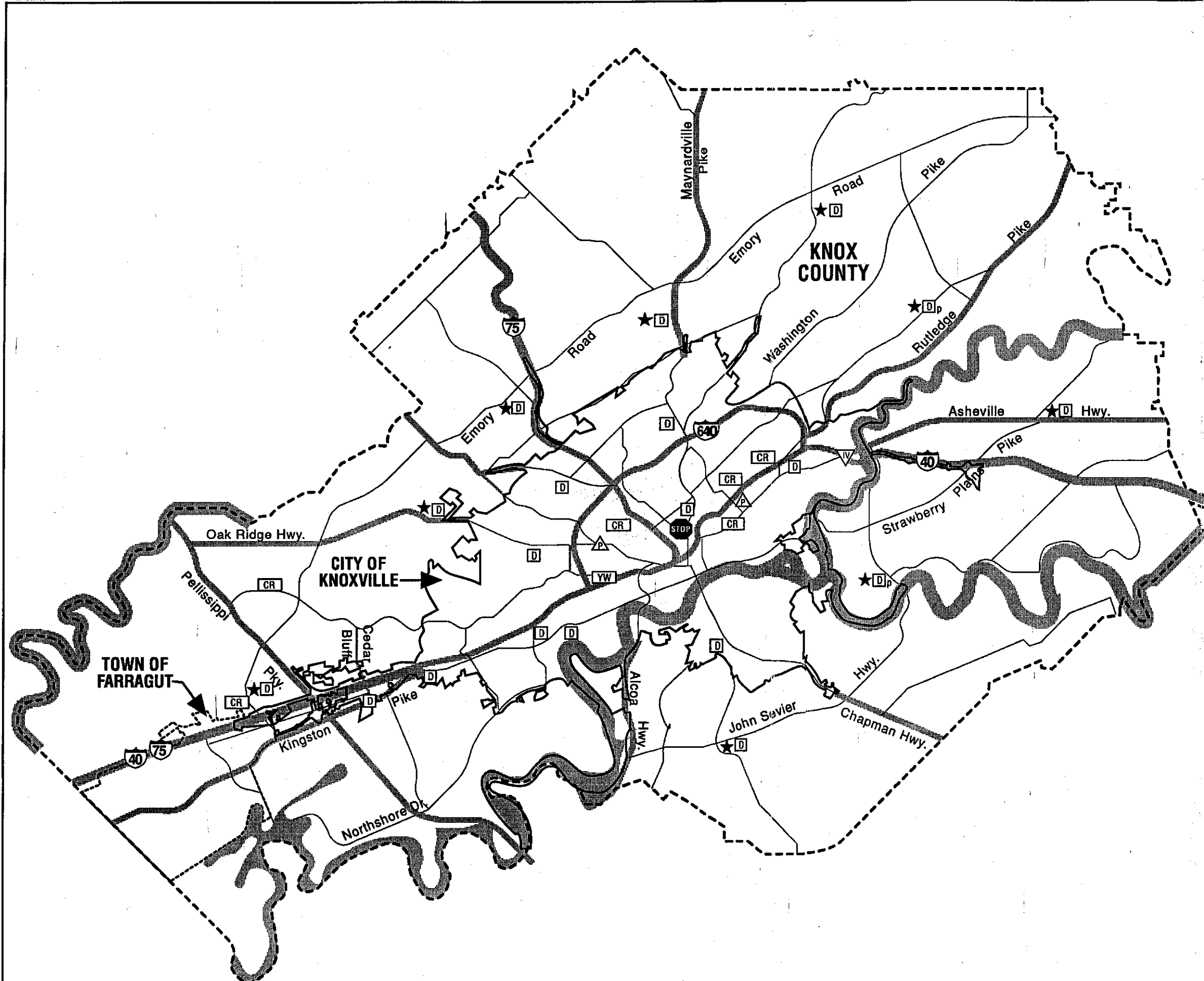
Fiscal Year	Task	Target Date
1993/1994	<ol style="list-style-type: none"> <li>1. Information campaign on true costs of waste disposal (general public).</li> <li>2. Meet with representatives of waste haulers to discuss potential for variable rate charges.</li> <li>3. Coordinate county participation in city's contracted yard waste operation.</li> <li>4. Establish at least two business focus groups.</li> </ol>	<ol style="list-style-type: none"> <li>1. 06/30/94</li> <li>2. 06/30/94</li> <li>3. 06/30/94</li> <li>4. 06/30/94</li> </ol>
1994/1995	<ol style="list-style-type: none"> <li>1. Immediate hiring of all staff necessary for implementation of this plan.</li> <li>2. Establish policies for waste reduction, reuse, and purchase of recycled materials for all government offices.</li> <li>3. Begin planning for office paper recycling at all government buildings.</li> <li>4. Set standards at convenience centers.</li> <li>5. Information campaign targeted to office building managers.</li> <li>6. Begin planning for a home and neighborhood Master Composter education program with UT Agricultural Extension.</li> <li>7. Train attendants to promote recycling at all convenience centers.</li> <li>8. Information campaign on yard waste targeted to county residents.</li> <li>9. Set up yard waste composting demonstrations at convenience centers.</li> <li>10. New signage for recyclables at convenience centers.</li> <li>11. Recycling available at all Knox County schools (paper, glass, aluminum, plastic).</li> <li>12. Information campaign on illegal dumping (general public).</li> <li>13. Establish two additional business focus groups.</li> <li>14. Consider banning yard waste disposal at convenience centers.</li> <li>15. Increase fines for illegal dumping and littering and/or require community service.</li> <li>16. Begin information campaign about convenience centers disposal fee.</li> <li>17. Develop information campaign targeted to restaurants and hospitality industry.</li> <li>18. Establish office paper and cardboard recycling in five new target zones.</li> <li>19. Coordinate industries for waste exchange listing with southeast.</li> <li>20. Establish office paper recycling programs in at least five new target zones.</li> <li>21. Waste audit completed for at least three county-operated facilities.</li> <li>22. Provide economic incentives for industries using recycled materials as feedstock.</li> <li>23. Consider charging a fee for waste disposal at convenience centers.</li> <li>24. Ban newspaper and cardboard disposal at convenience centers.</li> <li>25. Collect recycling operating data for 1994 and submit to Solid Waste Board.</li> <li>26. Information campaign targeted to construction industry.</li> <li>27. Begin waste exchange program for business and industry.</li> <li>28. Negotiate ban of C&amp;D debris from Chestnut Ridge Landfill.</li> <li>29. Submit Annual Report to state.</li> <li>30. Propose building codes to require recycling in apartment buildings and commercial developments.</li> <li>31. Consider removing hauling and landfill disposal costs for convenience centers from county taxes.</li> </ol>	<ol style="list-style-type: none"> <li>1. 07/31/94</li> <li>2. 07/31/94</li> <li>3. 07/31/94</li> <li>4. 07/31/94</li> <li>5. 07/31/94</li> <li>6. 07/31/94</li> <li>7. 08/31/94</li> <li>8. 08/31/94</li> <li>9. 08/31/94</li> <li>10. 08/31/94</li> <li>11. 08/31/94</li> <li>12. 09/30/94</li> <li>13. 10/31/94</li> <li>14. 10/31/94</li> <li>15. 10/31/94</li> <li>16. 11/30/94</li> <li>17. 12/31/94</li> <li>18. 12/31/94</li> <li>19. 12/31/94</li> <li>20. 12/31/94</li> <li>21. 12/31/94</li> <li>22. 01/01/95</li> <li>23. 01/01/95</li> <li>24. 01/01/95</li> <li>25. 01/31/95</li> <li>26. 01/31/95</li> <li>27. 02/01/95</li> <li>28. 02/28/95</li> <li>29. 03/01/95</li> <li>30. 04/30/95</li> <li>31. 06/30/95</li> </ol>

**Table 6-4**  
**Ten-Year Implementation Timetable for Waste Reduction and Recycling Strategies**

Fiscal Year	Task	Target Date
1995/1996	<ol style="list-style-type: none"> <li>1. Evaluate all programs to determine quantities reduced.</li> <li>2. Collect operating data for 1995 and submit to Solid Waste Board.</li> <li>3. Submit Annual Report to state.</li> <li>4. Submit Annual Report to Office of Cooperative Marketing.</li> </ol>	<ol style="list-style-type: none"> <li>1. 07/01/95</li> <li>2. 01/31/96</li> <li>3. 03/01/96</li> <li>4. 03/01/96</li> </ol>
1996/1997	<ol style="list-style-type: none"> <li>1. Collect operating data for 1996 and submit to Solid Waste Board.</li> <li>2. Submit Annual Report to state.</li> <li>3. Submit Annual Report to Office of Cooperating Marketing.</li> <li>4. Ongoing education.</li> </ol>	<ol style="list-style-type: none"> <li>1. 01/31/97</li> <li>2. 03/01/97</li> <li>3. 03/01/97</li> <li>4. Ongoing</li> </ol>
1997/1998	<ol style="list-style-type: none"> <li>1. Collect operating data for 1997 and submit to Solid Waste Board.</li> <li>2. Submit Annual Report to state.</li> <li>3. Submit Annual Report to Office of Cooperative Marketing.</li> <li>4. Ongoing education.</li> </ol>	<ol style="list-style-type: none"> <li>1. 01/31/98</li> <li>2. 03/01/98</li> <li>3. 03/01/98</li> <li>4. Ongoing</li> </ol>
1998/1999	<ol style="list-style-type: none"> <li>1. Collect operating data for 1998 and submit to Solid Waste Board.</li> <li>2. Submit Annual Report to state.</li> <li>3. Submit Annual Report to Office of Cooperative Marketing.</li> <li>4. Ongoing education.</li> </ol>	<ol style="list-style-type: none"> <li>1. 01/31/99</li> <li>2. 03/01/99</li> <li>3. 03/01/99</li> <li>4. Ongoing</li> </ol>
1999/2000	<ol style="list-style-type: none"> <li>1. Collect operating data for 1999 and submit to Solid Waste Board.</li> <li>2. Submit Annual Report to state.</li> <li>3. Submit Annual Report to Office of Cooperative Marketing.</li> <li>4. Ongoing education.</li> </ol>	<ol style="list-style-type: none"> <li>1. 01/31/00</li> <li>2. 03/01/00</li> <li>3. 03/01/00</li> <li>4. Ongoing</li> </ol>
2000/2001	<ol style="list-style-type: none"> <li>1. Collect operating data for 2000 and submit to Solid Waste Board.</li> <li>2. Submit Annual Report to state.</li> <li>3. Submit Annual Report to Office of Cooperative Marketing.</li> <li>4. Ongoing education.</li> </ol>	<ol style="list-style-type: none"> <li>1. 01/31/01</li> <li>2. 03/01/01</li> <li>3. 03/01/01</li> <li>4. Ongoing</li> </ol>
2001/2002	<ol style="list-style-type: none"> <li>1. Collect operating data for 2001 and submit to Solid Waste Board.</li> <li>2. Submit Annual Report to state.</li> <li>3. Submit Annual Report to Office of Cooperative Marketing.</li> <li>4. Ongoing education.</li> </ol>	<ol style="list-style-type: none"> <li>1. 01/31/02</li> <li>2. 03/01/02</li> <li>3. 03/01/02</li> <li>4. Ongoing</li> </ol>
2002/2003	<ol style="list-style-type: none"> <li>1. Collect operating data for 2002 and submit to Solid Waste Board.</li> <li>2. Submit Annual Report to state.</li> <li>3. Submit Annual Report to Office of Cooperative Marketing.</li> <li>4. Ongoing education.</li> </ol>	<ol style="list-style-type: none"> <li>1. 01/31/03</li> <li>2. 03/01/03</li> <li>3. 03/01/03</li> <li>4. Ongoing</li> </ol>
2003/2004	<ol style="list-style-type: none"> <li>1. Collect operating data for 2003 and submit to Solid Waste Board.</li> <li>2. Submit Annual Report to state.</li> <li>3. Submit Annual Report to Office of Cooperative Marketing.</li> <li>4. Ongoing education.</li> </ol>	<ol style="list-style-type: none"> <li>1. 01/31/04</li> <li>2. 03/01/04</li> <li>3. 03/01/04</li> <li>4. Ongoing</li> </ol>

**Table 6-5  
Allocation of Responsibility  
Knox Recycling Program**

<b>Program Element</b>	<b>Person/Organization Responsible</b>
<b>Educational and Promotional Program</b>	
School curricula	County Solid Waste Department
Waste audits	County Solid Waste Department/UT CIS
Technical assistance	County and City Solid Waste Departments
Waste reduction planning	County Solid Waste Department/UT CIS
In-house waste reduction	County Solid Waste Department/UT CIS
Business support	County Solid Waste Department/UT CIS
Awards/public recognition	County Solid Waste Department/UT CIS
<b>Workplace Recycling</b>	
Workplace focus groups	County Solid Waste Department
Office paper recycling	County Solid Waste Department
Cardboard recycling	County Solid Waste Department
Waste exchange	County Solid Waste Department/Chamber of Commerce
Pallet exchange	County Solid Waste Department/Chamber of Commerce
<b>Residential Recycling</b>	
Rural drop-off	County Solid Waste Department/UT Agricultural Extension
City super centers	City of Knoxville Office of Solid Waste
Backyard composting	UT Agricultural Extension/County Solid Waste Department/City Office of Solid Waste/Ijams Nature Center
County curbside program	County Solid Waste Department
Yard waste program (city)	City Office of Solid Waste/County promotion
<b>Other Recycling Programs</b>	
School recycling	County schools with assistance from the Knox County Solid Waste Department and the City of Knoxville Office of Solid Waste
Recyclables recovery from C&D debris	County Solid Waste Department




**LEGEND**

- Knox County Boundary
- City of Knoxville Boundary
- Town of Farragut Boundary
- Interstate Highway
- River
- Street
- Convenience Center
- Transfer Station
- Permitted Class IV Landfill
- Subscript Small p Indicates a Planned Facility
- Processing Center for Recyclables
- Drop-off Recycling Center (city sites, convenience centers)
- Commercial Recyclers
- End Use Industry that Purchases Recovered Materials Directly
- City Yardwaste Composting

NORTH  
  
NOT TO SCALE

Figure 6.2  
**Regional Recycling Infrastructure**  
KNOX SOLID WASTE PLANNING REGION



Residential	119,962	30%
Commercial	107,966	27%
Institutional	35,989	9%
Industrial	99,968	25%
Special	35,989	9%
<b>Total 1995 Tons</b>	<b>399,874</b>	<b>100%</b>

Program	Service Area (% of County)	New Participation Rate (in %)	Materials:												Tons By Program	% Waste Stream Reduction	Percent By Sector	
			Paper	Glass	Ferrous	Aluminum	Non-Ferrous	Plastics	Rubber/Leaf	Textiles	Wood	Foodwaste	Yardwaste	Inorganics				Other
			40.0%	7.1%	6.5%	1.4%	0.6%	8.0%	2.5%	2.1%	3.6%	7.4%	17.6%	1.5%				1.7%
			75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	85%	85%				
<b>RESIDENTIAL</b>																		
Drop-off, Rural	50	1	187	33	30	7									295	0.1%		
City Super Centers	50	1	180	32	29	6			9						301	0.1%	6464.933	
Curbside, County	50	20	3,599	639	585	126									5,668	1.4%		
BY Composting	25	5												201	201	0.1%	1.6% Residential	
<b>COMMERCIAL</b>																		
Commercial	100	20	6,478	1,150		227									10,705	2.7%	2.7% Commercial	
<b>INSTITUTIONAL</b>																		
Government Offices	100	50	5,398	958		189									8,921	2.2%	2.2% Institutional	
<b>INDUSTRIAL</b>																		
Industrial	100	20	5,998	1,065		210									9,912	2.5%	2.5% Industrial	
<b>OTHER</b>																		
Yard Waste Ban	100	75													31,521	7.9%	7.9% Yard Waste Ban	
Class IV Diversion															27,000	6.8%	6.8% Class IV Diversion	
<b>SUBTOTAL NEW PROGRAMS</b>			21,840	3,877	644	765	0	793	0	9	0	0	39,586	8	27,000	23.6%	23.7% SubTotal	
<b>Plus Existing Recycling Rate</b>															10,696 <sup>2</sup>	2.7%		
<b>TOTAL 1995 RECYCLING QUANTITIES</b>															105,219	26.3%	26.4 TOTAL	

Notes: 1. All figures in annual 1995 tons unless otherwise indicated.  
2. Assumes existing recycling at same rate (2.67%) as 1993.

ORDINANCE

AN ORDINANCE OF THE COMMISSION  
OF KNOX COUNTY, TENNESSEE  
AMENDING ORDINANCE O-90-9-113,  
AS AMENDED BY ORDINANCES O-91-4-102,  
O-92-2-102, O-92-5-104, AND  
O-93-3-103, ESTABLISHING PROCEDURES  
AND PROGRAMS TO PROMOTE AND INCREASE  
THE PROCUREMENT OF RECYCLED PRODUCTS  
AND RECYCLABLE PRODUCTS.

ORDINANCE NO.: 0-94-1-101

REQUESTED BY: Joe Hamby, Director of  
Purchasing and Personnel, Terry  
McKee and John Evans

PREPARED BY: Knox County Law Director

APPROVED AS TO FORM  
AND CORRECTNESS:

Richard T. Buler

APPROVED 1ST READING: 1-24-94

APPROVED 2ND READING: 2-28-94

APPROVED EMERGENCY: \_\_\_\_\_  
(Yes) (No)

VETOED: \_\_\_\_\_  
Date

VETO OVERRIDE: \_\_\_\_\_  
Date

MINUTE BOOK \_\_\_\_\_ PAGE \_\_\_\_\_

WHEREAS, Knox County has adopted a charter form of government, and

WHEREAS, Knox County is mandated by law to reduce its contributions to municipal



solid waste landfills by 25% before 1996; and

WHEREAS, it is necessary to amend Ordinance O-90-9-113 establishing the Procurement Code to establish procedures and programs to promote and increase the procurement of recycled products and recyclable products by the departments and agencies within Knox County government.

NOW, THEREFORE, BE IT ORDAINED BY THE COMMISSION OF KNOX COUNTY AS FOLLOWS:

Section 1. That Ordinance O-90-9-113, as amended by Ordinance O-91-4-102, O-92-2-102, O-92-5-104, and O-93-3-103, shall be amended as follows:

Amendment 1: Section 1-9. Definitions of Terms is amended by adding the following terms and definitions to be integrated in alphabetical order:

(1) Designated Recycled Products - Means a product designated in this Code or by the Division of Procurement, that meets or surpasses the County minimum recycled content standards. Designated recycled products include paper and paper products including, but not limited to, (a) imprinted letterhead, envelopes and business cards, (b) compost products, (c) cement and asphalt concrete containing glass cullet, recycled fiber or plastic, tire rubber or fly ash, re-crushed cement concrete aggregate and asphalt, (d) lubricating oil and hydraulic oil with refined oil content, (e) antifreeze, (f) outdoor wood product substitutes made from recycled plastic, (g) remanufactured tires and products made from recycled tire rubber, (h) building insulation products, and (i) remanufactured laser printer toner cartridges.

(2) EPA - Means the United States Environmental Protection Agency.

(3) Minimum Recycled Contents Standards - Means standards that specify the minimum level of recycled material and/or post consumer recycled material necessary for designated products to qualify as recycled products.

(4) Post Consumer Waste - Means a material or product that has served its intended use and has been discarded for disposal or recovery by a final consumer.

(5) Recycled Material - Means waste material and by-products that have been recovered or diverted from solid waste and can be utilized in place of virgin material in manufacturing a product. Recycled material may consist of materials derived from post consumer, manufacturing, industrial, agricultural waste, and other items, all of which can be used in the manufacture of new products.

(6) Practicable - Means sufficient in performance and available at reasonable price. Performance is the first consideration in establishing the practicability of a product. The performance standards or requirements of any given product are within the discretion of the user of such product.

(7) Price Preference - Means an extra percentage (or cost) that the County may consider paying for recycled products. Price is the secondary consideration in determining practicability. When any user has determined that a product shall perform sufficiently, the County Executive, shall determine if the cost is justified.

(8) Recyclable Product - Means a product which, after its intended end use, can demonstratively be diverted from solid waste stream for use as raw material in the manufacture of another product.

(9) U.S.E.P.A. Product Standards - Means the product standards of the United States Environmental Protection Agency (EPA) for recycled content published in the Code of the Federal Regulations.

Amendment 2: Section 2-5. Authority of the Purchasing Agent shall be amended as follows:

(8) In conformity with EPA guidelines, the purchasing agent shall promote the purchase of recovered materials by use of explicit statements in solicitations for bids, discussion of commitment to buying recycled materials at pre-bid conferences, etc.

(9) The Purchasing Agent must review the range of each estimate in each bid and specification to determine if such estimate and specification is using the highest percentage of recovered materials.

(10) The Purchasing Agent may not purchase items containing recovered materials when:

- a. Prices are unreasonable.
- b. Applying minimum contents standards results in inadequate competition.
- c. Obtaining designated items results in unusual and unreasonable delays.
- d. Guideline items do not meet all reasonable performance specifications.

(11) The Purchasing Agent shall comply with EPA established guidelines for the purchase of the following items with recycled content:

- A. Paper and paper products.
- B. Lubricating oils.
- C. Retreaded tires.
- D. Building insulation products.
- E. Cement and concrete containing fly ash.

(12) The Purchasing Agent shall require designated recycled products to be purchased by County Departments whenever practicable.

(13) The Purchasing Agent shall promulgate minimum recycled content standards for designated recycled products to maximize recycled product availability, recycled content, and competition. The minimum recycled content standards shall be reported with the standard

departmental reports to Knox County Commission each quarter.

(14) The Purchasing Agent shall inform County Departments of their responsibilities under this Code to communicate to departments the list of designated recycled products, and to provide departments with information about recycled product procurement opportunities.

(15) The Purchasing Agent must continually review the range of estimates and certifications they receive from vendors to determine whether they are using the highest percentage of recovered materials.

(16) The Purchasing Agent shall inform vendors that they must estimate the percentage of and certify the actual content of recovered materials in their products. Such estimates and certifications are most easily expressed as a percentage of a total content.

(17) The Purchasing Agent may establish a 5% price preference for any designated recycled product, with the authorization of the County Executive. The Purchasing Agent may require procurement of recycled products above the levels expressed in this Code. The Purchasing Agent shall encourage its contractors to use recycled products and recyclable products whenever practicable. Stated preferences for such materials will be factored in bid awards.

(18) The Purchasing Agent shall promote the use of recycled products and recyclable products by publicizing its procurement program.

Amendment 3. Section 3-17 shall be amended to include the following:

It shall be the responsibility of all County Departments to purchase recyclable products whenever practicable. County departments shall evaluate each designated recycled product to determine the extent to which the product may be practicably used by the Department and its contractors. County Departments shall ensure that contracts issued by the Department require recycled material content whenever practicable.

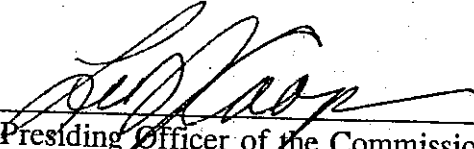
Nothing in this Code shall preclude the Purchasing Agent or County Department from requiring recycled material content as a bid specification. Nothing in this Code shall be construed as requiring the Purchasing Agent, a Department or contractor to procure products that do not perform adequately for their intended use or are not available at a reasonable price in a reasonable period of time.

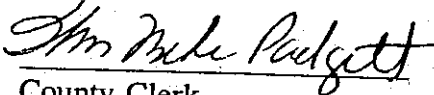
County Departments shall ensure that all contracts or printing require the use of recycled paper and the inclusion of the chasing arrow symbol identifying the recycled content of the paper whenever practicable. County departments shall further ensure that the title page of each internal report printed or copied on recycled paper bears an imprint identifying the recycled content of the paper.

Requests for bids and proposals issued by the Purchasing Agent or County

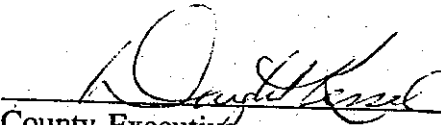
Department shall encourage contractors and consultants to (1) use recycled paper for proposals and for any printed or photocopied material created pursuant to a contract with the County whenever practicable, and (2) use both sides of the paper sheets for reports submitted to the County whenever practicable, if not practicable, contractor shall explain why it is not practicable.

Section 2. This Ordinance shall take effect upon passage, the public welfare requiring it.

  
Date 4/25/94  
Presiding Officer of the Commission

  
County Clerk

Approved:

  
Date 4/29/94  
County Executive

Vetoed:

\_\_\_\_\_  
Date \_\_\_\_\_  
County Executive

## Chapter 7

# Composting, Solid Waste Processing, Waste-to-Energy, and Incineration

Chapter 7 describes specific solid waste management alternatives available to Knox Region and addresses the viability of these alternatives based on the county's waste management needs for the next 10 years. The specific alternatives to be evaluated are as follows:

- Yard Waste Composting
- Solid Waste Processing
- Waste-to-Energy (WTE)
- Incineration

Options available to Knox Region are limited because of economic and physical conditions. Several of these options are difficult or logistically impossible for a jurisdiction such as Knox Region to implement. The municipal solid waste composting option was not considered because the expense of constructing a facility could not be justified, given the available capacity at Chestnut Ridge Landfill. The following sections describe each of the above options and their applicability to Knox Region.

## 7.1 Yard Waste Composting

### 7.1.1 System Description

Yard waste composting can divert a large amount of waste from Class I Landfill disposal. Yard waste consists of leaves, grass clippings, garden waste, prunings, and brush. Sources of these wastes include residents, landscapers, nurseries, parks, and public works and construction crews. In many communities, yard waste comprises between 5 and 30 percent of the waste stream. The biodegradability of yard waste offers the opportunity to reduce its volume by applying simple composting techniques that accelerate its natural decomposition. For example, the composting process can reduce the initial volume of leaves by 60 to 80 percent. This percentage varies with the initial physical condition of the leaves, site conditions, and the nature of the finished compost product.

Yard waste can be collected through self-hauling to a designated site or by pickup systems. Designated drop sites may restrict the type of material accepted and impose a disposal fee that presumably would be less than other disposal options. Pickup systems may be on-call or may be a regularly scheduled curbside service. The pickup system may be incorporated into an existing collection system for refuse, although the collection of yard waste often depends on the season and supply of material.

In December 1993, the City of Knoxville issued a request for proposal (RFP) to site and operate a yard-waste facility to handle brush and leaves for a period of 3 to 10 years. The

RFP specified that the bidder must "demonstrate an ability to accept, process, and dispose of unanticipated increased levels of yard waste." The City of Knoxville is anticipating continued operations within the City consistent with 1993 levels.

The estimate for the amount of yard waste produced within Knox County is based on EPA national estimates that 18 percent of the waste stream is yard waste. Considering that the city collects 30,000 tons annually, county residents are anticipated to produce twice as much yard waste.

The region's proposed goal is a reduction of 31,670 tons by 1994 and 45,717 tons by 2003, which assumes that the amount of yard waste accepted by the city remains constant at 30,000 tons annually. The county proposes to coordinate with the city and its contractor to accept a portion of the additional projected tons of yard waste that will be necessary to meet reduction goals. The city (or its contractor) would also have to develop a mechanism to weigh the amount of yard waste accepted from non-city sources and a method to charge for acceptance of that waste.

The level of waste reduction will increase by about 50 percent over current yard waste collection efforts. The county must consider working with the city and its contractor to expand the proposed facility or developing its own facility capable of accepting and processing yard waste long before 2003. The county may have to consider some form of yard waste collection, but at this time no funds are budgeted for county yard waste collection.

A yard waste program with high participation rate can divert between 3 and 10 percent of the waste stream. A convenient collection system is probably the most important factor in establishing a successful program.

Zoning ordinances may classify composting operations as light industrial, which may hinder the siting of such a facility close to the source of material (i.e., residential areas). Residents may oppose siting such a facility in their neighborhoods because of the potential for dust, noise, and odors. Space requirements for a composting operation can be substantial. Leaf-only operations require approximately 1 acre per 3,000 yd<sup>3</sup> of unground leaves and 1 acre per 4,500 yd<sup>3</sup> of ground leaves.

The reported operating costs for yard waste composting operations average \$10 to \$30 per ton. The facilities require land, labor, and equipment. Equipment for large-scale operations include grinders, chippers, screens, front-end loaders, pickup trucks, and sprinkler systems. Costs are partially offset by end-product sales and the avoided costs of alternative disposal. Compost or uncomposted chips or fines (mulch) may be marketed to residents, landscapers, and public works crews. These yard wastes may also be used by nurseries, golf courses, and cemeteries.

### **7.1.2 Applicability**

Yard waste in the City of Knoxville is currently collected by the Public Service Department. Leaves are collected by vacuum trucks. Knox County residents who live outside the City of Knoxville can take their yard waste in bags to the convenience centers. Some county residents burn their yard waste, compost it for use in gardens, or dispose of it into the woods or in ditches. Private tree trimming companies use mobile chipping units.

## **7.2 Solid Waste Processing**

### **7.2.1 System Description**

Solid waste processing is defined as a combination of structures, machinery, or devices to perform solid waste processing. Waste processing is typically used to separate and process desirable materials from the mixed waste stream for recycling. Recycling involves a variety of processing techniques; some require special equipment to meet material preparation specifications required by buyers. Examples of equipment that may be used in recyclables processing operations within Knox County include the following:

- Balers—newspaper, cardboard, and plastics are often baled to achieve larger transport payloads, thereby reducing transportation costs
- Glass Crushers—reduce volumes by 50 to 70 percent
- Can Flatteners—separate ferrous and bimetal cans and reduce volumes by 50 to 70 percent
- Wood Grinders—large pieces of wood (pallets, branches, etc.) are shredded into chips that can be used as mulch

### **7.2.2 Applicability**

Knox County has no current plans for processing the mixed waste stream. The use of the above waste processing equipment will be part of Knox County's integrated solid waste management system dependent on the types and quantities of materials chosen for recycling, market demand, and cost for implementing the recycling processing equipment.

## **7.3 Waste-to-Energy/Incineration**

### **7.3.1 System Description**

Typically, WTE facilities are field-erected or modular systems. The field-erected incinerators typically have a limited amount of prefabrication. Modular units are

prefabricated and shipped to a site for assembly and are usually sized to burn 100 tpd or less.

The availability of markets for recovered energy will determine the viability of a WTE facility. Without revenue from the recovered energy, the cost of building and operating the facility can greatly exceed the cost of an alternative means of waste management. Energy markets are either steam or electricity customers. Because of the high cost of steam and condensate piping and the substantial heat loss that occurs in steam transport, steam customers are usually located within 3 miles of the facility. A WTE facility that generates electricity is less restricted in terms of proximity to a customer because the customer will usually be a utility company, and connection to the utility powerlines can be made at numerous points along the distribution grid. Although electric utilities are less desirable than steam customers from the standpoint of capital investment and revenue, they tend to be more stable and are more likely to participate in long-term agreements.

### **7.3.2 Applicability**

Knox County has developed primarily as a residential and agricultural area. Knoxville and Knox County joined together in a waste authority in 1986 to build a 900-tpd WTE facility. The project was financed with revenue bonds under old tax laws that allowed arbitrage earnings to be collected on unspent proceeds until the project bills came due. This financing arrangement produced millions of dollars in interest that was spent on research, development, and the successful attainment of federal, state, and county air, solid waste, and National Pollutant Discharge Elimination System (NPDES) permits. In 1990, Knoxville's mayor withdrew the city from the project, causing its collapse. Such arbitrage earnings are not possible under new tax laws, which render such a project more difficult to finance. The Knox Solid Waste Planning Region Board has no plans to consider WTE facilities in the next decade because of economics and the potential for opposition. Landfill capacity also exists for the region through the decade-long planning period.

For these reasons, a WTE facility is not considered a feasible part of the county's future management of solid waste.



## **Chapter 8 Disposal Capacity**

### **8.1 Regional Demand For Disposal Capacity**

In determining the solid waste disposal needs for a region, a disposal capacity analysis is typically performed whereby the projected quantity of solid waste requiring disposal is compared with the current remaining disposal capacity for the region. In this analysis, the projected waste quantity requiring disposal is the projected amount of waste remaining after waste reduction. Waste reductions include the use of source reduction, source diversion, recycling, reuse, and other solid waste technologies discussed in Chapters 4, 6, and 7. The effectiveness of these programs are highly influenced by the degree of citizen and business participation.

Within Knox County no Class I Landfill is currently available or is anticipated in the immediate future because of the population density of the region and the apparent lack of an available location. Therefore, because the waste is exported out-of-county, the surplus and shortfall are not applicable, as is presented in Table VIII-1.

Knox County presently uses the Chestnut Ridge Landfill located in Anderson County as the disposal facility for its municipal solid waste (Class I) and a portion of its C&D waste (Class IV). The Chestnut Ridge Landfill is owned and operated by Waste Management, Incorporated. Based on data provided to the State of Tennessee Solid Waste Office by the Chestnut Ridge Landfill (Waste Management, Inc.), with the current usage the landfill has an estimated remaining life of 13.8 years. Table 8-1 presents the disposal capacity of the landfills in the region as was reported to the Knox County Solid Waste Board Disposal Committee.

One Class IV landfill is currently operating within the region, and an additional three Class IV landfills are currently undergoing permitting. Class IV landfills are also available outside the county, and conversations with the owners indicate that they are amiable to accepting Knox County Class IV waste.

### **8.2 Excess in Disposal Capacity**

Based on the above disposal capacity analysis performed for this plan, excess disposal capacity for Class I waste is unavailable in Knox County for the planning period.

**Table 8-1  
Landfills Within and Near Knox County  
Knox County Region**

Landfill	Type	Remaining Life (year)	Current Waste (tpd)	Comments
Chestnut Ridge, Anderson Co.	I	13.8	1,300 tpd	Currently used by Knox Co.
Shoat Lick Hollow/Oliver Springs, Anderson Co.	I	35	1,000 tpd	Permitted; not yet receiving waste
Alcoa/Maryville, Blount Co.	I	20	398 tpd	
Claiborne Co.	I	3.5		
Newport, Cocke Co.	I	3.5	117 tpd	
Grainger Co.	I	3.4	60 tpd	
Morristown, Hamblen Co.	I	3.4		Baler facility
Jefferson Co.	I	39	300 tpd	Will not accept Knox waste at this time; plans to upgrade facility
Twin Oaks, Knox Co.	I	0.5		Owned by BFI; closed July 1993
Loudon Co.	I	7.5	386 tpd	
McMinn Co.	I	34	125 tpd	Serves 10-county region
Monroe Co.	I	16	520 tpd	
Morgan Co.	I	1	78 tpd	
Midtown, Roane Co.	I		130 tpd	Permitting 69-acre expansion
Cumberland Co.	I	5		Will close in 1999
Scott Co.	I	3.4	30 tpd	Will close in 1996
Sevier Co.	I	1	211 tpd	
Union Co.	I	2	38 tpd	
Fay, Knox Co.	IV			25 acres; in permitting
Brad Park/Solway, Knox Co.	IV			In permitting
Yarnell Road, Knox Co.	IV			In permitting; needs zoning approval
Jefferson Co.	I			Primarily for Magnavox
Matlock Bend, Loudon Co.	IV			
Volunteer Disposal, Jefferson Co.	IV			Permitted, not yet developed
Armstrong/Burnett, Knox Co.	IV			

### **8.3 Shortfall in Disposal Capacity**

Since disposal capacity requirements are being met by the existing out-of-county disposal facility, no excess or shortfall in disposal capacity is anticipated for the planning period. During the planning period, Knox County will use existing privately owned landfills. In the future, an analysis of the development of a county-owned disposal facility or the continued acquisition of capacity through contracts with private firms or solid waste management agencies will be examined.

The Knox Region Solid Waste Planning Board recommends completing a landfill feasibility study before the plan is updated for the second half of the planning period. The study will involve the feasibility of siting a landfill in the county as well as in nearby counties. If an in-county landfill appears feasible, final site selection and design will occur between years 5 and 10 of the planning period, and construction will occur between years 10 and 13.8, which is when the available capacity at Chestnut Ridge Landfill is exhausted.

### **8.4 Implementation Schedule**

The implementation schedule is shown in Table 8-2, and the estimated costs are presented in Table 8-3.

### **8.5 Multi-County Implementation**

Knox County is its own region and does not include any other counties or regions at this time.

### **8.6 Location of Existing and Planned Solid Waste Facilities**

Currently, Knox County does not have an operating Class I landfill, and none are planned for the near future. However, one Class IV landfill exists. It is presented on Table 8-1 along with all of the landfills within and near the Knox Region.

### **8.7 Importing and Exporting of Waste**

Knox County currently disposes all of its Class I wastes and a portion of its Class IV waste at the Chestnut Ridge Landfill. A five-year contractual agreement (covering 1990 through 1995) exists between Knox County and Waste Management, Incorporated (Chestnut Ridge Landfill). County contracts are typically based on five years with an automatic five-year extension. A copy of the contract is presented in Appendix D.

**Table 8-2  
Ten-Year Solid Waste Disposal Implementation Schedule For Knox County**

<b>Fiscal Year</b>	<b>Task</b>	<b>Target Date</b>
1993/1994		
1994/1995	1. Initiate a landfill site suitability search for a Class I Landfill in Knox County.	1. December 1994
1995/1996	1. Decision on long-term landfill plans in Knox County. 2. Initiate contract negotiations with private landfill or landfill design, depending on decision.	1. September 1995 2. October 1995
1996/1997	1. Have signed contract for waste disposal.	1. July 1, 1996
1997/1998		
1998/1999		
1999/2000		
2000/2001		
2001/2002		
2002/2003		

Table 8-3

Projected 10 Year Budget and Funding Plan

Disposal Capacity (a)

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
<b>Operating Revenues</b>											
Property Tax Revenues	\$2,440,189	\$2,595,000	\$2,725,000	\$2,928,000	\$3,128,000	\$3,353,000	\$3,595,000	\$3,856,000	\$4,138,000	\$4,441,000	\$4,766,000
Landfill Fees (b)	72,003	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
Total	2,512,192	2,665,000	2,795,000	2,998,000	3,198,000	3,423,000	3,665,000	3,926,000	4,208,000	4,511,000	4,836,000
<b>Operating Expenditures</b>											
Tipping Fees at the Landfill (c)	\$2,512,192	2,615,000	2,795,000	2,998,000	3,198,000	3,423,000	3,665,000	3,926,000	4,208,000	4,511,000	4,836,000
Total	2,512,192	2,615,000	2,795,000	2,998,000	3,198,000	3,423,000	3,665,000	3,926,000	4,208,000	4,511,000	4,836,000
<b>Net Operating Income</b>	0	50,000	0	0	0	0	0	0	0	0	0
<b>Non-Operating Revenues</b>											
Total	0	0	0	0	0	0	0	0	0	0	0
<b>Non-Operating Expenditures</b>											
Landfill Siting Feasibility Study (d)	50,000										
Total	0	50,000	0	0	0	0	0	0	0	0	0
<b>Net Non-Operating Income</b>	0	(50,000)	0	0	0	0	0	0	0	0	0
<b>Net Income</b>	0	0	0	0	0	0	0	0	0	0	0

NOTES:

- a. Disposal capacity is assumed to be provided under the current contracts of the City and the County.
- b. Knoxville is currently receiving Landfill Fees of about \$70,000, and these revenues are expected to continue.
- c. Tipping fees are projected to increase at approximately 4 percent per year due to: increases in the CPI (used as a cost escalator in the City and County Contracts), the increasing cost of regulatory compliance, and due to increases in host community fees. Additional increases in landfill costs of about 3% per year are expected to result from the increasing volume of waste requiring disposal as indicated in Table III-4.
- d. A landfill siting feasibility study is planned for FY 1996.

Because it is difficult to project the volume of waste that enters the Chestnut Ridge Landfill (from private haulers of both Class I and IV waste, county haulers, and other regional haulers), it is difficult to further allocate remaining facility capacity.

**Chapter VIII**  
**Forms**

**Table VIII-1  
Projected Demand and Supply (in tpy)  
Knox Region**

<b>Year</b>	<b>DEMAND: Tons of Waste Requiring Disposal<sup>a</sup></b>	<b>SUPPLY: Existing &amp; Planned Capacity</b>	<b>Surplus (+)</b>	<b>Shortfall (-)</b>
1993	0			
1994	0			
1995	0			
1996	0			
1997	0			
1998	0			
1999	0			
2000	0			
2001	0			
2002	0			
2003	0			

<sup>a</sup>Demand will be met by exporting waste to out-of-county landfills.



**Table VIII-2  
 Projected Net Disposal Capacity<sup>a</sup> (in tpy)  
 County/Regional**

<b>Year</b>	<b>1.</b>	<b>2.</b>	<b>3.</b>	<b>4.</b>	<b>5.</b>	<b>6.</b>	<b>Regional<sup>b</sup> Total</b>
1993 base year	0						0
1994	0						0
1995	0						0
1996	0						0
1997	0						0
1998	0						0
1999	0						0
2000	0						0
2001	0						0
2002	0						0
2003	0						0

<sup>a</sup>Use (+) to indicate surplus capacity, (-) to indicate a capacity shortfall.

<sup>b</sup>Algebraic sum.

## **Chapter 9 Public Information and Education**

### **9.1 Regional Needs**

The Knox Planning Region has critical needs in public education of waste management. A great majority of the population has little or no idea how their waste is handled, where it goes for disposal or diversion, and the true cost of managing solid waste. The commercial/industrial waste stream, which comprises between 60 and 70 percent of the total solid waste generated, has been untapped for reduction/recycling programs. Knoxville residents have limited information at hand concerning source reduction, recycling, and composting at home. The Knox Solid Waste Planning Region Board sees the need to provide the necessary information for citizens to recognize their responsibilities and to make appropriate decisions about their actions regarding waste.

The Knox Region has several strengths that will lead to increased public information and education. Knoxville is home to the University of Tennessee, the Tennessee Valley Authority, and their vast resources. Also, the media and other opinion leaders and information providers are willing to help boost solid waste awareness.

### **9.2 Strategy**

#### **9.2.1 Regional Goals and Objectives**

The regional goal for the program is to inform and encourage all citizens of Knox County to recognize personal and public responsibility for solid waste management. This goal will be accomplished through a coordinated plan of public information that includes:

- Seeking state grant money for the educational component of the solid waste plan as soon as it is approved.
- Networking with existing community clubs, neighborhood groups, churches, and civic clubs to spread solid waste information to citizens, with consideration for reaching diverse groups not actively included in the past.
- Taking advantage of offers to help develop solid waste information consistent with the plan for "the Yellow Pages" to put good information into every home and business at practically no cost to the county.
- Developing stronger ties with the Chamber of Commerce, the Greater Knoxville Beautification Board, Leadership of Knoxville, and other civic organizations in the community.

- Developing an aggressive public relations strategy to promote the Solid Waste Plan.
- Remaining open and accessible to the public and actively seeking public participation.

### 9.2.2 Target Audiences and Groups

The Knox Solid Waste Planning Region Board identifies four main target groups: public, businesses, industries, and educational institutions. They are listed in Table 9-1.

### 9.2.3 Amount and Types of Information

A wide range of information will be used to accomplish the goals and objectives of the Knox Region. Estimates of the amount of each type of information are provided where possible and are presented in Table 9-2.

An aggressive advertising campaign should be developed and include a thematic logo and slogan to support recycling, reduction, and other non-disposal options. This logo should be easily recognized by the general public. The logo and slogan should be used in all communications from television and radio spot announcements to news releases and flyers.

The Knox County Solid Waste Department will work closely with the producers of South Central Bell's Yellow Pages to develop a "Green Pages" companion section of the phone book beginning in 1995. This special section will detail the region's solid waste management system and ongoing recycling efforts, such as recyclable materials dealers and drop-off locations, Christmas tree recycling dates and locations, and (of course) telephone book recycling plans. The section also will include tips on buying recycled products, substituting safe products for household hazardous wastes, advice on how to achieve source reduction, and guidelines for setting up backyard composting bins.

It is estimated that the *Knoxville News-Sentinel* can run at least 12 feature articles on solid waste each year and would be willing to consider a regular column on solid waste issues. Other articles and announcements can be run in the *West Knox Press-Enterprise* or a number of small community interest newspapers. The five television stations can air up to four public service spot announcements each year on solid waste, especially if they have regional (East Tennessee) appeal. The 12 radio stations will air public service announcements at random. The NewsTalk radio station will "talk trash" as events such as household hazardous waste collection efforts or landfill bans become established.

The Chamber of Commerce, the Downtown Organization, TVA, and Martin Marietta have expressed interest in running announcements related to solid waste. It is estimated that up to four announcements can be featured per year per organizational newsletter.

**Table 9-1  
Target Groups and Audiences**

<b>Category</b>	<b>Subcategory</b>
<b>Public</b>	Neighborhood Groups Civic Groups Community Organizations Scouts Church Groups Fraternal Orders
<b>Business</b>	Individuals Chamber of Commerce Business Park Associations Shopping Center/Mall Associations Business and Professional Organizations Labor Organizations
<b>Industry</b>	Individuals Professional Associations Industrial Parks
<b>Educational Institutions</b>	Preschool Grades K through 5 Grades 6 through 8 Grades 9 through 12 Post-Secondary Community Education Parent/Student/Teacher Organizations UT Knoxville College Johnson Bible College Pellissippi State Community College

Table 9-2  
 Summary of Proposed Public Education Activities  
 Knox County Ten-year Solid Waste Plan  
 Base Year 1994-95

**PUBLIC**

Target Audience	Workshops	Focus Groups	Forums	Printed Handouts	Audio-Visual Presentation	Contests	Exhibits	Speakers Bureau Visits
Neighborhood Groups/Associations				20/yr	10/yr			10/yr
Civic Groups				12/yr	12/yr			12/yr
Community Organizations				10/yr				10/yr
Scout Groups	2/yr (merit)			2/yr				
Religious Organizations				6/yr			1/yr	6/yr
Fraternal Organizations				6/yr	6/yr			6/yr

**BUSINESS**

Target Audience	Workshops	Focus Groups	Forums	Printed Handouts	Audio-Visual Presentation	Contests	Exhibits	Speakers Bureau Visits
Individual Business	10/yr			200/yr	50/yr			
Chamber of Commerce	1/yr						1/yr	1/yr
Business Park Associations		2/yr						
Shopping Center/Mall Associations		1/yr					1/yr	
Business/Professional Organizations			3/yr					
Labor Organizations	1/yr							

**Table 9-2**  
**Summary of Proposed Public Education Activities**  
**Knox County Ten-year Solid Waste Plan**  
**Base Year 1994-95**

**INDUSTRY**

Target Audience	Workshops	Focus Groups	Forums	Printed Handouts	Audio-Visual Presentation	Contests	Exhibits	Speakers Bureau Visits
Individual Industry		2/yr						
Professional Associations		2/yr						
Industrial Parks	5/yr	2/yr						

**EDUCATIONAL INSTITUTIONS**

Target Audience	Plan Briefing	Teacher Program	Outreach w/other Agencies	Field Trips	Special Events	Publications	Audio-Visual Presentation	Contests
Preschool			40/yr	3/yr	1/yr	20/yr	20/yr	1/yr
Grades K through 5		1/yr	40/yr	3/yr	1/yr	20/yr	20/yr	1/yr
Grades 6 through 8		1/yr	40/yr	3/yr	1/yr	20/yr	20/yr	1/yr
Grades 9 through 12		1/yr	40/yr	3/yr	1/yr	20/yr	20/yr	1/yr
Post-Secondary						2/yr		
Community Education								
Parent/Student/Teacher Organizations						4/yr		
UT					1/yr	2/yr		
Knoxville College			2/yr			3/yr	3/yr	
Johnson Bible College			2/yr			3/yr	3/yr	
Pellissippi State Community College			3/yr			4/yr	4/yr	

**Table 9-2**  
**Summary of Proposed Public Education Activities**  
**Knox County Ten-year Solid Waste Plan**  
**Base Year 1994-95**

Target Audience	Plan Briefing	Teacher Program	Outreach w/other Agencies	Field Trips	Special Events	Publications	Audio-Visual Presentation	Contests
School Administration/Board	1/yr	1/yr				1/yr	1/yr	
Summer Programs			3/yr			3/yr	3/yr	
<b>MEDIA</b>								
Target Audience	Public Service Announcements	News Feature Stories	Newsletter Stories/Announcements					
Television/Cable TV	3/yr	12/yr						
Radio Stations	3/yr	12/yr						
Newspapers		12/yr						
Business Communications/Newsletters			4/yr					

Knox County will work with the UT Agricultural Extension Service to distribute pamphlets on composting and other waste management options. Knox County also will obtain a number of specialized pamphlets from TDEC for general distribution.

Knox Region will actively promote the RECYCLING HOTLINE, produced by the Knoxville Recycling Coalition. The region will continue to provide and maintain the computer used to direct incoming calls to the appropriate voice mail categories, such as city and county drop-off locations, yard waste drop-off locations, etc.

Knox Region will work to develop a speakers' bureau to bring solid waste information to the various target audiences.

## **9.2.4 Specific Methods to be Used**

### ***9.2.4.1 School-Based Instruction***

It is recommended that the school-based instruction in Knox County target recycling and composting. Recycling should be targeted because it is the easiest waste management option for students to understand, and composting should be targeted because it involves the science of microbial decomposition. The plan recommends working with the school administration to integrate waste management education as completely as possible, while still being sensitive to the increasing demands for additional mandated instruction placed on teachers. Copies of educational materials as recommended by the Regional Solid Waste Board will be available in the office of the Knox County Solid Waste Department for system-wide instructional supervisors and teachers to evaluate for use in the classroom. As new programs develop such as HHW, relevant educational materials will be included.

The Regional Solid Waste Board and Knox County Solid Waste Department staff will brief the Knox County School Board and instructional supervisors on current and planned educational components of the plan. The School Board will be encouraged to implement recycling in all county schools. This will be considered part of the waste management plan for schools, not a separate program conducted by the Knox County Solid Waste Department. In addition, individual schools will be encouraged to compost yard and appropriate food wastes on school grounds to demonstrate sound management and to set an example for students to take home.

The School Administration will be encouraged to plan cooperatively with local environmental groups such as the Recycling Coalition and Ijams Nature Park on developing teacher programs and field trips related to solid waste management. The Knox County Solid Waste Department will work with the School Administration to arrange potential field trips. Suggested facility visits are outlined in Table 9-3.



**Table 9-3  
Solid Waste Facility Field Trips**

<b>Site</b>	<b>Location</b>	<b>Purpose</b>
Bedminster	Sevier County	Solid waste/sludge composting
BFI Landfill	East Knoxville	Landfill closure
BFI Recyclery	Knoxville	Recycling processor
Bowater	Calhoun	Recycled newsprint mill
Chestnut Ridge Landfill	Anderson County	Regional landfill
City of Knoxville Super Centers		Recycling dropoffs
City Transfer Station	Downtown Knoxville	Repacking for landfill haul
Coca-Cola Plant		Reduction/recycling
County Convenience Centers	Various	
Dico Tire	Clinton	Recyclable pallets
Dixie Cement		Solvents burned for fuel
Fay Portable Buildings	Knoxville	C&D landfill
Fisher Tire		Cutting up of used tires
Florida Steel/Knox Metals	Knoxville	Recycling
Illegal Dump Sites	Various	
Industrial Oil Recycling	Karns	Oil recycling
Kimberly Clark	Loudon	Recycled paper tissue mill
Knoxville Recycled Fiber	Knoxville	Paper processor
Knoxville Utilities Board First Utility District	Kuwahee and First Utility District	Sludge—various
Master Composting/UT Agriculture Extension		
Mechanicsville Composting Pilot Site	Knoxville	Composting demonstration
Shoat Lick/Chambers Landfill	Oliver Springs	Landfill
Tennessee Waste Movers MRF	Loudon	Mechanical recycling

#### ***9.2.4.2 Workshops, Conferences and Training Courses***

The UT CIS offers solid waste workshops on reduction and recycling to businesses and industries. The relationship with Knox County is outlined in Chapter 6.

The League of Women Voters approached Knox Region to help develop a Solid Waste Forum for the general public. This event is expected to occur in mid-1994.

A number of solid waste workshops have been hosted by Knox Region in conjunction with other regions and TDEC. As plans are implemented, the county will host additional workshops and seminars on specific topics such as tire disposal or reuse and HHW.

Knox Region is working with Ijams Nature Park, the Recycling Coalition, and TVA in developing a Master Composter program to be administered by volunteer gardeners in the UT Agriculture Extension Service. Grant money for a pilot program is pending. In addition, Knox County has contacted the newly-formed and Knoxville-based "Home and Garden" cable network and has proposed a locally-produced series on backyard composting.

#### ***9.2.4.3 Audiovisual Materials, Slides and Videos***

Knox Region will work with the Public Education Committee of the Board to develop an inventory of existing solid waste related materials in the Knoxville library system, the UT library system, and other resources to make it available to the public. The staff will continue to compile a slide library of local solid waste facilities as they are visited.

#### ***9.2.4.4 Publications***

A pocket-sized publication, "Knox County Trash: Truths and Trivia," has been produced by Knox Region, and 50,000 copies are being distributed at various locations in the region. The document is designed to give a few interesting facts on Knox County's waste management and plans in an easy-to-read format. A copy is included in the clear vinyl map pocket at the end of this report. A partial list of distribution is in Table 9-4. Details on brochure development are found in Appendix C.

Knox Region will compile and adapt existing solid waste brochures on composting, reduction/recycling, HHW, and handling C&D debris. Where there is a need, new brochures will be developed on specific topics.

#### ***9.2.4.5 Contests and Awards***

Knox Region will continue to promote the Environmental Award bestowed on model businesses by the Greater Knoxville Beautification Board, as well as the telephone book recycling contest in Knox County Schools sponsored by Kroger Company and South

**Table 9-4  
Distribution of "Knox County TRASH: Truths & Trivia" Pocket Primer**

Page 1 of 2

Recipient	Quantity
Knox County General Payroll	879
Knox County Non-Plan	880
Community Health Agency	29
Public Building Authority	31
Metropolitan Planning Commission	41
Geographic Information Systems	5
Chancery Court	29
E-911 System	150
Community Action Committee	630
Law Department and Judicial Commission	14
Knox County Executive's Office	200
Knox County Clerk's Office	1,700
Criminal and Fourth Circuit Court	35
General Sessions and Circuit Court	25
Knox County Register of Deeds	50
Knox County Trustee	35
Cedar Bluff Intermediate School	650
Tree Recycling Program	3,000
Knox County Library System	1,000
UT Agricultural Extension Service	2,500 (1,000 in homemaker letter)
Knox County School Employees	7,200
Home Builders Association	175
UT Library	175
UT Economics Class	50
March of Dimes Goody Bag	300
UT Waste Management Research/Education Institute	100
Pizza Hut	50
Knox County Private School Employees	390
Forks of the River Plant Managers	150

**Table 9-4**  
**Distribution of "Knox County TRASH: Truths & Trivia" Pocket Primer**

**Page 2 of 2**

<b>Recipient</b>	<b>Quantity</b>
Lonsdale Elementary School	300
Mr. I. O. Johnson	6
League of Women Voters	400
Cedar Bluff Middle School	275
Knoxville College Student Body	800
Mrs. L. Freeman	50
Mr. K. Nelson/Volunteer Realty	200
House and Garden Show (Teri Jacobs)	200
Mr. Nelson	176
Forks of the River Focus Group	80
WBIR-TV Employees	50
Leadership Knoxville Workshop	100
<b>Current Total</b>	<b>22,460</b>

Central Bell. Solid Waste Department and Office of Solid Waste staff will continue to plan future awards with an eye toward incorporating sponsorship from businesses in the county.

#### **9.2.4.6 Exhibits/Demonstrations**

Knox County owns a tabletop display with light bar that has been used at environmental fairs in the past, including the Junior League Forum in 1993. The display is adaptable and will be used at numerous public functions including the Dogwood Arts Festival House and Garden Fair, the Tennessee Valley Fair, the Karns Community Day, and others.

#### **9.2.4.7 Speaker's Bureau**

Knox County has an extensive mailing list of civic organizations and community and neighborhood groups compiled by the MPC staff, the Knox County Library Reference Desk staff, and others. After the plan is adopted, these staff will aggressively schedule speaking engagements at various locations around the county. Knox Solid Waste Planning Region Board members have agreed to make themselves available for speeches.

#### **9.2.4.8 Other (Media)**

Regular meetings will be scheduled by Knox County with news media editorial staff members to keep them apprised of solid waste activities. Knox County will continue to look for opportunities to inform residents through newsletters, flyers at special events, and community newspapers. Knox County has discussed producing a public access television (Cable Channel 12) program on solid waste. This idea will be explored once the plan is adopted.

### **9.2.5 Staff and Budget Needs**

Staffing needs for the planning period will be met with new staff and interns from UT and Knoxville College. It is recommended that the Solid Waste Coordinator/Residential position for the county assist the schools with curricula and promote other means of public information. This position was described further in Chapter 6, and funding for this position is found in the Chapter 6 budget.

Budget needs include funds for developing a slogan/theme/logo, purchasing educational materials, slide film and other materials for displays, handouts for public meetings and workshops, and making media buys (commercial time) where necessary. It is estimated that during FY 1994/1995 and 1995/1996 an approximate total of \$150,000 will be needed for creation of a coordinated campaign to raise awareness through printed handout material, mailouts, and print and broadcast efforts. It is recommended that Knox County retain a public relations (PR) firm to help design and implement this campaign. For FY 1994/1995 and FY 1995/1996, \$50,000 is budgeted for the PR firm in each year, and an additional \$25,000 is budgeted in each year for other aspects of program development.

### **9.2.6 Funding Plan**

It is proposed that funding for the public education/information plan come from state and other grants. State grants for implementation will become available after the plan is approved through FY 1995/1996. The state advises that an average grant of \$7,500 should be assumed. The proposed 10-year funding plan is presented in Table 9-5.

### **9.2.7 Evaluation and Reporting**

An educational and information program must be evaluated to measure its success because if education declines or fails so does solid waste management. To accomplish this, a method of recordkeeping needs to be established to track special events, workshops, focus groups, educational presentations, news/public service releases, letters from/to the general public, and distribution of informational materials.

To measure the success of school-based instruction and the media campaign, a system of "before and after" evaluations must be developed to determine the effectiveness of recycling and other waste management information as it affects behavior.

The county and other organizations such as the Recycling Coalition and Ijams Nature Park keep records of the number and type of presentations and attendance. This information will be included in the annual report to the state.

## **9.3 Ten-Year Implementation Schedule**

The 10-year implementation schedule is presented in Table 9-6. The first milestone is to apply for the education grant from the state as soon as the plan is approved.

Table 9-5

**Projected 10 Year Budget and Funding Plan  
Public Information and Education**

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
<b>Operating Revenues</b>											
Property Tax Revenues	\$0	\$75,180	\$75,180	\$17,680	\$17,680	\$17,680	\$17,680	\$17,680	\$17,680	\$17,680	\$17,680
Total	0	75,180	75,180	17,680	17,680	17,680	17,680	17,680	17,680	17,680	17,680
<b>Operating Expenditures</b>											
Media Campaign (a)	\$75,000	\$75,000	\$75,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
Intern (b)	7,680	7,680	7,680	7,680	7,680	7,680	7,680	7,680	7,680	7,680	7,680
Total	0	82,680	82,680	17,680	17,680	17,680	17,680	17,680	17,680	17,680	17,680
<b>Net Operating Income</b>	0	(7,500)	(7,500)	0	0	0	0	0	0	0	0
<b>Non - Operating Revenues</b>											
State Grants (c)	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500
Total	0	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500
<b>Non - Operating Expenditures</b>											
Total	0	0	0	0	0	0	0	0	0	0	0
<b>Net Non - Operating Income</b>	0	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500
<b>Net Income</b>	0	0	0	0	0	0	0	0	0	0	0

**NOTES:**

a. Expenses for the media campaign are estimated at about \$50,000 per year for the first two years of the program; the additional \$25,000 each year is budgeted for other aspects of program development.  
b. An intern is budgeted at \$8.00 per hour, for 20 hours per week, for 48 weeks per year.  
c. State grants of \$7,500 are projected according to the Solid Waste Management Act of 1991 Fact Sheet #4, provided by the State Division of Solid Waste Assistance.

**Table 9-6  
Ten-Year Implementation Timetable for Public Information and Education**

<b>Fiscal Year</b>	<b>Task</b>	<b>Target Date</b>
1993-1994	<ol style="list-style-type: none"> <li>1. Schedule UT CIS Waste Reduction Workshop</li> <li>2. Schedule TVA reduction retirees with largest waste generators</li> <li>3. Request copies of solid waste/recycling educational materials from teachers through administrative bulletin</li> <li>4. Obtain state brochures to determine suitability</li> <li>5. Place public service announcements (PSAs)</li> <li>6. Meet with school administration to plan paper recycling at all facilities</li> <li>7. Develop display with City Solid Waste</li> <li>8. Schedule talks to neighborhood groups and civic clubs</li> <li>9. Work with city, recycling coalition, UT Agricultural Extension Service to initiate backyard composting program</li> <li>10. Develop media plan and schedule news releases</li> <li>11. Develop "Green Pages" section for phone books</li> </ol>	<ol style="list-style-type: none"> <li>1. 02/23/94</li> <li>2. beginning 03/01/94</li> <li>3. 03/01/94</li> <li>4. 03/01/94</li> <li>5. Ongoing</li> <li>6. 04/01/94</li> <li>7. Ongoing</li> <li>8. Ongoing</li> <li>9. 04/01/94</li> <li>10. 06/01/94</li> <li>11. 06/30/94</li> </ol>
1994-1995	<ol style="list-style-type: none"> <li>1. Seek grant for educational program</li> <li>2. Conduct survey before media campaign begins</li> <li>3. Place PSAs, newsletter stories, news releases</li> <li>4. Continue TVA reduction retiree program</li> <li>5. Meet with school administration to develop composting program at schools</li> <li>6. Seek partners for backyard composting funding</li> <li>7. Schedule field trip with school administration</li> </ol>	<ol style="list-style-type: none"> <li>1. 07/01/94 (after plan approved)</li> <li>2. 07/01/94</li> <li>3. Ongoing</li> <li>4. Ongoing</li> <li>5. 08/01/94</li> <li>6. Ongoing</li> <li>7. 02/01/95</li> </ol>
1995-1996	<ol style="list-style-type: none"> <li>1. Seek grant for education program implementation</li> <li>2. Kickoff promotional campaign</li> <li>3. Place PSAs, newsletter stories, news releases</li> <li>4. Continue TVA retiree reduction program</li> <li>5. Establish Adult Education Program</li> <li>6. Hold 25% news event at landfill</li> </ol>	<ol style="list-style-type: none"> <li>1. 07/01/95</li> <li>2. 07/01/95</li> <li>3. Ongoing</li> <li>4. Ongoing</li> <li>5. 12/31/95</li> <li>6. 12/31/95</li> </ol>
1996-1997	<ol style="list-style-type: none"> <li>1. Conduct post-media campaign survey</li> <li>2. Place PSAs, newsletter stories, news releases</li> <li>3. Continue TVA retiree reduction program</li> </ol>	<ol style="list-style-type: none"> <li>1. 07/01/94</li> <li>2. Ongoing</li> <li>3. Ongoing</li> </ol>
1997-1998	<ol style="list-style-type: none"> <li>1. Place PSAs, newsletter stories, news releases</li> </ol>	<ol style="list-style-type: none"> <li>1. Ongoing</li> </ol>
1998-1999	<ol style="list-style-type: none"> <li>1. Place PSAs, newsletter stories, news releases</li> </ol>	<ol style="list-style-type: none"> <li>1. Ongoing</li> </ol>
1999-2000	<ol style="list-style-type: none"> <li>1. Place PSAs, newsletter stories, news releases</li> </ol>	<ol style="list-style-type: none"> <li>1. Ongoing</li> </ol>
2000-2001	<ol style="list-style-type: none"> <li>1. Place PSAs, newsletter stories, news releases</li> </ol>	<ol style="list-style-type: none"> <li>1. Ongoing</li> </ol>
2001-2002	<ol style="list-style-type: none"> <li>1. Place PSAs, newsletter stories, news releases</li> </ol>	<ol style="list-style-type: none"> <li>1. Ongoing</li> </ol>
2002-2003	<ol style="list-style-type: none"> <li>1. Place PSAs, newsletter stories, news releases</li> </ol>	<ol style="list-style-type: none"> <li>1. Ongoing</li> </ol>
2003 <sup>b</sup>	<ol style="list-style-type: none"> <li>1. Place PSAs, newsletter stories, news releases</li> </ol>	<ol style="list-style-type: none"> <li>1. Ongoing</li> </ol>

\*Only covers second half of base year.

<sup>b</sup>End of planning period is December 31, 2003, which is only half of this fiscal year.



## Chapter 10 Problem Wastes

### 10.1 Household Hazardous Waste

#### 10.1.1 Regional Needs

State regulations [T.C.A. 68-211-815(b)(9) and 68-211-828] require the development of a HHW collection facility in Knoxville. This facility will be designed specifically for the collection of hazardous materials defined as ignitable, corrosive, toxic, or reactive. Hazardous materials include, but are not limited to oil and latex paints, solvents, drain and household cleaners, automotive products (e.g., motor oil and oil filters, anti-freeze, and batteries), and lawn and garden products (e.g., insecticides and pesticides). These materials require special management to prevent injury and to prevent their entry into the natural environment.

The Knox Solid Waste Planning Region currently has no permanent HHW facility. The City of Knoxville has volunteered to assume responsibility with the assistance of the Region for development of a permanent facility. However, the Knox Region has had a successful Toxic Roundup Program, as further described in the attachment to this chapter.

#### 10.1.2 Regional Plan

##### *10.1.2.1 Goals and Objectives*

The overall goal of the Regional Solid Waste Board is to have a well-advertised, well-utilized HHW collection program in place by the year 1995 so that the HHW generated in the county can be disposed of in an environmentally and economically sound manner. The primary objective to meet that goal is to conduct a feasibility study in FY 1994/1995. Other objectives include developing an education and promotional program, incorporating that program into the school system, providing for long-term support, targeting an affordable participation rate, and providing the collection service with, at most, imposition of a small user fee.

##### *10.1.2.2 Site Selection, Design, and Construction Procedure*

The first step in developing a HHW program for the region is to conduct a feasibility study to determine what type of permanent program would be most cost effective. The intent of the 1991 Solid Waste Act was for a region to provide a permanent solution to HHW collection, but that does not necessarily mean a permanent building. For example, Nashville is considering providing mobile collection units on a permanent basis.

Some of the considerations the Region will evaluate during the feasibility study include the overall economics of constructing and maintaining a permanent facility, the economics of

providing a collection service to small quantity generators, the target participation rate, and alternative disposal options (such as mixing the latex paints and using them on institutional structures such as penal farms). A resident survey to determine the level of interest and willingness to pay for this service may also be part of the feasibility study.

If the results of the feasibility study indicate that a permanent facility is a cost-effective solution, the procedure for siting, designing, and constructing a permanent collection site will consist of the following:

- siting study (if other than Boyd Street location)
- detailed regulatory and building code analysis
- predesign
- final design
- construction and startup

Each step will be coordinated with the city and the county. It is proposed a contractor be procured for packaging and disposal of the waste, and that this contractor be selected before the design stage is complete.

The siting study is necessary to determine whether an existing site or facility can be used or modified, or whether new property must be located. Siting studies consider factors such as population centers, participation rate, proximity to necessary utilities (e.g., fire protection), floodplains, access, adjacent land use, etc. The site should be in an industrial area, near population centers, with easy access to automobiles and emergency vehicles. Conflicting activities, such as high traffic areas, food preparation and sales, or agricultural product handling, should be avoided. A buffer area should surround the site allowing some distance from residential or other sensitive areas.

The TDEC Division of Solid Waste Assistance and Division of Solid Waste Management have not developed minimum criteria for siting and design of a permanent HHW facility. However, they are beginning the process (personal communication with David Moses, TDEC, February 8, 1994). Until new criteria are developed, the general permit conditions will be used as minimum criteria.

Once the site is selected, specific site considerations to be included in the design are traffic, grading, drainage, landscaping, and utilities. Specific facility design features to be considered include: material flow considerations; areas for waste receiving, bulking, and storage; a laboratory room for identifying unknown materials; integrated heating, ventilation, and air conditioning (HVAC) design coupled to an alarm; and a three-tiered spill containment system.

The procedure for construction will consist of preparing bid documents for the design, competitively procuring a contractor, and providing construction oversight and startup services.

The state will award a grant of up to \$500,000 to the Knox Region for the development of a permanent hazardous waste collection site. This grant will be used for the development and start-up costs of the facility, including purchase of property, design and construction of the facility, equipment, security, personnel training, and educational materials. It may not be used for recurring operating costs.

### ***10.1.2.3 Educational and Promotional Program***

Educational materials will be developed through grant money available from the state. Where possible, existing EPA and state literature will be used or enhanced to maximize available grant money. For example, an insert specific to the Knox Region may be developed for distribution with the state brochures covering topics such as household cleaners, pesticides, lead-acid batteries, etc.

The Regional Solid Waste Board will seek cooperation of the public and private school systems in the distribution of educational materials. In addition, promotional and educational materials will be distributed at each of the region's convenience centers and recycling centers. Other distribution points that will be approached include retailers such as paint, garden, and hardware stores.

The level of promotion directly impacts the operational costs of a HHW program. To maximize cost benefits, the plan emphasizes (in this order) education, safe substitutes, and diversion in keeping with EPA's efforts in pollution prevention.

An aggressive public awareness program should be launched in nearby neighborhoods as it will be necessary to maintain high public confidence in this operation.

### ***10.1.2.4 Waste Recycling or Swap Programs***

The Knox Solid Waste Planning Region Board will continue to explore opportunities for creative ways to recycle or otherwise dispose of waste collected at the HHW collection events. A good example of creative disposal is the use of the latex paint collected at the last Toxic Roundup to paint the Knox County Penal Farm. The region will coordinate with the League of Women Voters on their safe substitute program, the UT Agricultural Extension Agents, and the Homemakers groups.

### ***10.1.2.5 Coordination with Other System Elements***

Coordination with the public education element of the system is one of the most important objectives of this program. Coordination will also be necessary between the city and county. The county's convenience center staff will also have to be knowledgeable about the new collection service so that they do not accept materials for HHW collection facilities.

### ***10.1.2.6 Staff and Training Needs***

The current approach for staffing the permanent collection facility is to contract with a company that provides personnel trained and certified in handling hazardous waste, transport, and disposal services. Therefore, the region will not have any training needs. Staffing needs will vary with the number of days and hours the facility will be open to the public and can be negotiated as part of the contracted services.

Regional personnel who will not handle any hazardous waste will be needed to help administer the program. These personnel include an education coordinator (30 percent of its time), administration support (10 percent), and clerical support (10 percent). The coordinator function is 30 percent of the Solid Waste Coordinator/Residential position described in Chapter 6, but the 30 percent for the HHW program is shown in Table 10-1.

### ***10.1.2.7 Costs***

Capital, operating, and disposal costs will vary with the number of participants, hours of operation, type and location of site, volume of waste managed and disposed, and method of packaging the waste. Costs provided in this document are in order of magnitude and for general planning purposes only as many of the fundamental decisions (number of participants, site location, design criteria) have not been made. Estimated costs are provided in Table 10-1.

For purposes of this cost estimate, it is assumed that one percent of the households will participate. The Knox County Needs Assessment (ETDD, 1992) indicated that there were 133,639 households in 1990. It is assumed that 1,340 households will participate, which is in good agreement with the 1,000 households that participated in the last collection event. As estimated by Laidlaw Environmental Services (personal communication) it is assumed that it will cost \$100 per household for collection, packaging, transport, and disposal of the waste. Therefore, the region can assume that \$134,000 will be needed on an annual basis for management of the waste.

For this participation rate, it is assumed that the facility capital cost will be approximately \$400,000. This cost does not include land acquisition, permitting, or engineering. Siting study costs are also not included, which may range from \$50,000 to \$100,000.

### **10.1.3 Implementation Schedule**

The major effort in implementing the HHW Program will occur during FY 1994/1995, when the feasibility study is completed. Depending on the results of the study, the next major effort will involve design and construction of the facility. This effort will include selecting the site and getting it approved by the state, developing the advertising and distribution program, and holding the first collection day. Education will be an ongoing activity throughout the planning period. The schedule for the next 10 years is presented in Table 10-2.

**Table 10-1  
Projected 10 Year Budget and Funding Plan  
Problem Wastes**

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
<b>Operating Revenues</b>											
Property Tax Revenues	\$67,143	\$657,424	\$263,860	\$263,860	\$263,860	\$263,860	\$263,860	\$263,860	\$263,860	\$263,860	\$263,860
Total	67,143	657,424	263,860	263,860	263,860	263,860	263,860	263,860	263,860	263,860	263,860
<b>Operating Expenditures</b>											
HHW Disposal Costs (a)	17,143	19,286	134,000	134,000	134,000	134,000	134,000	134,000	134,000	134,000	134,000
HHW Center Operations (b)			15,360	15,360	15,360	15,360	15,360	15,360	15,360	15,360	15,360
Waste Tires (c)		100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Administration of HHW program (d)		14,500	14,500	14,500	14,500	14,500	14,500	14,500	14,500	14,500	14,500
Total	17,143	133,786	263,860	263,860	263,860	263,860	263,860	263,860	263,860	263,860	263,860
<b>Net Operating Income</b>	50,000	523,638	0	0	0	0	0	0	0	0	0
<b>Non - Operating Revenues</b>											
Total	0	0	0	0	0	0	0	0	0	0	0
<b>Non - Operating Expenditures</b>											
Tire Storage Facility (e)		123,638									
Feasibility Study for HHW Facility (f)	50,000										
Household Hazardous Waste Facility (g)		400,000									
Total	50,000	523,638	0	0	0	0	0	0	0	0	0
<b>Net Non - Operating Income</b>	(50,000)	(523,638)	0	0	0	0	0	0	0	0	0
<b>Net Income</b>	0	0	0	0	0	0	0	0	0	0	0

**NOTES:**

- a. For FY 94 and FY 95, the costs of contract with Spectra for picking up and disposing of motor oil, oil filters, paint, and antifreeze. Starting in FY 1996, the projected cost increases due to the increase in waste volume expected to result from the household hazardous waste program, and reflects an assumed cost of \$100 per participating households, (a rule of thumb provided by Laidlaw Environmental Services).
- b. Detailed projections of the costs of operating the HHW facility have not yet been developed. The following assumption is made for planning purposes until the feasibility study is completed: two employees at \$8.00 per hour, for 20 hours per week, for 48 weeks.
- c. Operating costs for the tire storage facility are estimated at \$100,000 per year, including labor and O&M expense. Landfill tipping fees are not included as the ultimate disposal method has not yet been estimated.
- d. Administration includes 30% of the Residential Solid Waste Coordinator, 10% of an administrative assistant, and 10% of a clerical assistant.
- e. Construction costs for the tire storage facility are estimated by the county to be \$123,638, excluding engineering, permitting, and land (a site already exists).
- f. A feasibility study to determine the most cost-effective permanent solution to HHW management will be conducted.
- g. The estimate of \$400,000 represents a State grant for development of a permanent HHW management program.

**Table 10-2  
Ten-Year Implementation Timetable  
for Problem Wastes**

<b>Fiscal Year</b>	<b>Task</b>	<b>Target Date</b>
1993/1994	<ol style="list-style-type: none"> <li>1. Select site for tire storage facility</li> <li>2. Design and construct tire storage facility</li> <li>3. Perform feasibility study for HHW permanent collection facility</li> <li>4. Conduct Illegal Tire Survey</li> </ol>	<ol style="list-style-type: none"> <li>1. 03/30/94</li> <li>2. 06/01/94</li> <li>3. 06/30/94</li> <li>4. 06/30/94</li> </ol>
1994/1995	<ol style="list-style-type: none"> <li>1. Design and construct HHW facility</li> <li>2. Collect problem waste data for Annual Report</li> <li>3. Submit Annual Report</li> <li>4. Conduct Illegal Tire Survey</li> </ol>	<ol style="list-style-type: none"> <li>1. 06/30/95</li> <li>2. 01/31/95</li> <li>3. 03/01/95</li> <li>4. 06/30/95</li> </ol>
1995/1996	<ol style="list-style-type: none"> <li>1. Collect problem waste data for Annual Report</li> <li>2. Submit Annual Report</li> <li>3. Conduct Illegal Tire Survey</li> </ol>	<ol style="list-style-type: none"> <li>1. 01/31/96</li> <li>2. 03/01/96</li> <li>3. 06/30/96</li> </ol>
1996/1997	<ol style="list-style-type: none"> <li>1. Collect problem waste data for Annual Report</li> <li>2. Submit Annual Report</li> <li>3. Conduct Illegal Tire Survey</li> </ol>	<ol style="list-style-type: none"> <li>1. 01/31/97</li> <li>2. 03/01/97</li> <li>3. 06/30/97</li> </ol>
1997/1998	<ol style="list-style-type: none"> <li>1. Collect problem waste data for Annual Report</li> <li>2. Submit Annual Report</li> <li>3. Conduct Illegal Tire Survey</li> </ol>	<ol style="list-style-type: none"> <li>1. 01/31/98</li> <li>2. 03/01/98</li> <li>3. 06/30/98</li> </ol>
1998/1999	<ol style="list-style-type: none"> <li>1. Collect problem waste data for Annual Report</li> <li>2. Submit Annual Report</li> <li>3. Conduct Illegal Tire Survey</li> </ol>	<ol style="list-style-type: none"> <li>1. 01/31/99</li> <li>2. 03/01/99</li> <li>3. 06/30/99</li> </ol>
1999/2000	<ol style="list-style-type: none"> <li>1. Collect problem waste data for Annual Report</li> <li>2. Submit Annual Report</li> <li>3. Conduct Illegal Tire Survey</li> </ol>	<ol style="list-style-type: none"> <li>1. 01/31/00</li> <li>2. 03/01/00</li> <li>3. 06/30/00</li> </ol>
2000/2001	<ol style="list-style-type: none"> <li>1. Collect problem waste data for Annual Report</li> <li>2. Submit Annual Report</li> <li>3. Conduct Illegal Tire Survey</li> </ol>	<ol style="list-style-type: none"> <li>1. 01/31/01</li> <li>2. 03/01/01</li> <li>3. 06/30/01</li> </ol>
2001/2002	<ol style="list-style-type: none"> <li>1. Collect problem waste data for Annual Report</li> <li>2. Submit Annual Report</li> <li>3. Conduct Illegal Tire Survey</li> </ol>	<ol style="list-style-type: none"> <li>1. 01/31/02</li> <li>2. 03/01/02</li> <li>3. 06/30/02</li> </ol>
2002/2003	<ol style="list-style-type: none"> <li>1. Collect problem waste data for Annual Report</li> <li>2. Submit Annual Report</li> <li>3. Conduct Illegal Tire Survey</li> </ol>	<ol style="list-style-type: none"> <li>1. 01/31/03</li> <li>2. 03/01/03</li> <li>3. 06/30/03</li> </ol>
2003/2004	<ol style="list-style-type: none"> <li>1. Collect problem waste data for Annual Report</li> <li>2. Submit Annual Report</li> <li>3. Conduct Illegal Tire Survey</li> </ol>	<ol style="list-style-type: none"> <li>1. 01/31/04</li> <li>2. 01/31/04</li> <li>3. 06/30/04</li> </ol>

## **10.2 Waste Tires**

### **10.2.1 Current Practices**

Knox County currently produces approximately 250,000 waste tires annually. Currently no markets for used tires exist except for a small percentage of recapping. All non-reusable waste tires are currently being disposed of at the Chestnut Ridge Landfill.

Currently, a \$1 surcharge is being assessed for each new tire purchased and deposited in the state Solid Waste Management Fund for waste tire shredding and other assistance programs.

Knox County does not currently own or operate a waste tire storage site but residents have access to the facility operated by Waste Management, Inc., near the Chestnut Ridge Landfill in Anderson County. Anderson County officials say they will use the shreds from that facility as alternate daily cover for the time being.

Knox County, meanwhile, has identified two industrial sites at the Forks of the River Industrial Park in East Knox County that could serve as tire storage facilities. Knox County will budget for such a facility and apply for the permit by rule as soon as a budget is approved by County Commission. The Forks locations provide several benefits. They are within a minute of a fully-staffed fire station. They are within a mile of two asphalt companies who might use crumb rubber in asphalt for federally-funded projects. They are within a mile of a barge company. They are within three miles of a cement plant. However, it appears that for the immediate future the tire shreds will be landfilled in a Class IV facility. Knox County has arranged several meetings with tire haulers, several tire dealers, and researchers with the UT Waste Management group to explore possible non-disposal options. The Knox County Development Corporation also has been working with a startup company that could use an estimated 300 tires per day in a business to manufacture truck bed mats and floor mats. If the business is viable, Knox County is looking at providing space adjacent to the storage facility for the business.

### **10.2.2 Goals and Objectives**

State regulations require that all waste tires be collected at a permitted and strictly regulated site within the region and be chipped or shredded onsite biannually prior to disposal. The chips can then be sent to a landfill for disposal, used as fuel in cement kilns, or burned in incinerators to produce steam for electricity. They may also be ground and used to make rubber products.

The waste tire collection and storage site for the Knox County Region will be selected as a permit-by-rule facility with the assistance of TDEC, Division of Solid Waste Management Field Office. This site will be open to inspection by the Division of Solid Waste Management personnel and will meet or exceed the following requirements:

- Operated in compliance with state regulations
- Minimum 50-ft working area for shredding
- Level and stable surface area (minimum hard-packed gravel)
- No waste tires accepted from out-of-state
- Waste tires (whole or shredded) stored for 1 year maximum
- Adequate records maintained to substantiate tire pile genesis
- Tires restricted to 200 × 50 × 15 ft piles, with 50-ft buffer
- Tires treated for insect, vector, and rodent control
- Storage area surrounded by 18-in. earthen berm
- Surface run-off directed to appropriate release point
- Storage areas kept clear of brush and grass
- No flammable liquids or equipment with flame permitted
- Emergency communications equipment required
- Properly maintained and convenient fire suppression equipment

The site will be configured in accordance with state guidelines. In addition, the waste tire collection and storage facility will be located in an area convenient for fire safety and protection guidelines. All waste tires will be kept free of foreign material to insure safe operation of the contractor's shredding equipment. The site will be staffed for 40 hours per week, 5 days a week. Labor costs to staff this facility are included in Table 10-1.

Finally, all operators will comply with state guidelines by verifying the number of waste tires shredded by the state's contractor. The operator will complete and sign a notarized certification form and return it to the contractor.

### **10.2.3 Tire Flow**

The number of new tires sold in the region was calculated by obtaining the amount paid into the Solid Waste Management Fund for predisposal fees from the Department of Revenue. For the period October 1, 1991, through June 30, 1993 (the period of record for which data are available). Knox County collected \$504,350.00 in predisposal fees. This equates to 288,200 tires sold each year.

The number of new tires sold in the region is estimated to be approximately 340,000 annually. This is a national average generation rate of one tire per person per year. Of those, approximately 10 percent are recapped or resold elsewhere. The state shredder would have to make at least three or four trips per year to Knox County to handle the amount of tires expected (approximately 300,000).

Waste tires will be collected from area retailers and private citizens as used tires, unacceptable for reuse, are received from the consumer. A tipping fee (per tire) may be assessed for each tire being disposed.



All shredded waste tires will be collected from the waste tire storage facility and transported to the point of disposal. They may either be sent to Chestnut Ridge Landfill or used as fuel in cement kilns or similar facilities in the region (e.g., Dixie Cement).

#### **10.2.4 Illegal Tire Pile Inventory**

An annual survey will be conducted by the region's Solid Waste Administrator of the current inventory of illegal dumps containing tires. These refuse tires will be collected and transported to the waste tire collection facility for future shredding and disposal.

Knox County has identified 46 illegal dumps of all sizes. The majority of them contain some scrap tires. However, as part of the County's Clean Lot Ordinance, large illegal tire dumps traditionally have been removed by the Highway Department as they are discovered. The costs of cleanup are borne by the property owner. Table 10-3 presents a list of illegal dumpsites in Knox County.

### **10.3 Waste Oil**

#### **10.3.1 Current Practices**

Waste oil for recycling is collected from a variety of sources. These sources include service stations, the county's convenience centers, and other such establishments. Service stations generally select their own oil collection companies, while waste oil from the convenience centers has been collected by Industrial Oil Services since 1990.

Waste oil recycling in Knox County is performed by three companies: Enterprise Oil and Industrial Oil Services, both of Knoxville, and Necessary Oil Company of Bristol, VA.

Waste oil and oil filters are currently accepted for collection at each of the seven existing convenience centers in Knox County. This oil is picked up and transported by Industrial Oil Service for reprocessing and recycling.

Private businesses that offer oil change services within the region currently use the services of recycling companies as outlined in Table 10-4.

#### **10.3.2 Recycled Quantities**

Please refer to Tables 5-2 and 10-4 for detailed information about the quantity of oil being recycled within the region.

For the calendar year 1993, Enterprise Oil collected 302,500 gal. of oil from Knox County, and Necessary Oil collected 35,885 gal. of oil from the county. Industrial Oil collected 1,000,000 (approximate amount) gal. of oil in 1993, but the company was unable to provide information regarding how much of that total was received from Knox County.

**Table 10-3  
Illegal Dumpsites of Knox County**

<b>Location</b>	<b>Comments</b>
1. East End Road	
2. Coward Mill Road	
3. Copeland Drive	
4. Riverside Drive	
5. Holston Hills Road	
6. Wayland Road	
7. Flint Gap Road	
8. Carter Mill Road	
9. Nixon Road <sup>a</sup>	Brush; tremendous need for county operated brush and C & D facility
10. Rogers Road	Off map
11. Booher Road	Dead animals deposited on side of the road
12. Idumea Road	
13. Hogskin Road	
14. Jenkins Lane	Dead farm animals
15. Long Hollow Road	
16. Dawson Hollow Road	
17. McClure Road <sup>a</sup>	Old quarry, tires, household furnishings, C & D debris
18. Harold Lane <sup>a</sup>	Very poor area
19. Burnett Creek Road <sup>a</sup>	Problem area, has been issued attractive nuisance by county
20. Everett Road	
21. Canton Hollow Road	Borders private property
22. Tarwater Road	
23. Topside Road	
24. Yarnell Road	

**Table 10-3  
Illegal Dumpsites of Knox County**

<b>Location</b>	<b>Comments</b>
25. Bell Road	Old quarry; cars and brush; fenced off by county
26. Rifle Range Road	Volume cut by 99%
27. Link Road	Almost non-existent
28. Groves Road	
29. Shipe Town Road	
30. Mascot Road	
31. Smith School Road	Off map
32. Williams Bend Road	
33. Solway Road	
34. Badgett Road	Old landfill
35. Duncan Road	Haul out C & D debris three or four times a year
36. Cherokee Road	Very poor area, Vestal Community
37. Navy Drive <sup>a</sup>	C & D debris, household furnishings, tires, and brush
38. Army Drive <sup>a</sup>	C & D debris, household furnishings, tires, and brush
39. Lester Road <sup>a</sup>	Very poor area, brush, C & D waste, appliances
40. Hill Road	Off map
41. Berry Road	200 yd <sup>3</sup> last pull, out of sight-out of mind, poor area, transportation problem
42. Twin Creek Road <sup>a</sup>	1/2 mile from Convention Center, mostly C & D debris, brush, some household furnishings
43. Parkdale Road	Brush, C & D debris
44. Fountain City Road	Mostly trees, 4 dump truck loads removed 2 months ago
45. Brock Road	Off Texas Valley Road, mostly tires
46. Old Maynardville Pike	Next to Knox County line, closed off by Highway Department

**Table 10-3  
Illegal Dumpsites of Knox County**

<b>Location</b>	<b>Comments</b>
47. Amhurst Road	
48. Brown Road	
49. Harris Road	
50. Wright Ferry Road	
51. Twining Drive	
52. Thorngrove Road	
53. Stoney Point	
54. Thomas Town Road	
55. Brockett Road	
<sup>a</sup> Sites visited	
Note: Most or all of the remaining sites are small in size or non-existent.	

**Table 10-4  
Current Management of Used Oil  
Knox County**

<b>Firm</b>	<b>Management</b>	<b>Amount in Year</b>
Amoco Oil	Recycled – Enterprise and Necessary Oil	N/A <sup>a</sup>
BP Oil	Recycled – Necessary Oil	N/A
Conoco Oil	No oil recycling	-
Express Lube	Recycled	N/A
Exxon Oil	No oil recycling	-
Jiffy Lube	Recycled	22,000 gal.
Pennzoil Prolube	Recycled	26,000 gal.
PEP Boys	Recycled	3,000 gal.
Pilot Oil <sup>c</sup>	No oil recycling	-
Toyota of Knoxville	Recycled	12,000 gal.
Enterprise Oil	Recycles oil	302,500 gal.
Industrial Oil <sup>b</sup>	Recycles oil	N/A
Necessary Oil	Recycles oil	35,885 gal.

<sup>a</sup>N/A = Not Available

<sup>b</sup>Industrial Oil recycles 1,000,000 gal. of oil per year but is unsure of the exact amount coming from Knox County.

<sup>c</sup>Pilot Oil has no oil recycling but recycles 1,000 gal. of diesel fuel per year.

Excluding Industrial Oil, approximately 338,385 gal. of waste oil was collected from Knox County to be recycled.

This data was obtained by making a series of phone calls to the oil recycling companies as well as calls to various oil distributors and service station dealers.

### **10.3.3 Private Sector Support**

The Knox County Region will continue to support the state mandate to recycle all automotive products rather than directly dispose of them. It will encourage retailers to advertise the state toll-free hotline for used motor oil information.

In addition, leaflets outlining guidelines and the importance of consumer participation in automotive fluid recycling will be distributed at each convenience center and recycling center within the region.

## **10.4 Lead-Acid Batteries**

### **10.4.1 Current Practices**

All retailers of new batteries are required to exchange the new battery purchased for the old one. Waste lead-acid batteries are currently a valuable commodity and are purchased for salvage by dealers. All seven existing convenience centers within their region currently accept lead-acid batteries. These batteries are collected and transported by private individuals for recycling.

Lead-acid batteries, like other items, may be recycled or rebuilt for further use. Six known companies in Knox County accept used lead-acid batteries for that purpose (Table 10-5). These include The Battery Shop, Exide Battery Company, Swift Battery Company, R&R Battery Company, Industrial Battery Company, and East Tennessee Battery Company. Exide and East Tennessee Battery each receive approximately 2,000 batteries per month, the Battery Shop receives approximately 150 to 200 batteries per month and R&R accepts approximately 40 batteries per month. Industrial Battery Company deals with large industrial batteries, so it accepts only 4 to 5 batteries per month. Swift Battery accepts used batteries but sends them to companies in Alabama and Missouri. As a result, their exact figures are unknown. This data reflects calendar year 1993 and was obtained by phone calls made to each company.

### **10.4.2 Private Sector Support**

The Knox County Region will work closely with the local phone company to establish a section of the phone book to include a list of companies and the materials they are recycling. In addition, information pertaining to battery recycling and other

**Table 10-5  
Current Management of Lead-Acid Batteries  
Knox County**

<b>Firm</b>	<b>Disposition</b>	<b>Estimated Amount Handled Per Month</b>
The Battery Shop	Recycled	150 to 200
Swift Battery Co.	Sent to companies in Alabama and Missouri	Not available
Exide Battery Co.	Recycled	2,000
R&R Battery Co.	Recycled	40
Industrial Battery Co.	Recycles large industrial batteries	4 to 5
East Tennessee Battery Co.	Recycled	2,000

recyclable materials will be distributed at each of the convenience centers and recycling centers in the region.

## 10.5 Litter

An annual survey (Table 10-6) will be made to assess the current status of known illegal dump sites and any additional ones.

County roadwork crews work diligently to clean roadsides. These crews can best assess the existing dump sites. The Department of Transportation awards grants for the purpose of litter collection.

Efforts will be made to deter illegal dumping. These efforts will include cleanup and beautification of existing sites, creation of natural barriers, creation of stronger penalties, and better enforcement. This may include the creation of rewards for reporting illegal acts of dumping and the creation of a hotline (CLEAN-UP) for reporting. It will require the cooperation of the District Attorney's office and the creation of an Environmental Court that is willing to enforce the penalties.



**Table 10-6  
Knox Region  
Illegal Dump Survey**

<b>Name and Map Number:</b>	
<b>Estimated Size (Volume or Area):</b>	
<b>Location:</b>	
<b>Estimated Age:</b>	
<b>Contents (Check Applicable Items):</b>  Tires Refrigerators    Stoves Batteries Household Garbage Furniture Dead Animals Other:  Wire	Cars Lumber Large Tree Stumps Construction Debris Brush Live Animals
<b>Comments:</b>	

## **Chapter 11**

# **Implementation: Schedule, Staffing, and Funding**

### **11.1 System Definition**

#### **11.1.1 Overall Strategy**

The integrated waste management system for the Knox County Planning Region consists of four elements: source reduction, source diversion, recycling, and landfilling. It is anticipated that alternative disposal methods and recycling will divert the largest quantities of waste from the Class I Landfill.

The regional goal is to use the existing solid waste management infrastructure in the county, city, and adjacent counties to improve upon a system that is already partially integrated. The strategy for achieving this goal includes:

- Increasing the types and amounts of recycled materials
- Getting more of the public, educational institutions, businesses, and industries involved in source reduction and recycling
- Permitting private Class IV Landfills within the County as appropriate
- Expanding the public education program

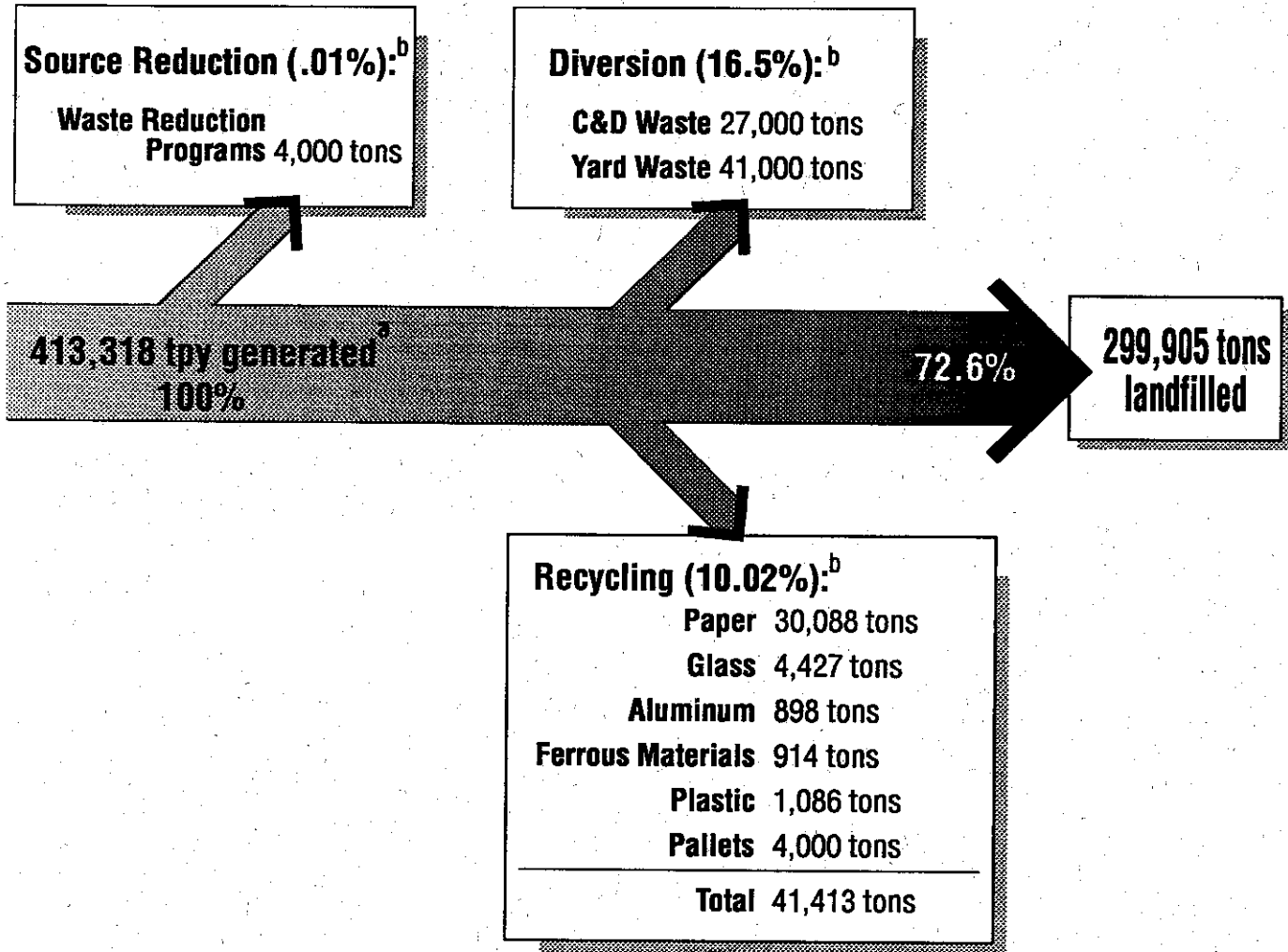
For the purposes of overall strategy and system definition, Knox County has chosen to use a Class I Landfill to dispose of its materials (that are not recycled or diverted to the Class IV Landfill) for the duration of the planning period. For the short-term, Knox County will use the Chestnut Ridge Landfill in Anderson County. Within five years Knox County will reevaluate the opportunity of an in-county Class I Landfill and alternative out-of-county landfills. Knox County has not selected which landfill or combination of landfills it will use for the second half of the planning period.

#### **11.1.2 Flow Diagram**

The flow components of the proposed regional system are shown in Figure 11-1. The components include source reduction, source diversion, recycling, and landfilling. The approximate percentages of each component are also shown in the figure.

#### **11.1.3 Composite Map**

A composite map of the proposed regional system is shown in Figure 11-2 (located at the end of this chapter) and includes both existing and proposed system elements. Arrows



**NOTES:**

a 1995 projected waste tonnages were used from Table 4-1.

b Quantities are from 1995 target in Table 4-1.

Figure 11.1  
**Final System Configuration**  
 KNOX COUNTY WASTE PLANNING REGION

indicate the waste flow patterns within the county and the waste flow to the importing county.

#### **11.1.4 Institutional Structure**

The institutional structure that has been established to implement the plan consists of the Knox Solid Waste Planning Regional Board and three implementing bodies: Knox County Solid Waste Department, Knox County Highway Department, and City of Knoxville Public Services Department-Solid Waste Management. The Board, as a planning body, will have responsibility for plan modifications, the five-year plan update, and annual reports. The Board will also function in an oversight role to ensure that the major milestones and goals of the plan are being met. The Knox County Highway Department is responsible for operation of seven convenience centers, cleanup of illegal dumps, and disposal of waste tires. The Knox County Solid Waste Department is responsible for plan implementation and program development. The City of Knoxville Public Services Department is responsible for the collection of solid waste in the city, operation of the recycling centers, and operation of the Boyd Street transfer station.

### **11.2 Implementation Schedule**

The combined implementation schedule for all components of the plan is presented in Table 11-1. Items that were mentioned in more than one chapter have been combined in this schedule, which is based on the budgetary fiscal years to facilitate comparisons between the budget and schedule tables.

The schedule is more detailed in the first half of the planning period because goals and objectives are more clearly defined for this period. However, it is anticipated that when the five-year update is prepared, a detailed schedule will be provided for the second half of the planning period.

After this solid waste management plan is approved, work will begin to implement new programs for improved solid waste management that are described in this plan. The county will transition from the system planning to the program implementation phase, which has distinct management needs, challenges, and hurdles. To ensure successful implementation of programs, the county will need to conduct implementation-level planning, budgeting, feasibility analysis, and analysis of program-specific design parameters for many programs described in the plan prior to their implementation. This is necessary because of the ever-evolving dynamics in a solid waste system that renders even the best solid waste management plan only a snapshot in time. Just a few of the changing parameters that affect the county's ability to successfully implement the recommended programs include the following:

- Changing materials markets
- Changing processing technologies

**Table 11-1  
Overall Implementation Schedule for  
Knox County Solid Waste Planning Region**

Fiscal Year	Task	Target Date
1993/1994	<ol style="list-style-type: none"> <li>1. Schedule UT CIS Waste Reduction Workshop</li> <li>2. Schedule TVA reduction retirees with largest waste generators</li> <li>3. Request copies of solid waste/recycling educational materials from teachers through administrative bulletin</li> <li>4. Obtain state brochures to determine suitability</li> <li>5. Select the site for tire storage facility</li> <li>6. Meet with school administration to plan paper recycling at all facilities</li> <li>7. Work with city, recycling coalition, UT Agricultural Extension Service to initiate backyard composting program</li> <li>8. Develop media plan and schedule news releases</li> <li>9. Design and construct tire storage facility</li> <li>10. Submit Knox Regional Solid Waste Plan</li> <li>11. Information campaign on true costs of waste disposal (general public)</li> <li>12. Meet with representatives of waste haulers to discuss potential for variable rate charges</li> <li>13. Coordinate county participation in city's contracted yard waste operation</li> <li>14. Establish at least two (2) business focus groups</li> <li>15. Perform feasibility study for HHW permanent collection facility</li> <li>16. Conduct Illegal Tire Survey</li> <li>17. Develop "Green Pages" section for phone books</li> <li>18. Perform feasibility study of franchise collection system within the county</li> <li>19. Place public service announcements (PSAs)</li> <li>20. Develop display with City Solid Waste and schedule</li> <li>21. Schedule talks to neighborhood groups and civic clubs</li> </ol>	<ol style="list-style-type: none"> <li>1. 02/23/94</li> <li>2. beginning 03/01/94</li> <li>3. 03/01/94</li> <li>4. 03/01/94</li> <li>5. 03/01/94</li> <li>6. 04/01/94</li> <li>7. 04/01/94</li> <li>8. 06/01/94</li> <li>9. 06/01/94</li> <li>10. 06/13/94</li> <li>11. 06/30/94</li> <li>12. 06/30/94</li> <li>13. 06/30/94</li> <li>14. 06/30/94</li> <li>15. 06/30/94</li> <li>16. 06/30/94</li> <li>17. 06/30/94</li> <li>18. 06/30/94</li> <li>19. Ongoing</li> <li>20. Ongoing</li> <li>21. Ongoing</li> </ol>
1994/1995	<ol style="list-style-type: none"> <li>1. Immediate hiring of all staff necessary for plan implementation</li> <li>2. Seek grant for educational program</li> <li>3. Establish policies for waste reduction, reuse, and purchase of recycled materials for all government offices</li> <li>4. Begin planning for office paper recycling at all government buildings</li> <li>5. Set standards at convenience centers</li> <li>6. Information campaign targeted to office building managers</li> <li>7. Establish office paper and cardboard recycling in five new target zones</li> <li>8. Begin planning a home and neighborhood Master Composter education program with UT Agricultural Extension</li> <li>9. Meet with school administration to develop composting program at schools</li> <li>10. Train attendants to promote recycling at all convenience centers</li> <li>11. Information campaign on yard waste targeted to county residents</li> <li>12. Set up yard waste composting demos at convenience centers</li> <li>13. New signage for recyclables at convenience centers</li> <li>14. Recycling available at all Knox County schools (paper, glass, aluminum, plastic)</li> <li>15. Select site and apply for grant for additional convenience centers</li> </ol>	<ol style="list-style-type: none"> <li>1. 07/01/94</li> <li>2. 07/01/94 (after plan is approved)</li> <li>3. 07/31/94</li> <li>4. 07/31/94</li> <li>5. 07/31/94</li> <li>6. 07/31/94</li> <li>7. 07/31/94</li> <li>8. 07/31/94</li> <li>9. 08/01/94</li> <li>10. 08/31/94</li> <li>11. 08/31/94</li> <li>12. 08/31/94</li> <li>13. 08/31/94</li> <li>14. 08/31/94</li> <li>15. 09/30/94</li> </ol>

**Table 11-1  
Overall Implementation Schedule for  
Knox County Solid Waste Planning Region**

Fiscal Year	Task	Target Date
1994/1995 (continued)	16. Information campaign on illegal dumping (general public)	16. 09/30/94
	17. Establish two (2) additional business focus groups	17. 10/31/94
	18. Ban yard waste disposal at convenience centers	18. 10/31/94
	19. Increase fines for illegal dumping and littering and/or require community service	19. 10/31/94
	20. Begin information campaign about convenience centers disposal fee	20. 11/30/94
	21. Initiate a landfill site suitability search for a Class I landfill in Knox County	21. 12/01/94
	22. Develop information campaign targeted to restaurants and hospitality industry	22. 12/30/94
	23. Assess user fee system for convenience centers	23. 06/30/95
	24. Consider removing hauling and landfill disposal costs for convenience centers from County taxes	24. 12/31/94
	25. Coordinate industries for waste exchange listing in Southern Waste eXchange	25. 12/31/94
	26. Establish office paper recycling programs in at least five new target zones	26. 12/31/94
	27. Waste audit completed for at least three county-operated facilities	27. 01/01/95
	28. Negotiate variable can rate for haulers providing service to county residents	28. 01/01/95
	29. Provide economic incentives for industries using recycled materials as feedstock	29. 01/01/95
	30. Consider charging a fee for waste disposal at convenience centers	30. 01/01/95
	31. Begin encouraging large generators to submit solid waste reduction plans.	31. 01/01/95
	32. Ban newspaper and cardboard disposal at convenience centers	32. 01/31/95
	33. Collect transportation and collection data for Annual Report	33. 01/31/95
	34. Collect recycling operating data for 1994 and submit to Solid Waste Board	34. 01/31/95
	35. Information campaign targeted to construction industry	35. 01/31/95
	36. Collect problem waste data for Annual Report	36. 02/01/95
	37. Begin waste exchange program for business and industry	37. 02/01/95
	38. Schedule field trip with school administrations	38. 02/28/95
	39. Negotiate ban of C&D debris from Chestnut Ridge Landfill	39. 03/01/95
	40. Submit Annual Report	40. 04/01/95
	41. Design and construct 8th convenience center	41. 04/30/95
	42. Propose building codes to require recycling in apartment buildings and commercial developments	42. 06/30/95
	43. Purchase additional transportation vehicles for convenience center recycling	43. 06/30/95
	44. Design and construct HHW facility	44. 06/30/95
	45. Conduct Illegal Tire Survey	45. Ongoing
	46. Place PSA's, newsletter stories, news releases	46. Ongoing
	47. Continue TVA reduction retiree program	47. Ongoing
	48. Seek partners for backyard composting funding	48. Ongoing

**Table 11-1  
Overall Implementation Schedule for  
Knox County Solid Waste Planning Region**

Fiscal Year	Task	Target Date
1995/1996	<ol style="list-style-type: none"> <li>1. Evaluate all programs to determine quantities reduced</li> <li>2. Seek grant for education program implementation</li> <li>3. Kickoff promotional campaign</li> <li>4. Decision on long-term landfill plans in Knox County</li> <li>5. Select site for 9th convenience center</li> <li>6. Initiate contract negotiations with private landfill or design landfill, depending on decision</li> <li>7. Establish Adult Education Program</li> <li>8. Hold 25% news event at landfill</li> <li>9. Collect recycling operating data, problem waste data, and transportation and collection data and submit to Regional Solid Waste Board</li> <li>10. Submit Annual Report to State</li> <li>11. Submit Annual Report to Office of Cooperative Marketing</li> <li>12. Purchase cardboard baler</li> <li>13. Design and construct 9th convenience center</li> <li>14. Renovate existing transfer station</li> <li>15. Conduct Illegal Tire Survey</li> <li>16. Place PSA's, newsletter stories, news releases</li> <li>17. Continue TVA retiree reduction program</li> </ol>	<ol style="list-style-type: none"> <li>1. 07/01/95</li> <li>2. 07/01/95</li> <li>3. 07/01/95</li> <li>4. 09/01/95</li> <li>5. 09/30/95</li> <li>6. 10/10/95</li> <li>7. 12/31/95</li> <li>8. 12/31/95</li> <li>9. 01/31/04</li> <li>10. 03/01/96</li> <li>11. 03/01/96</li> <li>12. 03/31/96</li> <li>13. 04/01/96</li> <li>14. 06/30/96</li> <li>15. 06/30/96</li> <li>16. Ongoing</li> <li>17. Ongoing</li> </ol>
1996/1997	<ol style="list-style-type: none"> <li>1. Purchase new transportation vehicles for transfer station modification</li> <li>2. Begin implementation of new collection system as appropriate</li> <li>3. Collect recycling operating data, problem waste data, and transportation and collection data and submit to Regional Solid Waste Board</li> <li>4. Submit Annual Report to State</li> <li>5. Submit Annual Report to Office of Cooperative Marketing</li> <li>6. Implement user fee for convenience centers if appropriate</li> <li>7. Conduct Illegal Tire Survey</li> <li>8. Ongoing education</li> <li>9. Place PSA's, newsletter stories, news releases</li> <li>10. Continue TVA retiree reduction program</li> </ol>	<ol style="list-style-type: none"> <li>1. 07/31/96</li> <li>2. 01/02/97</li> <li>3. 01/31/04</li> <li>4. 03/01/97</li> <li>5. 03/01/97</li> <li>6. 06/30/97</li> <li>7. 06/30/97</li> <li>8. Ongoing</li> <li>9. Ongoing</li> <li>10. Ongoing</li> </ol>
1997/1998	<ol style="list-style-type: none"> <li>1. Have signed contract for waste disposal</li> <li>2. Collect transportation and collection data for Annual Report</li> </ol>	<ol style="list-style-type: none"> <li>1. 07/01/97</li> <li>2. 01/31/98</li> </ol>
1998/1999 through 2003/2004	<ol style="list-style-type: none"> <li>1. Collect recycling operating data, problem waste data, and transportation and collection data and submit to Regional Solid Waste Board</li> <li>2. Submit Annual Report to State</li> <li>3. Submit Annual Report to Office of Cooperative Marketing</li> <li>4. Conduct Illegal Tire Survey</li> <li>5. Place PSAs, newsletter stories, news releases</li> <li>6. Ongoing education</li> </ol>	<ol style="list-style-type: none"> <li>1. 01/31/04</li> <li>2. 03/01/04</li> <li>3. 03/01/04</li> <li>4. 06/30/04</li> <li>5. Ongoing</li> <li>6. Ongoing</li> </ol>

## **11.4 Budget**

### **11.4.1 Overall Ten-Year Budget**

The estimated costs for all system elements of the 10-year plan are combined and presented in Table 11-3. An adjustment for inflation was not made.

### **11.4.2 Plan for Financing Capital Improvement Project**

The expenditures that will probably occur in the planning period will be for the new and upgraded convenience centers, a tire storage facility, potential upgrades to the Boyd Street transfer station to better accommodate Class IV waste, and a permanent HHW facility. These will be purchased with general obligation bonds or state grant money. Normal equipment replacement costs will also occur during the planning period.

Financing for a new landfill, if that is the selected option, would be accomplished by procuring a loan or issuing bonds.

### **11.4.3 Plan for Operation and Maintenance Costs**

Knox County will meet projected annual operation and maintenance costs for the next 10 years as they have in the past. More than 95 percent of the total revenue requirements have been met through the use of property taxes. However, the financing structure of this plan may change when the variable rate fee structure plan and other decisions are made.



Table 11-3

Projected 10-Year Budget and Funding Plan  
Comprehensive Solid Waste Management Plan

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
<b>Operating Revenues</b>											
Property Taxes (a)	\$7,413,762	\$9,025,921	\$9,133,910	\$8,944,208	\$9,249,093	\$9,580,998	\$9,970,042	\$10,248,852	\$10,674,492	\$11,282,149	\$11,591,419
Refuse Collection Fees (b)	49,000	49,000	49,000	49,000	49,000	49,000	49,000	49,000	49,000	49,000	49,000
Landfill Fees (c)	72,003	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
Sale of Materials (d)	0	0	0	0	0	0	0	0	0	0	0
Other	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
<b>Total</b>	<b>\$7,549,765</b>	<b>\$9,159,921</b>	<b>\$9,267,910</b>	<b>\$9,078,208</b>	<b>\$9,383,093</b>	<b>\$9,714,998</b>	<b>\$10,104,042</b>	<b>\$10,382,852</b>	<b>\$10,808,492</b>	<b>\$11,416,149</b>	<b>\$11,725,419</b>
<b>Operating Expenditures</b>											
Waste Collection and Transportation	\$3,624,181	\$3,887,057	\$4,094,610	\$4,219,408	\$4,324,293	\$4,446,198	\$4,573,242	\$4,711,052	\$4,854,692	\$5,004,349	\$5,158,619
Recycling	1,103,250	1,450,260	1,439,260	1,439,260	1,439,260	1,439,260	1,444,260	1,439,260	1,439,260	1,439,260	1,439,260
Disposal	2,512,192	2,615,000	2,795,000	2,998,000	3,198,000	3,423,000	3,665,000	3,926,000	4,208,000	4,511,000	4,836,000
Public Information	0	82,680	82,680	17,680	17,680	17,680	17,680	17,680	17,680	17,680	17,680
Problem Wastes	17,143	133,786	263,860	263,860	263,860	263,860	263,860	263,860	263,860	263,860	263,860
<b>Total</b>	<b>\$7,256,765</b>	<b>\$8,168,783</b>	<b>\$8,675,410</b>	<b>\$8,938,208</b>	<b>\$9,243,093</b>	<b>\$9,589,998</b>	<b>\$9,964,042</b>	<b>\$10,357,852</b>	<b>\$10,783,492</b>	<b>\$11,236,149</b>	<b>\$11,715,419</b>
<b>Net Operating Income</b>	<b>293,000</b>	<b>991,138</b>	<b>592,500</b>	<b>140,000</b>	<b>140,000</b>	<b>125,000</b>	<b>140,000</b>	<b>25,000</b>	<b>25,000</b>	<b>180,000</b>	<b>10,000</b>
<b>Non-Operating Revenues</b>											
State Grants	\$25,000	\$42,500	\$42,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total</b>	<b>\$25,000</b>	<b>\$42,500</b>	<b>\$42,500</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Non-Operating Expenditures</b>											
Waste Collection and Transportation	\$268,000	\$460,000	\$635,000	\$140,000	\$140,000	\$125,000	\$140,000	\$25,000	\$25,000	\$180,000	\$10,000
Recycling	0	0	0	0	0	0	0	0	0	0	0
Disposal	0	50,000	0	0	0	0	0	0	0	0	0
Public Information	0	0	0	0	0	0	0	0	0	0	0
Problem Wastes	50,000	523,638	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>\$318,000</b>	<b>\$1,033,638</b>	<b>\$635,000</b>	<b>\$140,000</b>	<b>\$140,000</b>	<b>\$125,000</b>	<b>\$140,000</b>	<b>\$25,000</b>	<b>\$25,000</b>	<b>\$180,000</b>	<b>\$10,000</b>
<b>Net Non-Operating Income</b>	<b>(\$293,000)</b>	<b>(\$991,138)</b>	<b>(\$592,500)</b>	<b>(\$140,000)</b>	<b>(\$140,000)</b>	<b>(\$125,000)</b>	<b>(\$140,000)</b>	<b>(\$25,000)</b>	<b>(\$25,000)</b>	<b>(\$180,000)</b>	<b>(\$10,000)</b>
<b>Net Income</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

SOURCE: Summarized from Tables 5-4, 6-3, 8-3, 9-5, and 10-1.

NOTES:

- a. The majority of revenue requirements are expected to continue to be met by Knoxville and Knox County property tax revenues.
- b. Knoxville currently receives refuse collection fees of about \$50,000 per year. These revenues are assumed to continue.
- c. Knoxville currently receives landfill fees of about \$70,000 per year. These revenues are assumed to continue.
- d. Revenues from the sale of recyclable materials are reflected in reduced payments for waste disposal at the landfill.

- Private sector collection, transfer, and recycling initiatives
- Variable participation rates
- Changing system economics

For these reasons new programs, particularly waste reduction and recycling programs, will often be implemented on a pilot program basis, then refined before full implementation. Likewise, if the feasibility analysis or pilot program results indicate that a program recommended in this plan is no longer likely to help improve solid waste management in Knox Region, the region may discontinue that program and focus on resources elsewhere. All programs will be implemented with the aim of achieving the goals stated in this plan.

### **11.3 Staffing and Training Requirements**

#### **11.3.1 Authorized 1993 Solid Waste Management Positions**

Positions involved in the management of solid waste for the base year 1993 are with the Knox County Solid Waste Management and the City Public Services Department.

The county staff consists of 22 people. Three are used to cleanup illegal dumps, two for recycling, twelve for the convenience centers, four for roadside cleanup (funded by the state), and one for solid waste administration.

The city employs a total of 143 full-time staff for solid waste management. Collection is handled by 131 employees, 3 employees are associated with recycling, and 9 employees work at the transfer station. Neither the city nor the county staff will need to be certified because the landfill is privately owned. If the region elects to construct its own landfill after 1997, the staff will need to be certified.

#### **11.3.2 Ten-Year Staffing Plan**

The proposed staffing needs for the next 10 years are dictated primarily by the increased recycling and public education. Up to six more staff members will be needed at the convenience centers to handle the additional materials and operating hours, two additional recycling technicians will be needed, and an increase in crews for litter cleanup will also be likely. Two recycling coordinators, one to manage residential recycling and special programs, and one to manage commercial and industrial recycling, are scheduled to be hired in FY 1994/1995. An administrative assistant for the Knox County Solid Waste Department will also be needed in FY 1994/1995. The staffing plan is presented in Table 11-2.

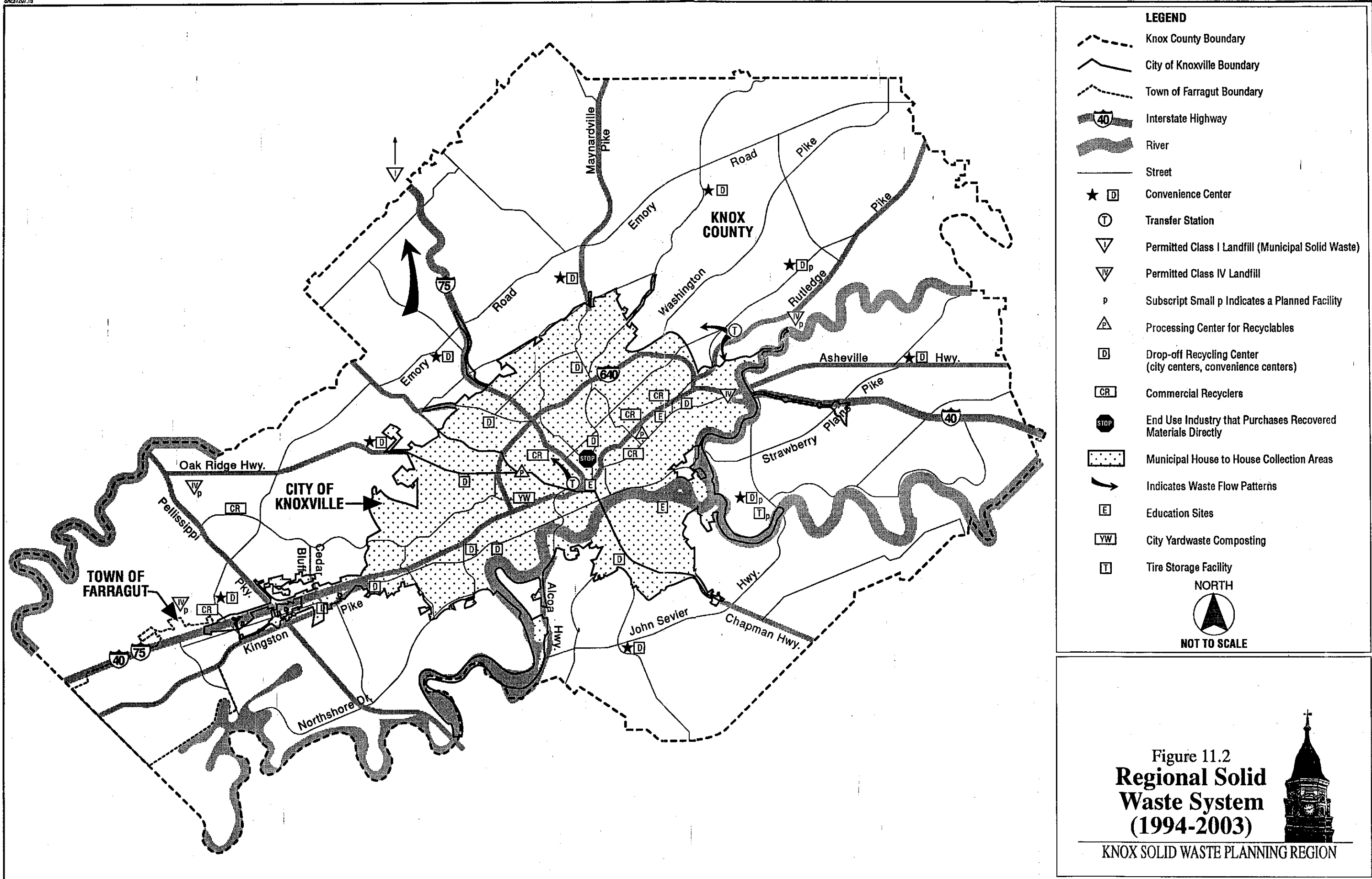
**Table 11-2  
Ten-Year Overall Staffing Plan**

Fiscal Year	Chapter 5	Chapter 6	Chapter 7	Chapter 8	Chapter 9	Chapter 10
1993/1994						
1994/1995	Convenience Center Staff Recycling Techs Road Crews	SW Coordinator-Residential SW Coordinator-Commercial Administrative Assistant			SW Coordinator <sup>b</sup>	
1995/1996	Convenience Center Staff Recycling Techs Road Crews					Education Coordinator <sup>b</sup> Administrative Assistant Clerical
1996/1997	Convenience Center Staff					
1997/1998						
1998/1999						
1999/2000						
2000/2001						
2001/2002						
2002/2003						
2003 <sup>c</sup>						

<sup>a</sup>Only covers second half of base year.

<sup>b</sup>Same position as Residential SW Coordinator in Chapter 6.

<sup>c</sup>End of planning period is December 31, 2003, which is only half of this fiscal year.



**LEGEND**

- Knox County Boundary
- City of Knoxville Boundary
- Town of Farragut Boundary
- Interstate Highway
- River
- Street
- Convenience Center
- Transfer Station
- Permitted Class I Landfill (Municipal Solid Waste)
- Permitted Class IV Landfill
- Subscript Small p Indicates a Planned Facility
- Processing Center for Recyclables
- Drop-off Recycling Center (city centers, convenience centers)
- Commercial Recyclers
- End Use Industry that Purchases Recovered Materials Directly
- Municipal House to House Collection Areas
- Indicates Waste Flow Patterns
- Education Sites
- City Yardwaste Composting
- Tire Storage Facility

NORTH  
  
NOT TO SCALE

**Figure 11.2**  
**Regional Solid Waste System**  
**(1994-2003)**

---

KNOX SOLID WASTE PLANNING REGION

**Chapter 12**  
**Allocation of Implementation Responsibilities:**  
**Plan Adoption and Submission**

**12.1 One-County Regions**

This 10-Year Municipal Solid Waste Regional Plan was formally adopted by resolution of the Knox County Solid Waste Planning Region Board on March 21, 1994. The resolution was signed by the Chairman of the region, Mr. Tom Haskins. The Knox County Commission adopted the plan on May 23, 1994.

Copies of the resolutions pertaining to plan adoption are found in Appendix E.

**12.2 Solid Waste Authorities**

This section does not apply because the plan was developed and adopted by the Knox Solid Waste Planning Region Board, and formation of an authority is not planned. An authority formed in 1986 currently exists, but is in the process of being legally dissolved. This former authority has not and will not be involved in any aspect of plan implementation.

**12.3 Local Planning Commission Review**

The Knoxville/Knox County MPC was provided with opportunities both to help prepare the plan and to formally approve it. Staff from the MPC served on the Finance Committee and helped to verify and update data from the Knox County Needs Assessment (ETDD, 1992) that were included in Chapters 1 and 2. Staff also participated in the work sessions.

A MPC workshop was held to present the plan on March 24, 1994. Formal MPC approval of the plan was obtained at the meeting on April 14, 1994. The signed resolution pertaining to the approval is found in Appendix E.

## **Chapter 13**

# **Flow Control and Permit Application Review**

### **13.1 Flow Control**

Provisions for flow control are found in the 1991 Solid Waste Act (T.C.A. 68-211-814); these provisions allow a region to control the flow of collected municipal solid waste generated in the region and to impose bans on out-of-county waste. However, flow control provisions apply only to waste disposed in Class I Landfills or incinerators. Because the Knox Region does not have a Class I Landfill and is not planning one in the near future, the issue of flow control is not relevant to this region.

### **13.2 Permit Application Review**

The Knox Region has no current plans to establish an authority. Any permit review functions will therefore be performed by the Regional Solid Waste Board. The board will review the permit application to determine if it is consistent with the 10-year plan.

When the application is received, a notice will be published in the local newspapers announcing that the application may be viewed by the public at libraries and the courthouse. The public notice will also announce when a public meeting will be held. A public meeting is not required to be held prior to the public hearing. However, this two-step approach (the first step is to exchange information at the public meeting) would likely increase the public's opportunities to understand the issues.

Interested persons may comment in writing and verbally at the public meeting and at the public hearing. A public hearing will be held in accordance with the provisions of T.C.A. 68-211-814(b)(2)(A), and the decision on the permit application will be made at that time. The decision will be documented by resolution, and a copy of the resolution shall be immediately submitted to the commissioner.

## Works Cited

East Tennessee Development District (ETDD). *Knox County Solid Waste Needs Assessment*. September 30, 1992.

Tennessee Department of Environment and Conservation (TDEC). *Guidelines on the 25% Waste Reduction Goal*. Division of Solid Waste Assistance. December 1993.

University of Tennessee (UT). *Managing Our Waste: Solid Waste Planning for Tennessee*. Waste Management Research and Education Institute. February 1991.

**Appendix A**  
**Legal Documentation and Organization of the Region**







# William Mike Padgett

Knox County Clerk

STATE OF TENNESSEE

COUNTY OF KNOX

I, William Mike Padgett, Clerk of Knox County, Tennessee, do hereby certify that the attached is a true and correct copy of Resolution R-92-11-127 - Resolution of the Commission of Knox County, Tennessee creating the Knox County Municipal Solid Waste Planning Region.

This resolution was approved by the Knox County Board of Commissioners at their November 23, 1992 regular session meeting.

The same shall appear of record in Resolution Book 5 in the office of the Knox County Clerk.

Witness my hand at office in Knoxville, Tennessee this the 16th day of February 1994.

A handwritten signature in cursive script that reads "Wm Mike Padgett".

Wm. Mike Padgett  
Knox County Clerk



RESOLUTION

RESOLUTION OF THE COMMISSION OF  
KNOX COUNTY, TENNESSEE CREATING THE  
KNOX COUNTY MUNICIPAL SOLID WASTE  
PLANNING REGION.

RESOLUTION NO.: R-92-11-127

REQUESTED BY: \_\_\_\_\_

PREPARED BY: Knox County Law Director

APPROVED AS TO FORM AND CORRECTNESS *Richard T. Baker*  
Date

APPROVED: November 23, 1992  
Date

VETOED: \_\_\_\_\_  
Date

VETO OVERRIDE: \_\_\_\_\_  
Date

MINUTE BOOK \_\_\_\_\_ PAGE \_\_\_\_\_

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. §68-211-801 et seq. entitled the "Solid Waste Management Act of 1991"; and

WHEREAS, with the view that better planning for solid waste disposal 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 worked for the passage of this Act; and

WHEREAS, among the stated public policies of this Act is to institute and maintain a comprehensive, integrated, statewide program for solid waste management; and

WHEREAS, the nine development districts in the State of Tennessee have completed district needs assessments which are inventories of the solid waste systems in Tennessee; and

WHEREAS, the Commission of Knox County has given consideration to the needs assessment prepared by the East Tennessee Development District; and

WHEREAS, T.C.A. §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 stated 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 regions to assist these regions in developing their 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; 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 Knox County.

NOW, THEREFORE, BE IT RESOLVED BY THE COMMISSION OF KNOX COUNTY AS FOLLOWS:

That the Commission, acting pursuant to T.C.A. §68-211-801 et seq., hereby establishes the Knox County Municipal Solid Waste Region for Knox County, Tennessee; and

BE IT FURTHER RESOLVED, that pursuant to T. C. A. §68-211-813(a)(2), the Commission finds and determines that Knox County shall be and shall constitute a single county municipal solid waste region based upon the following conditions and considerations:

1. The increasing urbanization and density of population of Knox County;

2. The characteristics of municipal solid waste generated within the County, particularly that portion of municipal solid waste resulting from the greater level of industrial and commercial activity within the County;

3. The volume of municipal solid waste generated and available for disposal, recovery, or recycling; and

4. The complexity of appropriate waste flow control within the County.

BE IT FURTHER RESOLVED, that pursuant to T.C.A. §68-211-831(b)(1), the Knox County Municipal Solid Waste Region Management Board is hereby established to administer the activities of this Region; and

BE IT FURTHER RESOLVED, that this Management Board shall be composed of nine (9) members; and

BE IT FURTHER RESOLVED, that pursuant to T.C.A. §68-211-813(b)(1), eight (8) Board members shall be appointed by the County Executive and approved by the Commission, and one (1) Board member appointed by the Mayor of the City of Knoxville, Tennessee, and approved by the City Council of Knoxville; and

BE IT FURTHER RESOLVED, that the members of the Board of the Municipal Solid Waste Region shall serve a six (6) year term, provided however the initial term of those persons appointed shall be as follows: Two (2) members appointed by the County Executive shall have a two (2) year term, three (3) members appointed by the County Executive shall have a four (4) year term, three (3) members appointed by the County Executive shall have a six (6) year term, and the member appointed by the Mayor of Knoxville shall have a two (2) year term; and

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

BE IT FURTHER RESOLVED, that at the Board's initial organizational meeting it shall select from its members a chairman, vice-chairman, 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,

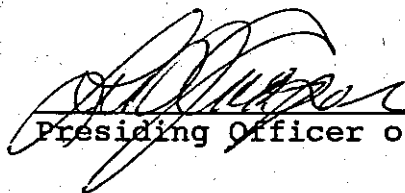
BE IT FURTHER RESOLVED, that the Board, in the furtherance of its duty to produce a municipal solid waste region plan, is authorized to apply for and receive funds from the State of Tennessee, the federal government, Knox County, City of

Knoxville, and to apply for and receive donations and grants from private corporations and foundations; and

BE IT FURTHER RESOLVED, that Knox County shall receive, disburse, and act as the fiscal agent for the administration of the funds of the Region and the Region's Board; and


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

BE IT FURTHER RESOLVED, this Resolution take effect as provided by the Charter of Knox County, Tennessee, the public welfare requiring it.

 Date 12/14/92  
Presiding Officer of the Commission

  
County Clerk

Approved:

 Date 11/30/92  
County Executive

Vetoed:

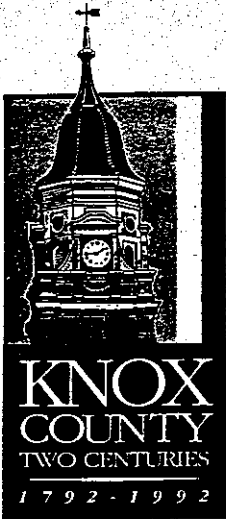
\_\_\_\_\_  
County Executive Date \_\_\_\_\_

**Knox County Solid Waste Planning Region  
Board of Directors**

<b>Member</b>	<b>Jurisdiction</b>	<b>Term of Office</b>
Tom Haskins, Chair	Knox County	2 years
Daphne Murdock, Vice-Chair	Knox County	4 years
Mike Dontje, Secretary	Knox County	6 years
Clyde Hawn	Farragut	2 years
Larry Clark	Knox County	4 years
Donna Creech	City of Knoxville	2 years
Douglas Hulme	Knox County	4 years
Edythe McNabb	Knox County	6 years
Maxine McManus	Knox County	6 years
Dr. Bob Kirk	Knox County	6 years
Connie Whitehead	Knox County	4 years

KNOX COUNTY GOVERNMENT

Dwight Kessel  
County Executive



March 23, 1993

Mr. Tom Haskins  
Southeastern Telecom, Inc.  
6701 Baum Drive  
Suite 230  
Knoxville, TN 37919

Dear Mr. Haskins:

Thank you for agreeing to serve on the Regional Solid Waste Board. I had hoped this letter would officially notify you of the County Commission confirmation of your position. However, on March 22, the commission delayed any confirmation votes and directed staff to expand the board by two positions to include representatives from the east and south ends of the county. We will have that completed by the April 26 meeting.

Please note the commissioners expressed agreement with Mr. Kessel's recommendations so I'm confident your confirmation will be only a formality. That being the case, I would like to encourage you to attend a solid waste teleconference Monday afternoon, April 5. The national panelists will speak from 2:00-4:00 p.m. and the local panelists will answer questions from 4:00-5:00 p.m. I think you will find it interesting and informative, and it would be a good opportunity for you to meet your fellow board members. Although it is not an official board meeting, I would like to get some direction from you after the conference as to what areas of solid waste management you would like to hear about in a workshop to be scheduled later. Again, thanks for your willingness to serve and I hope to see you April 5.

Sincerely,

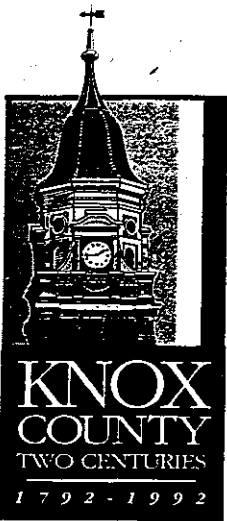
A handwritten signature in cursive script that reads "John".

John Evans  
Public Affairs Director

Enclosure: list of board members  
cc: State Planning Office

200 Main Avenue  
City-County Building  
Suite 651  
Knoxville, TN 37902  
(615) 521-2005





KNOX COUNTY GOVERNMENT

Dwight Kessel  
County Executive

March 23, 1993

Ms. Daphne Murdock  
8201 Wiebelo Drive  
Knoxville, TN 37931

Dear Ms. Murdock:

Thank you for agreeing to serve on the Regional Solid Waste Board. I had hoped this letter would officially notify you of the County Commission confirmation of your position. However, on March 22, the commission delayed any confirmation votes and directed staff to expand the board by two positions to include representatives from the east and south ends of the county. We will have that completed by the April 26 meeting.

Please note the commissioners expressed agreement with Mr. Kessel's recommendations so I'm confident your confirmation will be only a formality. That being the case, I would like to encourage you to attend a solid waste teleconference Monday afternoon, April 5. The national panelists will speak from 2:00-4:00 p.m. and the local panelists will answer questions from 4:00-5:00 p.m. I think you will find it interesting and informative, and it would be a good opportunity for you to meet your fellow board members. Although it is not an official board meeting, I would like to get some direction from you after the conference as to what areas of solid waste management you would like to hear about in a workshop to be scheduled later. Again, thanks for your willingness to serve and I hope to see you April 5.

Sincerely,

John Evans  
Public Affairs Director

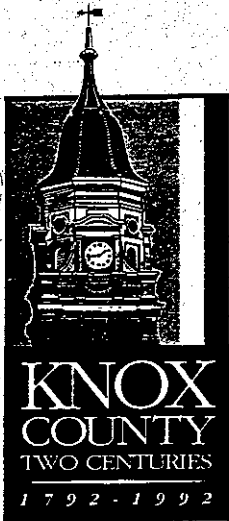
Enclosure: list of board members  
cc: State Planning Office

400 Main Avenue  
City-County Building  
Suite 651  
Knoxville, TN 37902  
(615) 521-2005



KNOX COUNTY GOVERNMENT

Dwight Kessel  
County Executive



March 23, 1993

Mr. Michael S. Dontje  
Home Builders Association  
8217 Weibelo Drive  
Knoxville, TN 37931

Dear Mr. Dontje:

Thank you for agreeing to serve on the Regional Solid Waste Board. I had hoped this letter would officially notify you of the County Commission confirmation of your position. However, on March 22, the commission delayed any confirmation votes and directed staff to expand the board by two positions to include representatives from the east and south ends of the county. We will have that completed by the April 26 meeting.

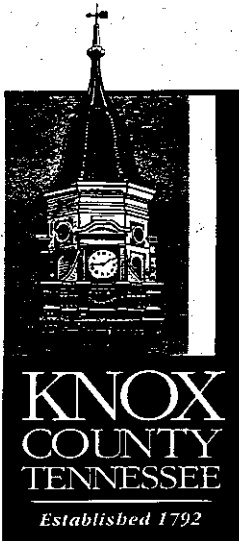
Please note the commissioners expressed agreement with Mr. Kessel's recommendations so I'm confident your confirmation will be only a formality. That being the case, I would like to encourage you to attend a solid waste teleconference Monday afternoon, April 5. The national panelists will speak from 2:00-4:00 p.m. and the local panelists will answer questions from 4:00-5:00 p.m. I think you will find it interesting and informative, and it would be a good opportunity for you to meet your fellow board members. Although it is not an official board meeting, I would like to get some direction from you after the conference as to what areas of solid waste management you would like to hear about in a workshop to be scheduled later. Again, thanks for your willingness to serve and I hope to see you April 5.

Sincerely,

A handwritten signature in cursive script that reads "John".

John Evans  
Public Affairs Director

Enclosure: list of board members  
cc: State Planning Office



Dwight Kessel  
County Executive

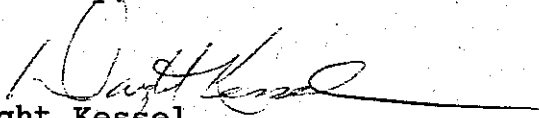
March 10, 1994

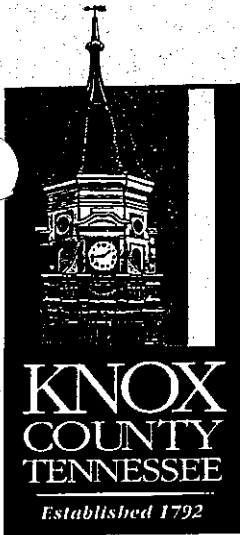
Clyde Hawn  
12001 Richwood Lane  
Knoxville, TN 37922

Dear Mr. Hawn,

I just wanted to write and say thank you for the work you have done as a member of our Regional Solid Waste Board. Your effort has been invaluable in putting together our regional solid plan to submit to the state. Some of our toughest work may still be ahead of us as the plan goes to the Metropolitan Planning Commission, the Knoxville City Council, and to the Knox County Commission for approval. We look forward to working with you on the final revisions of the plan and on other solid waste issues. Once again, thank you for your continued service to the board.

Sincerely,

  
Dwight Kessel  
Knox County Executive



KNOX COUNTY GOVERNMENT

Dwight Kessel  
*County Executive*

March 7, 1994

Larry Clark  
1000 Two Notch Drive  
Knoxville, TN 37920

Dear Mr. Clark,

I just wanted to write and say thank you for the work you have done as a member of our Regional Solid Waste Board. Your effort has been invaluable in putting together our regional solid plan to submit to the state. Some of our toughest work may still be ahead of us as the plan goes to the Metropolitan Planning Commission, the Knoxville City Council, and to the Knox County Commission for approval. We look forward to working with you on the final revisions of the plan and on other solid waste issues. Once again, thank you for your continued service to the board.

Sincerely,

A handwritten signature in black ink that reads "Dwight Kessel". The signature is written in a cursive style with a long, sweeping underline.

Dwight Kessel  
Knox County Executive



THE CITY OF KNOXVILLE, TENNESSEE

VICTOR ASHE  
MAYOR

April 14, 1993

Mr. Dwight Kessel  
Knox County Executive  
400 Main Avenue  
City-County Building  
Suite 651  
Knoxville, TN 37902

Dear Dwight:

I have now made my selection for the person to serve on the new Knox Regional Solid Waste Board.

Like you, I chose based on a persons willingness to serve. Unlike you, I also chose based on knowledge and expertise in the area.

My choice, which was approved by the City Council at their April 13th meeting, is Ms. Donna Creech.

Ms. Creech, who lives in Holston Hills, is currently a Public Information Officer with IT Corporation, which deals with hazardous waste problems. She has served on my Solid Waste Task Force, as well as on the Office of Solid Waste Advisory Committee. She was the co-developer of the 1990 and 1993 Household Hazardous Waste Roundup, as well as one of the organizers of the Blue Thumb Clean Water Project.

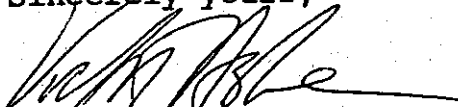
Both Peggy Douglas and I are convinced Ms. Creech will make an excellent addition to your Board. In fact, I would think she might be one of the members that should be given one of the 6 year appointments, given her interest and expertise.

I also want to assure you that the Knoxville's Office of Solid Waste will be as cooperative as possible with your efforts. But clearly, the city will continue it's own planning for dealing with our waste in a legal and environmentally responsible manner.

Mr. Dwight Kessel  
April 14, 1993  
P 2

I am confident that Ms. Creech will be an excellent addition to your Board, and I am pleased to be able to appoint her.

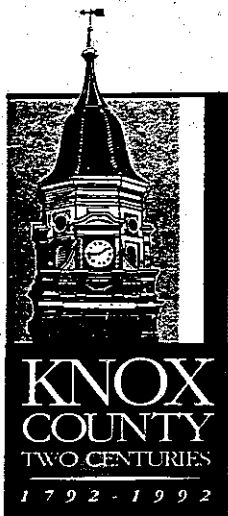
Sincerely yours,



Victor Ashe

VA/ar

Peggy Douglas



KNOX COUNTY GOVERNMENT

Dwight Kessel  
County Executive

March 23, 1993

Mr. Douglas W. Hulme  
816 Roderick Road  
Knoxville, TN 37923

Dear Mr. Hulme:

Thank you for agreeing to serve on the Regional Solid Waste Board. I had hoped this letter would officially notify you of the County Commission confirmation of your position. However, on March 22, the commission delayed any confirmation votes and directed staff to expand the board by two positions to include representatives from the east and south ends of the county. We will have that completed by the April 26 meeting.

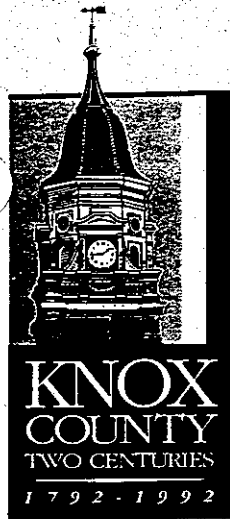
Please note the commissioners expressed agreement with Mr. Kessel's recommendations so I'm confident your confirmation will be only a formality. That being the case, I would like to encourage you to attend a solid waste teleconference Monday afternoon, April 5. The national panelists will speak from 2:00-4:00 p.m. and the local panelists will answer questions from 4:00-5:00 p.m. I think you will find it interesting and informative, and it would be a good opportunity for you to meet your fellow board members. Although it is not an official board meeting, I would like to get some direction from you after the conference as to what areas of solid waste management you would like to hear about in a workshop to be scheduled later. Again, thanks for your willingness to serve and I hope to see you April 5.

Sincerely,

John Evans  
Public Affairs Director

Enclosure: list of board members  
cc: State Planning Office





**KNOX COUNTY GOVERNMENT**

**Dwight Kessel**  
*County Executive*

March 23, 1993

Mrs. Edythe McNabb  
3121 Cunningham Road  
Knoxville, TN 37918

Dear Mrs. McNabb:

Thank you for agreeing to serve on the Regional Solid Waste Board. I had hoped this letter would officially notify you of the County Commission confirmation of your position. However, on March 22, the commission delayed any confirmation votes and directed staff to expand the board by two positions to include representatives from the east and south ends of the county. We will have that completed by the April 26 meeting.

Please note the commissioners expressed agreement with Mr. Kessel's recommendations so I'm confident your confirmation will be only a formality. That being the case, I would like to encourage you to attend a solid waste teleconference Monday afternoon, April 5. The national panelists will speak from 2:00-4:00 p.m. and the local panelists will answer questions from 4:00-5:00 p.m. I think you will find it interesting and informative, and it would be a good opportunity for you to meet your fellow board members. Although it is not an official board meeting, I would like to get some direction from you after the conference as to what areas of solid waste management you would like to hear about in a workshop to be scheduled later. Again, thanks for your willingness to serve and I hope to see you April 5.

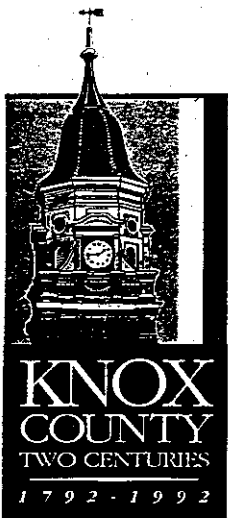
Sincerely,

John Evans  
Public Affairs Director

Enclosure: list of board members  
cc: State Planning Office

10 Main Avenue  
City-County Building  
Suite 651  
Knoxville, TN 37902  
(615) 521-2005





KNOX COUNTY GOVERNMENT

Dwight Kessel  
County Executive

March 23, 1993

Ms. Maxine McManus  
7108 Hickory Hills Drive  
Knoxville, TN 37919

Dear Ms. McManus:

Thank you for agreeing to serve on the Regional Solid Waste Board. I had hoped this letter would officially notify you of the County Commission confirmation of your position. However, on March 22, the commission delayed any confirmation votes and directed staff to expand the board by two positions to include representatives from the east and south ends of the county. We will have that completed by the April 26 meeting.

Please note the commissioners expressed agreement with Mr. Kessel's recommendations so I'm confident your confirmation will be only a formality. That being the case, I would like to encourage you to attend a solid waste teleconference Monday afternoon, April 5. The national panelists will speak from 2:00-4:00 p.m. and the local panelists will answer questions from 4:00-5:00 p.m. I think you will find it interesting and informative, and it would be a good opportunity for you to meet your fellow board members. Although it is not an official board meeting, I would like to get some direction from you after the conference as to what areas of solid waste management you would like to hear about in a workshop to be scheduled later. Again, thanks for your willingness to serve and I hope to see you April 5.

Sincerely,

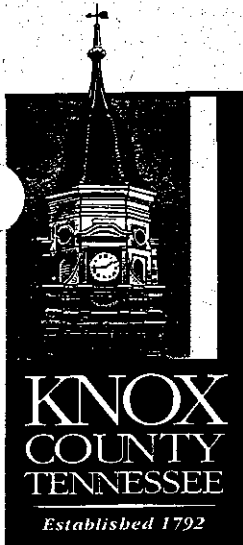
John Evans  
Public Affairs Director

Enclosure: list of board members  
cc: State Planning Office

400 Main Avenue  
City-County Building  
Suite 651  
Knoxville, TN 37902  
(615) 521-2005

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**KNOX COUNTY GOVERNMENT**

**Dwight Kessel**  
*County Executive*

March 10, 1994

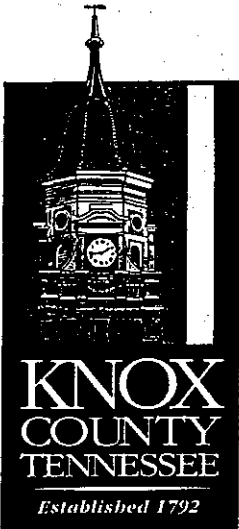
Dr. Bob Kirk  
1604 Riverside Road  
Knoxville, TN 37914

Dear Dr. *B. Kirk*,

I just wanted to write and say thank you for the work you have done as a member of our Regional Solid Waste Board. Your effort has been invaluable in putting together our regional solid plan to submit to the state. Some of our toughest work may still be ahead of us as the plan goes to the Metropolitan Planning Commission, the Knoxville City Council, and to the Knox County Commission for approval. We look forward to working with you on the final revisions of the plan and on other solid waste issues. Once again, thank you for your continued service to the board.

Sincerely,

*Dwight Kessel*  
Dwight Kessel  
Knox County Executive



KNOX COUNTY GOVERNMENT

Dwight Kessel  
County Executive

March 7, 1994

Connie Whitehead  
832 McCubbins Road  
Strawberry Plains, TN 37871

Dear Mrs. Whitehead,

I just wanted to write and say thank you for the work you have done as a member of our Regional Solid Waste Board. Your effort has been invaluable in putting together our regional solid plan to submit to the state. Some of our toughest work may still be ahead of us as the plan goes to the Metropolitan Planning Commission, the Knoxville City Council, and to the Knox County Commission for approval. We look forward to working with you on the final revisions of the plan and on other solid waste issues. Once again, thank you for your continued service to the board.

Sincerely,

Dwight Kessel  
Knox County Executive



## William Mike Padgett

Knox County Clerk

STATE OF TENNESSEE

COUNTY OF KNOX

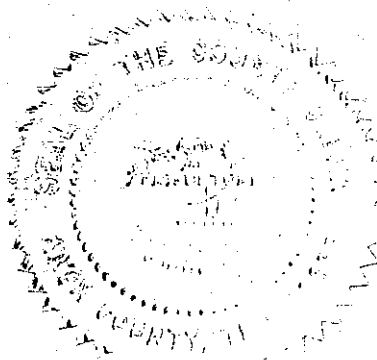
I, William Mike Padgett, Clerk of Knox County, Tennessee, do hereby certify that the attached is a true and correct copy of Resolution R-93-4-109 - Resolution of the Commission of Knox County, Tennessee amending Resolution R-92-11-127, confirming the appointments of the Knox County Executive to the Knox County Municipal Solid Waste Planning Region Board, and establishing terms for the members of the Board.

This resolution was approved by the Knox County Board of Commissioners at their April 26, 1993 regular session - meeting.

The same shall appear of record in Resolution Book 6 in the office of the Knox County Clerk.

Witness my hand at office in Knoxville, Tennessee this the 16th day of February 1994.

Wm. Mike Padgett  
Knox County Clerk



RESOLUTION

A RESOLUTION OF THE  
COMMISSION OF KNOX COUNTY  
TENNESSEE AMENDING RESOLUTION  
R-92-11-127, CONFIRMING THE  
APPOINTMENTS OF THE KNOX  
COUNTY EXECUTIVE TO THE  
KNOX COUNTY MUNICIPAL SOLID  
WASTE PLANNING REGION BOARD,  
AND ESTABLISHING TERMS FOR  
THE MEMBERS OF THE BOARD.

RESOLUTION NO.: R-93-4-109

REQUESTED BY: County Executive

PREPARED BY: Knox County Law Dir.

APPROVED AS TO FORM  
AND CORRECTNESS: *Richard F. Buler*  
Director of Law

APPROVED: 4-26-93  
Date

VETOED: \_\_\_\_\_  
Date

VETO OVERRIDE: \_\_\_\_\_  
Date

MINUTE BOOK \_\_\_\_\_ PAGE \_\_\_\_\_

WHEREAS, the Commission of Knox County, Tennessee (the "Commission") has previously established the Knox County Municipal Solid Waste Region for Knox County, Tennessee; and

WHEREAS, the Commission has previously established the Board to be composed of nine (9) members; and

WHEREAS, the Commission has requested the expansion of the Board to eleven (11) members, and the County Executive has interviewed applicants and submitted their names for confirmation to the Commission; and

WHEREAS, the Intergovernmental, Human Services, and Personnel Committees of the Commission have reviewed the appointments by the County Executive and determined that these persons should be confirmed as members of the Board.

NOW, THEREFORE, BE IT RESOLVED BY THE COMMISSION OF KNOX COUNTY AS FOLLOWS:

Resolution R-92-11-127 is hereby amended by deleting the second, third, and fourth full paragraphs of p. 3 of the resolution and substituting in lieu thereof the following:

BE IT FURTHER RESOLVED, that this Management Board shall be composed of eleven (11) members; and

BE IT FURTHER RESOLVED, that pursuant to TCA §68-211-813(b)(1), ten (10) board members shall be appointed by the County Executive and approved by the Commission, and one (1) board member appointed by the Mayor of the City of Knoxville, Tennessee, and approved by the City Council of Knoxville; and

BE IT FURTHER RESOLVED, that the members of the Board of the Municipal Solid Waste Region shall serve a six (6) year term, provided, however, the initial term of those persons appointed shall be as follows: two (2) members appointed by the County Executive shall have a two (2) year term, three (3) members appointed by the County Executive shall have a four (4) year term, five members appointed by the County Executive shall have a six (6) year term, and the member appointed by the Mayor of Knoxville shall have a two (2) year term; and

BE IT FURTHER RESOLVED, that the initial organizational meeting of the Board, the County Executive shall designate the initial terms to be held by each of the County Executive's appointees; and

BE IT FURTHER RESOLVED, that the following individuals are confirmed as members of the Municipal Solid Waste Planning Region Board: Edith McNabb, Bob Booker, Charles Sanderfur, Tom Haskins, Daphne Murdock, Doug Hulme, Mike Dontje, Maxine McManis, Larry Clark, and Connie Whitehead.

BE IT FURTHER RESOLVED, if any notifications are to be made to effectuate this Resolution, then the County Clerk is hereby requested to forward a copy of this Resolution to the proper authority.

BE IT FURTHER RESOLVED, this Resolution take effect as provided by the Charter of Knox County, Tennessee, the public welfare requiring it.

*[Signature]* Date 4/26/93  
Presiding Officer of the Commission

*[Signature]*  
County Clerk

Approved:

*[Signature]* Date 4/29/93  
County Executive

Vetoed:

\_\_\_\_\_  
County Executive Date \_\_\_\_\_

RESOLUTION

A RESOLUTION OF THE  
COMMISSION OF KNOX COUNTY  
TENNESSEE CONFIRMING THE  
APPOINTMENT OF ONE MEMBER  
TO THE KNOX COUNTY MUNICIPAL  
SOLID WASTE PLANNING REGION BOARD.

RESOLUTION NO.: R-93-8-102

REQUESTED BY: County Executive

PREPARED BY: Knox County Law Dir.

APPROVED AS TO FORM  
AND CORRECTNESS: Richard T. Buler  
Director of Law

APPROVED: 8-23-93 Date

VETOED: \_\_\_\_\_ Date

VETO OVERRIDE: \_\_\_\_\_ Date

MINUTE BOOK \_\_\_\_\_ PAGE \_\_\_\_\_

WHEREAS, Charles Sanderfer has resigned his position as a member of the Knox County Municipal Solid Waste Planning Region Board; and

WHEREAS, the County Executive has appointed to fill the unexpired term of Charles Sanderfer; and

WHEREAS, the Intergovernmental Committee recommends confirming the County Executive's appointment of Dr. Robert Kirk to the Knox County Municipal Solid Waste Planning Region Board.



NOW, THEREFORE, BE IT RESOLVED BY THE COMMISSION OF KNOX COUNTY AS FOLLOWS:

The appointment of Dr. Robert Kirk to the Knox County Municipal Solid Waste Planning Region Board by the County Executive to fill the unexpired term of Charles Sanderfer is hereby confirmed.

BE IT FURTHER RESOLVED, if any notifications are to be made to effectuate this Resolution, then the County Clerk is hereby requested to forward a copy of this resolution to the proper authority.

BE IT FURTHER RESOLVED, that this Resolution take effect as provided by the Charter of Knox County, Tennessee, the public welfare requiring it.

*[Signature]* Date 8-23-93  
Presiding Officer of the Commission

Wm. Mike Padgett by March Smiddy  
County Clerk

Approved:

*[Signature]* Date 8/30/93  
County Executive

Vetoed:

\_\_\_\_\_  
County Executive Date \_\_\_\_\_

RESOLUTION

A RESOLUTION OF THE  
COMMISSION OF KNOX COUNTY  
TENNESSEE CONFIRMING THE  
APPOINTMENT OF ONE MEMBER  
TO THE KNOX COUNTY MUNICIPAL  
SOLID WASTE PLANNING REGION BOARD.

RESOLUTION NO.: R-93-11-101

REQUESTED BY: County Executive

PREPARED BY: Knox County Law Dir.

APPROVED AS TO FORM  
AND CORRECTNESS: *Robert Taylor*  
Director of Law

APPROVED: November 22, 1993  
Date

VETOED: \_\_\_\_\_  
Date

VETO OVERRIDE: \_\_\_\_\_  
Date

MINUTE BOOK \_\_\_\_\_ PAGE \_\_\_\_\_

WHEREAS, Bob Booker has resigned his position as a member of the Knox County Municipal Solid Waste Planning Region Board; and

WHEREAS, the County Executive has appointed Clyde Hawn to fill the unexpired term of Bob Booker; and

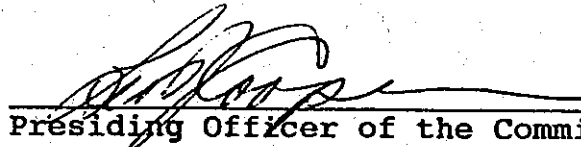
WHEREAS, the Intergovernmental Committee recommends confirming the County Executive's appointment of Clyde Hawn to the Knox County Municipal Solid Waste Planning Region Board.

NOW, THEREFORE, BE IT RESOLVED BY THE COMMISSION OF KNOX COUNTY AS FOLLOWS:

The appointment of Clyde Hawn to the Knox County Municipal Solid Waste Planning Region Board by the County Executive to fill the unexpired term of Bob Booker is hereby confirmed.


BE IT FURTHER RESOLVED, if any notifications are to be made to effectuate this Resolution, then the County Clerk is hereby requested to forward a copy of this resolution to the proper authority.

BE IT FURTHER RESOLVED, that this Resolution take effect as provided by the Charter of Knox County, Tennessee, the public welfare requiring it.

 Date 11/22/93  
Presiding Officer of the Commission

  
County Clerk

Approved:

 Date 11/29/93  
County Executive

Vetoed:

\_\_\_\_\_  
County Executive Date \_\_\_\_\_

KNOX REGIONAL SOLID WASTE BOARD

The Knox Regional Solid Waste Board met in regular session on Monday, May 10, 1993 at 6:00 p.m. in the Main Floor Conference Room of the Knox Central Building, Central Avenue. Those members present were Mr. Mike Dontje, Mr. Bob Booker, Mr. Tom Haskins, Dr. Charles Sandefur, Ms. Donna Creech, Ms. Maxine McManus, Ms. Connie Whitehead, Mr. Doug Hulme, Ms. Edythe McNabb and Mr. Larry Clark. Ms. Daphne Murdock was absent from the meeting. Also present were Mr. John Evans, Knox County Public Affairs Director, Mr. Dwight Kessel, Knox County Executive, and a member of the news media.

Mr. John Evans, presided.

The following proceedings were had and entered of record to-wit:

\* \* \* \* \*

IN RE:      WELCOME:

Mr. Dwight Kessel, Knox County Executive, was present and welcomed all members. He expressed his appreciation to the members for their willingness to serve on the Board.

\* \* \* \* \*

IN RE:      ELECTION OF OFFICERS OF THE KNOX REGIONAL SOLID WASTE BOARD:

CHAIRMAN:

Mr. Tom Haskins was nominated for Chairman.

Mr. Clark moved that all nominations cease and that Mr. Haskins be elected Chairman of the Board for a two year term.

Mr. Booker seconded the motion and upon voice vote the motion carried 10-0-0-1.

\* \* \* \* \*

At this time, Mr. Evans, stepped down from the Chair and Mr. Haskins presided.

\* \* \* \* \*

VICE-CHAIRMAN:

Ms. Daphne Murdock was nominated for Vice-Chairwoman.

Mr. Dontje moved that all nominations cease and that Ms. Murdock be elected as Vice-Chairwoman of the Board for a 4 year term. Ms. Whitehead seconded the motion and upon voice vote the motion carried 10-0-0-1.

\* \* \* \* \*

SECRETARY:

Mr. Dontje was nominated for Secretary.

Ms. McNabb moved that all nominations cease and that Mr. Dontje be elected as Secretary of the Board for a 6 year term. Ms. Whitehead seconded the motion and upon voice vote the motion carried 10-0-0-1.

\* \* \* \* \*

IN RE: TERMS OF BOARD MEMBERS:

At this time, there was discussion concerning terms for the Board members. The following were agreed upon:

TWO YEAR TERMS: Mr. Bob Booker, Mr. Tom Haskins and Ms. Donna Creech.

FOUR YEAR TERMS: Ms. Connie Whitehead, Mr. Doug Hulme Mr. Larry Clark and Ms. Daphne Murdock.

SIX YEAR TERMS: Mr. Mike Dontje, Dr. Charles Sandefur,  
Ms. Maxine McManus and Ms. Edythe McNabb.

\* \* \* \* \*

IN RE: DESIGNATION OF DRAFT COMMITTEE - CHAIRMAN SELECTION:

Consideration of designation of the Draft Committee was  
before the Board.

Ms. Whitehead moved that all members of the Board serve  
on the Draft Committee. Dr. Sandefur seconded the motion and  
upon voice vote the motion carried 10-0-0-1.

Ms. Creech moved to extend an invitation to individuals  
that have expressed an interest to the Board to serve on the  
Advisory Committee. Ms. Whitehead seconded the motion and upon  
voice vote the motion carried 10-0-0-1.

\* \* \* \* \*

IN RE: DISCUSSION OF REGIONAL PLAN:

Discussion of the Regional Plan was before the Board.  
No action was taken.

\* \* \* \* \*

IN RE: ADJOURNMENT:

There being no further business to come before the Knox  
Regional Solid Waste Board, Mr. Haskins declared the meeting  
adjourned.

\* \* \* \* \*

KNOX REGIONAL SOLID WASTE BOARD

---

CHAIRMAN

A-29

**Knox Solid Waste Planning Region  
Mission Statement  
May 25, 1993**

It is the mission of the Knox Regional Solid Waste Board to promote leadership in developing and implementing a plan which addresses the management of solid waste in the Knox County region in accordance with requirements of the Tennessee Solid Waste Management Act of 1991.

The board may address any solid waste issues within its jurisdiction to promote practices which are economically feasible, environmentally sound, and comprehensive in scope.

**Appendix A**  
**Knox Solid Waste Planning Region**  
**Regional Municipal Advisory Committee Members**

Page 1 of 3

Member	Representing	Term of Office
Karen Anderson	Recycling	*
William C. Anderson	Environment	*
Ray T. Bettmeng	Citizen	*
Joe Burchfield	Citizen	*
Michael S. Blizzard	Citizen	*
Gary Bodenstein	Citizen	*
Allen Bradley	Citizen	*
Terry M. Bonine	Citizen	*
Anthony T. Burgess	Citizen	*
William B. Campbell	Citizen	*
Karen Catlett	Citizen	*
Greg Holt Clark, Jr.	Citizen	*
James T. (Tom) Collins, Sr.	Citizen	*
Pamela Wright Cook	Citizen	*
Louis J. Cortina	Citizen	*
John C. Davenport	Citizen	*
Charlotte Dorsey	Citizen	*
Michael J. Evans	Citizen	*
Martin (Marty) E. Funderlic	Citizen	*
Susan Gawarecki	Citizen	*
Stanley F. Gloeckner	Environment	*
Jim Hill	Citizen	*
Grant Henderson	Citizen	*
Debby C. M. Hines	Citizen	*



**Appendix A  
Knox Solid Waste Planning Region  
Regional Municipal Advisory Committee Members**

Page 2 of 3

Member	Representing	Term of Office
Ann Huedepohl	Citizen	*
Charles T. Hyer	Citizen	*
Roxanne Hughes	Citizen	*
Allison Von Gruenigen Keebler	Citizen	*
Joel F. Keebler	Citizen	*
George P Keil	Citizen	*
Dan Kenney	Citizen	*
Jerry L. King	Citizen	*
Loy D. McDonald	Citizen	*
Dolores A. McMillan	Citizen	*
Diann McMurtery	Citizen	*
Mack B. McGee, Jr.	Citizen	*
Sara E. Mokros	Citizen	*
Marcus L. Moore	Citizen	*
Sue Murrian	Citizen	*
Bradley Napier, Jr.	Citizen	*
Michael Navetta	Citizen	*
Michelle Neal	Citizen	*
Elizabeth Neff	Citizen	*
Randall Neuhaus	Business	*
Carol H. Norman	Citizen	*
Charles S. Parmele	Citizen	*
Jeff G. Pfeifer	Citizen	*
Eileen W. Ruppel	Citizen	*

**Appendix A**  
**Knox Solid Waste Planning Region**  
**Regional Municipal Advisory Committee Members**

**Page 3 of 3**

<b>Member</b>	<b>Representing</b>	<b>Term of Office</b>
Todd Shelton	Citizen	*
Doug Shook	Citizen	*
Dennis Stone	Citizen	*
Mary Swanson	Citizen	*
Bo Townsend	Environment	*
Frank R. Van Ryn	Citizen	*
Cliff Vaughan	Citizen	*
James E. Wedekind	Citizen	*
Troy Wedekind	Citizen	*
Catherine A. Wilt	Citizen	*
*As needed.		

**Appendix A**  
**Knox Solid Waste Planning Region**  
**Regional Municipal Advisory Committee**

**Mission Statement**

The Regional Solid Waste Advisory Committee shall support and provide public guidance and input to the Knox County Solid Waste Planning Board such that the Board may provide the regional governments with the rationale and framework to produce an improved solid waste management system to control costs, protect the environment, better use our natural resources, develop a long range solid waste plan, educate the citizens of the region in solid waste matters, reduce and minimize solid waste generation, and develop alternative methods of waste disposal. The Committee shall consider the needs of the total region's citizens, general commercial establishments and industry when providing input and recommendations to the Board.

**Summary of Activities During Plan Development**

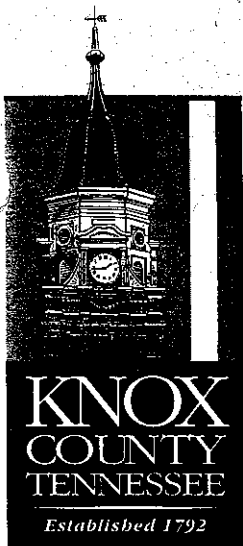
Advisory Committee members attended Board and Committee meetings, workshops and the public hearing to participate in discussions and provide input during plan development. Committee members also assisted Board members by performing research and gathering data for the plan.

**Probable Role in Implementation**

As opportunities are presented, the Advisory Committee shall support the implementation of the approved Solid Waste Plan by communicating with citizens, businesses, and industry about the goals and intent of the plan.

KNOX COUNTY GOVERNMENT

Dwight Kessel  
*County Executive*



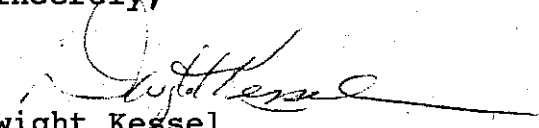
March 11, 1994

Ms. Carol White  
Director  
State Planning Office  
14th Floor, L & C Tower  
401 Church St.  
Nashville, TN 37243-0455

Dear Ms. White:

This letter certifies that Knox County has complied with the financial accounting requirements of the Tennessee Solid Waste Management Act of 1991, T.C.A. 68-211-874(a), As amended.

Sincerely,

  
Dwight Kessel  
Knox County Executive

A-35

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**KNOX COUNTY, TENNESSEE**

**NOTES TO FINANCIAL STATEMENTS (Continued)**

June 30, 1993

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**NOTE 29: OTHER REPORTING CHANGES (Continued)**

In April 1992 the Tennessee General Assembly passed Public Chapter 759, which amended Tennessee Code Annotated Section 68-31-874, requiring that effective July 1, 1992 Counties must account for the financial activities related to the management of solid waste in either a special revenue or an enterprise fund. This amendment included the collection and transportation of solid waste. In previous fiscal years, this function had been accounted for by the County in the General Fund since the charges to the citizens for this service is included in the property tax rate. In order to comply with State Law, the County established in fiscal year 1993 the Solid Waste Fund, a Special Revenue Fund, to account for the management of solid waste.

For purposes of presentation, certain funds which are segregated for accounting purposes were combined for the fiscal year 1993 annual report, representing a change from prior years:

Per Annual Report

Per General Ledger

State and Federal Grants  
Special Revenue Fund

General Grants Fund  
Air Pollution Control Fund  
General School Projects Fund

Public Improvement Capital  
Projects Fund

Farmers' Market Fund  
Sewer Construction Fund  
Hillcrest Construction Fund  
Recreation Construction Fund  
Public Library Construction Fund  
Juvenile Court Construction Fund  
John Tarleton Construction Fund  
Central Distribution Center Construction Fund  
Golf Course Improvement Fund

Municipal Sales Tax Agency

City of Knoxville Fund  
City of Farragut Fund

Joint Ventures Fund

Metropolitan Planning Commission Fund  
Emergency Communications District Fund  
Geographic Information Systems Fund  
Community Action Committee Funds



THE CITY OF KNOXVILLE, TENNESSEE  
VICTOR ASHE  
MAYOR

March 24, 1994

Ms. Carol White, Director  
State Planning Office  
14th Floor, L & C Tower  
401 Church Street  
Nashville, TN 37243-0455

Dear Mr. White:

This letter certifies that the City of Knoxville has complied with the financial accounting requirements of the Tennessee Solid Waste Management Act of 1991, T.C.A. 68-211-874(a), as amended. The name of the enterprise fund established for these requirements is Solid Waste Management.

Sincerely,

Victor Ashe, Mayor  
City of Knoxville

EJU

**Appendix B**  
**Documentation for Adjustments to the Base Year Generation**  
**and Prior Waste Reduction Credit**

January 21, 1994

Mr. James E. Hall, Director  
State Planning Office  
308 John Sevier Building  
Nashville, TN 37243-0001

Dear Mr. Hall:

Subject: Application for Adjustment to Base Year Data

The Knox County Solid Waste Planning Region respectfully requests an adjustment to the base year data, as provided in Tennessee Code Annotated (T.C.A.) 68-211-861(b). A generation rate of 1.16 tons/person/year is proposed as the regional annual per capita waste disposal rate applicable to 1989.

Information required to establish the base year quantity includes the population and quantity of waste disposed of in the referenced year. The 1989 estimated population of Knox County was 332,400, and the University of Tennessee's (UT's) Waste Management Research and Education Institute's report on Managing our Waste: Solid Waste Planning for Tennessee, February 1991 estimated waste disposed at Class I landfills was 336,396 tons. However, the resulting 1989 per capita rate of 1.01 is not considered valid for the following reasons:

- o The waste quantities reported were measured by volume in 1989, not weighed. Volume-based and truck count estimates are extremely error prone when compared to weight-based estimates. Reporting of weight-based quantities began in 1991.


- o Per capita rates of 1.16 tons/person/year did not change between 1991 and 1993, based on actual tonnages for those years. This would indicate low or zero growth in per-capita generation for this period.

- o In addition, if the 1989 per capita rate is accurate, this would represent a 15 percent increase from 1989 to 1991 (or a 7 percent compound annual growth rate for this period). However, while some of the fastest growing counties in the country have documented growth rates in annual per capita generation of up to 7 percent for short time periods, it is the opinion of the Board that a much lower growth rate is appropriate for Knox County. This is supported by data from the Metropolitan Planning Commission indicating approximately 3.2 percent composite annual economic growth for Knox County.



For these reasons, the Knox Region Solid Waste Board requests that the state approve a per capita waste generation rate of 1.16 tons per person per year for 1989. Your prompt attention to this matter will allow our planning committees to complete their planning efforts and complete the solid waste plan for submission to your office.

Sincerely,

A handwritten signature in cursive script that reads "Tom Haskins". To the right of the signature, there is a small, handwritten mark that appears to be "DE".

Tom Haskins, Chair  
Knox Region Solid Waste Board

cc: Dwight Kessel, County Executive  
John Evans, Solid Waste Administrator  
Edward Umbauch, Knoxville Solid Waste Director



STATE OF TENNESSEE  
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

401 Church Street  
Nashville, Tennessee 37243

March 14, 1994

Mr. Tom Haskins, Chair  
Knox County Regional Solid Waste Board  
c/o Southeastern Telcom, Inc.  
6701 Baum Drive, Suite 230  
Knoxville, TN 37919

Dear Mr. Haskins:

We have received your request for a base year adjustment of Knox County's annual per capita disposal rate from 1.01 tons ( the rate calculated from the 1989 U.T. survey) to 1.16 tons ( the figure which was calculated from review of actual records of waste received during 1991 through 1993). It appears that you have a valid concern for adjustment of your base year data. Therefore, we approve Knox County's base year data as adjusted to reflect an annual per capita disposal rate of 1.16 tons.

Should you require any further assistance on this or other matters, please do not hesitate to contact our office.

Sincerely,

A handwritten signature in cursive script that reads "Paul Evan Davis".

Paul Evan Davis  
Director  
Division of Solid Waste Assistance

PED:GHD:dhm

**Appendix C**  
**Public Participation Activities**

## MEETING NOTES

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**CHM HILL**

**MEETING:** Knox County Solid Waste Board Work Session

**MEETING DATE:** February 26, 1994, 8:30 a.m.

**MEETING PLACE:** City-County Building, Small Assembly Building  
401 Main Street, Knoxville, Tennessee

**MEETING ATTENDEES:** See Attached Attendance List

**MINUTES PREPARED BY:** Leslie B. Shannon

The Knox Region Solid Waste Planning Board and members of the Regional Advisory Committee met on February 26, 1994, to resolve comments received at the public hearing on February 24, 1994. The purpose of the meeting was to discuss and resolve the public hearing comments and to receive comments from the board members and citizens on the draft plan.

A draft of the comments and preliminary responses was presented for discussion. Each public hearing comment was reviewed, and consensus was reached on the response. Other comments or items that needed correcting were also discussed.

Members of the Public Education Committee reviewed their chapter, made comments, and adjudicated comments received informally from school board members. Other committee members reviewed their chapters and provided comments by March 3, 1994.

A revised Table 4-1 was reviewed to determine how to meet the waste reduction goals. Recommendations were made concerning how the goals could be met and how the information should be presented.

The meeting adjourned at 12 p.m.

**Knox County Work Session  
February 26, 1994  
Knox County Solid Waste Board  
Attendance List**

Name	Address	Phone
Clyde Hawn	12001 Richwood Lane Farragut, TN 37932	966-5212
John Kortz	1501 Ellistown Road Knoxville, TN 37924	522-2432
Donna Creech	4615 Holston Hills Road Knoxville, TN 37914	524-2800
Ann Huedepohl	7724 Wilmington Drive Knoxville, TN 37919	693-6968
Charles Hyer	12120 East Ashton Court Knoxville, TN 37922	671-4916
Doug Hulme	816 Roderick Road Knoxville, TN 37923	690-3310
Leslie Shannon	599 Oak Ridge Turnpike Oak Ridge, TN 37830	483-9032
Edythe McNabb	3121 Cunningham Drive Knoxville, TN 37918	688-4164
Tom Collins	1608 Tecumseh Drive Knoxville, TN 37912	525-4151
Eileen Ruppel	940 Kevin Road Knoxville, TN 37923	691-6998
Mike Carberry	MPC 400 Main Street Knoxville, TN 37902	521-2500
Larry Clark	1000 Two Notch Drive Knoxville, TN 37920	573-7847

## MEETING NOTES

CH2MHILL

**MEETING:** Knox County Solid Waste Board Work Session

**MEETING DATE:** January 15, 1994, 8:30 a.m.

**MEETING PLACE:** City-County Building, Small Assembly Building  
401 Main Street, Knoxville, Tennessee

**MEETING ATTENDEES:** See Attached Attendance List

**MINUTES PREPARED BY:** Leslie B. Shannon

The Knox County Solid Waste Board convened on January 15, 1994, for a work session on the individual chapters of the 10-Year Solid Waste Plan. The purposes of the meeting were to determine if an integrated plan was being developed, assess the status of the individual chapters, make assignments for completion of the remaining items, and complete the schedules and budgets for the individual chapters.

John Evans presented a brief summary of his concerns that the plan was not yet integrated. The potential for city, county, and private enterprise to work together to create an integrated system has not yet been realized. For example, the composting operation of the city represented an opportunity for joint participation. It might also be possible to develop a transfer station that could be used by both the city and county for transferring materials to a Class IV landfill. Mr. Evans asked the committees to consider ways to integrate the system when developing the plan.

The morning work session was used to evaluate the chapters and prepare a summary of the main points of each chapter. Representatives from CH2M HILL and John Evans worked with each committee to assist them in completing the worksheets. The draft chapters were compared to the state guidelines, item by item, to determine what elements were missing and who would be responsible for completing them. A second worksheet was completed to identify regional needs, regional goals and objectives, system elements, coordination of new elements with existing system, and allocation of responsibilities. This worksheet will be used to prepare the Executive Summary.

Each committee reported on the results of the second worksheet to the rest of the work group, so that everyone would be familiar with the direction of the other committees. A short discussion ensued before lunch concerning the new state guidelines for the 25 percent waste reduction goal, and how these guidelines impacted the quantity of waste Knox County had to reduce. It was also determined that the county needed to request an adjustment to the base year data.

The afternoon session was spent for the most part trying to complete the schedule and budget worksheets. The reduction and recycling committee spent the time defining the

## **MEETING NOTES**

Page 2

January 15, 1994

types of programs it would use for recycling and determining the quantities of materials that could be recycled with each program. Factors that were considered in calculating the recycled quantities included participation rate, capture rate, percentage waste composition, and service area.

Strengths and weaknesses of the existing system were also developed. The strengths were determined from the second worksheet, and Mike Carberry of Metropolitan Planning Commission prepared the weaknesses during the afternoon.

The meeting concluded informally with the various committees departing as their work was completed. John Evans and CH2M HILL drafted the letter to the State Planning Office before adjourning. The meeting adjourned at approximately 4:00 p.m.

**Knox County Work Session  
January 15, 1994  
Knox County Solid Waste Board  
Attendance List**

**Page 1 of 2**

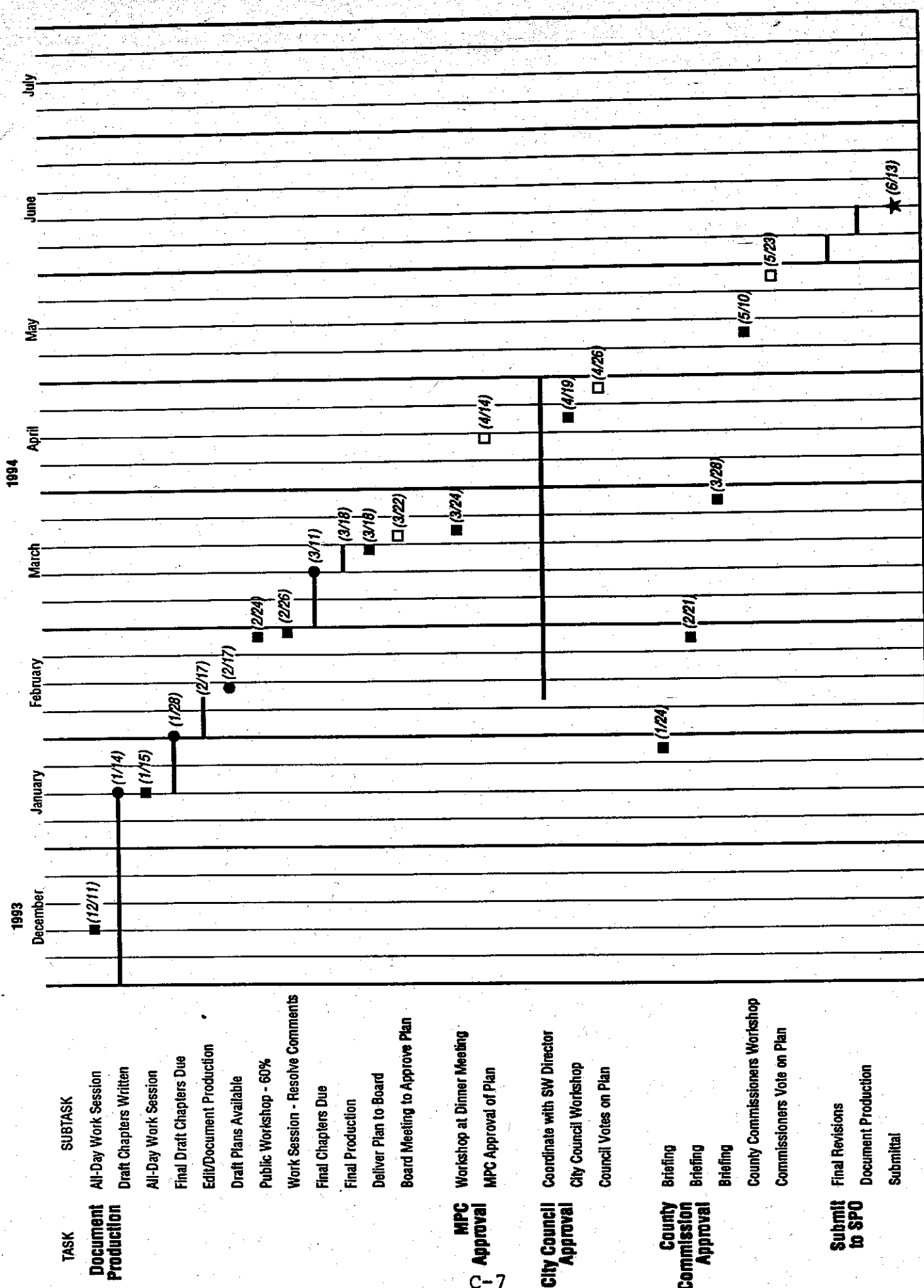
Name	Address	Phone
James T. Collins	1608 Tecumseh Drive Knoxville, TN 37912	525-4151
Chuck Parmele	IT Corporation 9000 Executive Park Drive Suite A110 Knoxville, TN 37923	966-8591
Donna Creech	4615 Holston Hills Road Knoxville, TN 37914	524-2800
Umoja Abdul-Ahad	Project 2000, Inc. 219 Shea Street Knoxville, TN 37921	524-3847
Kelly Tiller	2007 Crest Road Maryville, TN 37804	977-6274
Mark Velicer	P. O. Box 19500 Bellevue, WA 98009	206/453-5000
Connie Whitehead	832 McCubbins Road Strawberry Plains, TN 37871	933-7451
Dan Kenney	1221 Brook Green Road Knoxville, TN 37919	521-4306
Ann Huedepohl	7724 Wilmington Drive Knoxville, TN 37919	693-6968
Mary Swanson	4300 Holston Hills Road Knoxville, TN 37914	546-6933
Douglas W. Hulme	816 Roderick Road Knoxville, TN 37923	690-3310
Mike Carberry	MPC 400 Main Street Knoxville, TN 37982	521-2500
Athena Bradley	BFI, P. O. Box 274 Knoxville, TN 37901	522-8161
Karen Anderson	220 Carrick Street Suite 316A Knoxville, TN 37921	525-9694



**Knox County Work Session  
January 15, 1994  
Knox County Solid Waste Board  
Attendance List**

Page 2 of 2

Name	Address	Phone
Bo Townsend	2915 Island Home Avenue Ijams Nature Center Knoxville, TN 37920	573-7183
Edythe Nelle McNabb	3121 Cunningham Drive Knoxville, TN 37918	688-4164
Charlotte K. Dorsey	5001 Princess Ann Court Knoxville TN 37918	687-7316
Daphne Murdock	1804 Chestnut Grove Road Knoxville, TN 37932	539-2370
Todd Shelton	3111 Foster Lane Knoxville, TN 37920	577-5666
Louis Cortina	225 Mount David Drive Knoxville, TN 37920	573-4725
Mike Dontje	8217 Weibelo Drive Knoxville, TN 37931	693-7222
Pamela Cook	5707 Outer Drive Knoxville, TN 37921	690-1412
John Kortz	1501 Ellistown Road Knoxville, TN 37924	522-2432
Clyde Hawn	12001 Richwood Lane Knoxville, TN 37932	966-5212
Eileen Ruppel	940 Kevin Road Knoxville, TN 37923	691-6998
Ray Bettmeng	8620 Dolph Drive Knoxville, TN 37931	690-2233
John Wood	CH2M HILL	305/426-4008
Tom Haskins	6701 Baum Drive, Suite 230 Knoxville, TN 37919	966-2767
Maxine McManus	7108 Hickory Hills Drive Knoxville, TN 37919	584-8368



**Knox County Solid Waste Plan  
Revised Schedule**

● Deliverable    □ Final Approval Dates    ■ Intermediate Workshops/Work Sessions



## MEETING NOTES

**CHM HILL**

**MEETING:** Knox County Solid Waste Board Work Session

**MEETING DATE:** December 11, 1993, 8:30 a.m.

**MEETING PLACE:** City-County Building, Small Assembly Building  
401 Main Street, Knoxville, Tennessee

**MEETING ATTENDEES:** See Attached Attendance List

**MINUTES PREPARED BY:** Leslie B. Shannon

The Knox County Solid Waste Board convened on December 11, 1993, to review the status of the plan preparation. Major agenda items included agreement on the schedule through plan submittal, agreement on a preliminary system design, and breakout sessions between the committees. The primary authors were also verified through a sign-up sheet (attached) for each chapter.

Each of the committees provided an oral report on the status of its activities through December 11, 1993. Some of the major issues presented included:

- Calculation of population projection
- Number of convenience centers
- Calculation of per capita generation rate
- Waste quantities for waste reduction goal
- New landfills in Knox County and disposal options in other counties
- Target audiences for public information and education

The proposed schedule to complete the plan and submit to the state by June 13 was reviewed. Major assumptions of the schedule as presented were that Metropolitan Planning Commission (MPC), City County, and County Commission approvals of the plan are required, and that these approvals must be consecutive. The schedule includes a public workshop at the 60 percent complete stage, two more work sessions of the Board, and briefings and formal presentations to each of the jurisdictions.

Amendments to the schedule (that were approved by consensus) were that up to four workshops at the 60 percent complete stage may be needed. It was suggested that the additional workshops should be held in the underserved areas. The Town of Farragut should have an opportunity to review the plan, county commission subcommittees need to

## **MEETING NOTES**

Page 2

February 15, 1994

be briefed early in the process, and the city council committees should be investigated and invited as appropriate. The Chamber of Commerce and other business focus groups are other vehicles the Board may use to help achieve community consensus for the plan. Mike Carberry of the MPC indicated that the March 31, 1994, proposed date for the MPC Workshop/Dinner meeting needed to be confirmed. A copy of the schedule as presented at the work session is included as part of these minutes.

The preliminary system design was discussed to achieve a working model the committees can use as they develop the first draft of their chapters. Much discussion centered on the short and long term goal Knox County would set for its waste reduction efforts. The minimum amount required to be reduced from the 1989 base year quantities is approximately 90,000 tons per year, but some members of the Board were interested in setting goals as high as 125,000 tons per year. The state's mechanism for calculating a prior waste reduction credit was reviewed, as several comments were made concerning how much of a credit Knox County wanted to take. Finally the group agreed that, as a preliminary waste reduction goal, the county would set 90,000 tons per year as the short-term (December 31, 1995) goal. The long-term goal was deferred until a cost/benefit analysis could be performed.

The committees met in three 50-minute work sessions after lunch to begin coordinating on issues that overlapped between chapters. Committees discussed information that they needed to exchange or provide to other committees to allow them to develop their chapters. For example, various committees will provide the Education Committee with a list of the issues in their chapters that need to be publicized, and the target audiences that need to be reached. The Public Education committee will use this information to develop a detailed table showing amount, type, and frequency of educational and informational tools to be used.

A draft of a public education brochure was presented and discussed during the breakout sessions. The committees agreed that they would each review the brochure, and provide their comments to the Education Committee. This committee would consolidate and adjudicate the comments, and forward them to CH2M HILL.

Comments on the usefulness of the committee breakout sessions were solicited. The Board and committees suggested that the format was worthwhile for the next work session, but that an agenda for the breakout sessions should be provided, and an agenda for the entire day should be provided ahead of time.

Other miscellaneous items that were discussed during the meeting included:

## **MEETING NOTES**

**Page 3**

**February 15, 1994**

- **CH2M HILL will provide each of the primary authors with a disk containing the chapter headings and subheadings.**
- **After the January 15 work session and after CH2M HILL has compiled the information provided on the 15th, the Committee chairs would have an opportunity to review their chapters and the Board members will be able to review the entire document before the draft plans are made available.**
- **The unassigned chapters will be discussed at the January 15 work session.**
- **A suggestion from the audience concerned the need for a mailing list that included people and organizations other than the Board and Committee members. Additional listings might include the Chamber of Commerce and special interest groups.**

**A set of the handouts provided at the meeting is included with these minutes.**

**Knox County Work Session  
December 11, 1993  
Knox County Solid Waste Board  
Attendance List**

**Page 1 of 3**

Name	Address	Phone
Dan Kenney	1221 Brook Green Road Knoxville, TN 37919	521-8479
Dolores McMillan	1601 Drinnen Road Knoxville, TN 37914	591-1745 W 933-8370 O
Holt Clark	609 Home Avenue Maryville, TN	983-6628
Frank Van Ryn	12000 Richwood Lane Knoxville, TN 37932	675-0266
Bill Campbell	P.O Box 51825 Knoxville, TN 37950	482-0064 O
Dave Keim	Knoxville News-Sentinel	521-1827
Karen Anderson	220 Carrick Street Suite 316A Knoxville, TN 37921	525-9694
David Wasserman	1704 E. Fifth Avenue Knoxville, TN 37917	576-8832
Mike Wheeler	1910 Lakelet Ct. Knoxville, TN 37922	694-0668
Eileen Ruppel	940 Kevin Road Knoxville, TN 37923	691-6991
Chuck Thresher	4364 McCloud Road Knoxville, TN 37938	922-5704
Todd Shelton	3111 Foster Lane Knoxville, TN 37920	577-5666
Mike Carberry	MPC 400 Main St. Knoxville, TN 37982	521-2500
Bo Townsend	2915 Island Home Avenue Ijams Nature Center Knoxville, TN 37920	573-7183

**Knox County Work Session  
December 11, 1993  
Knox County Solid Waste Board  
Attendance List**

**Page 2 of 3**

Name	Address	Phone
Ann Huedepohl	7724 Wilmington Drive Knoxville, TN 37919	693-6968
Roxanne Hughes	712 Westborough Road Knoxville, TN 37909	694-7694
Robert (Bob) M. Hill	11504 Mountain View Road Knoxville, TN	966-9435
Stan Gloeckner	P.O. Box 50264 1740 Piney Grove Church Road Knoxville, TN	690-0892
Mary Swanson	4300 Holston Hills Road Knoxville, TN 37914	546-6933
Pam Cook	5705 Outer Drive Knoxville, TN 37921	690-1412
Michelle Neal	1013 1/2 Phillips Avenue Knoxville, TN 37920	579-0046 694-9050
James T. (Tom) Collins	1608 Tecumseh Drive Knoxville, TN 37912	525-4151
Tom Haskins	6701 Baum Drive, Suite 230 Knoxville, TN 37919	966-2767
Louis Cortina	225 Mount David Drive Knoxville, TN 37920	573-4725
Ray Bettmeng	8620 Dolph Drive Knoxville, TN 37931	690-2233
Connie Whitehead	832 McCubbins Road Strawberry Plains, TN 37871	933-7451
Doug Hulme	816 Roderick Road Knoxville, TN 37923	690-3310
Maxine McManus	7108 Hickory Hills Drive Knoxville, TN 37919	584-8368



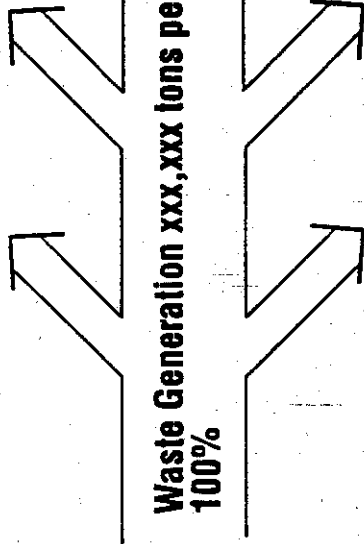
**Knox County Work Session  
December 11, 1993  
Knox County Solid Waste Board  
Attendance List**

**Page 3 of 3**

<b>Name</b>	<b>Address</b>	<b>Phone</b>
Clyde L. Hawn	12001 Richwood Lane Knoxville, TN 37932	966-5212
Larry Clark	1000 Two Notch Drive Knoxville, TN 37920	573-7847
Daphne Murdock	1804 Chestnut Grove Road Knoxville, TN 37932	539-2370
Donna Creech	4615 Holston Hills Road Knoxville, TN 37914	524-2800

**Source Reduction:**  
tpy

**Diversion:**  
Construction and Demolition - 30,000 tpy



**Waste Generation xxx,xxx tons per year**  
**100%**

**xxx,xxx tpy Landfilled**

**xx%**

**Composting:**

Yard Waste - 30,000 tpy

**Recycling:**

- Al Cans -
- Ferrous Materials -
- Other Metals -
- Glass -
- Plastic -
- Paper -
- Pallets -

Total - 30,000 tons per year

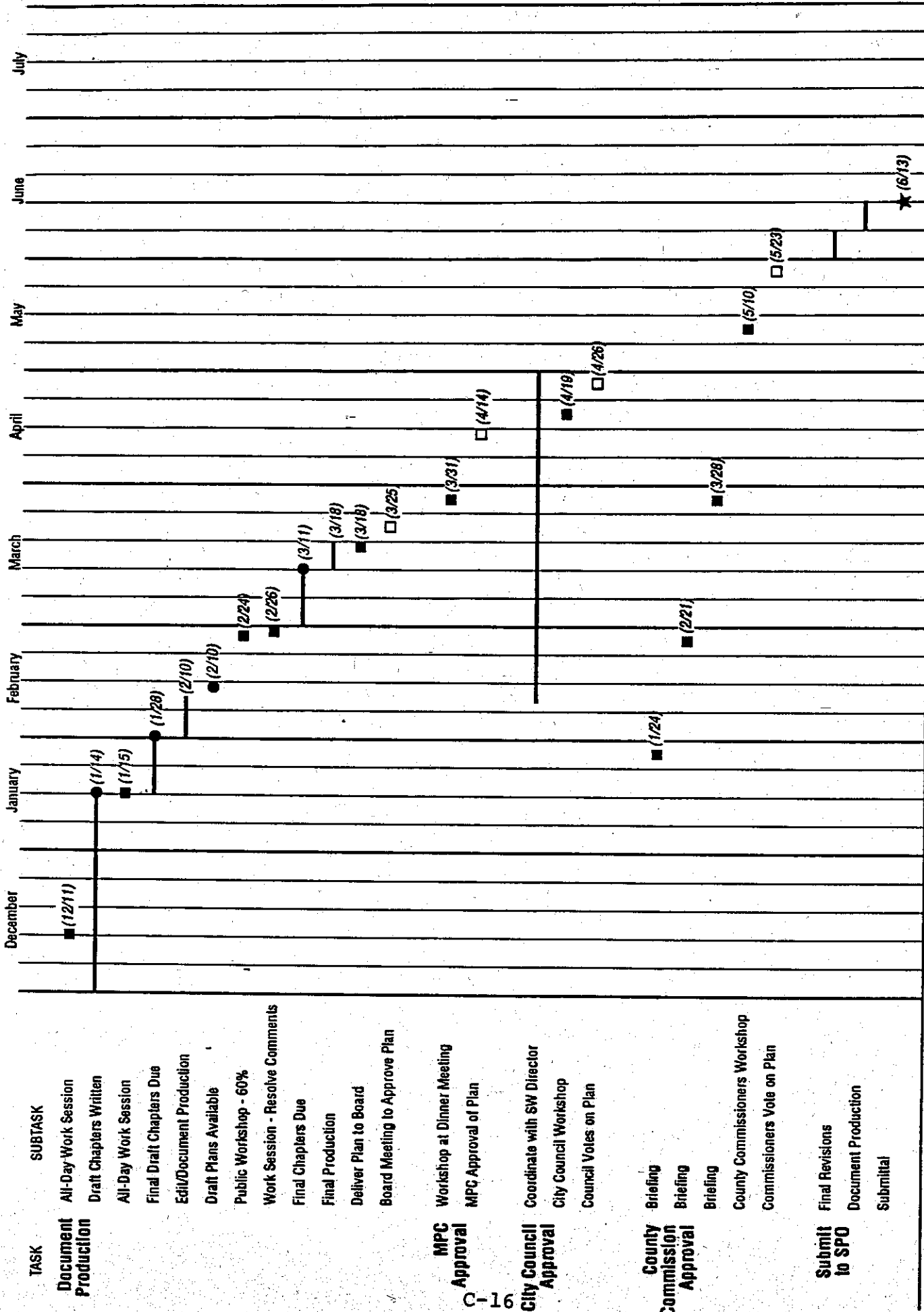
DRAFT

Figure 3.1  
**Preliminary System Configuration**  
KNOX COUNTY SOLID WASTE PLANNING REGION

**NOTE:**  
This draft figure resulted from the December 11, 1993 Work Session.

1993

1994



● Deliverable      ◻ Final Approval Dates      ■ Intermediate Workshops/Work Sessions

Knox County Solid Waste Plan  
Schedule

**Knox County 10-Year Solid Waste Plan  
Chapter Responsibilities**

<b>Part/Chapter</b>	<b>Principal Author(s)</b>
<b>Executive Summary</b>	
<b>I. Description of the Municipal Solid Waste Region</b>	<b>D. Hulme, M. McManus, E. McNabb</b>
<b>II. Analysis of the Current Solid Waste Management System for the Region</b>	<b>D. Hulme, M. McManus, E. McNabb</b>
<b>III. Growth Trends, Waste Projections, and Preliminary System Structure</b>	<b>D. Hulme, M. McManus, E. McNabb</b>
<b>IV. Waste Reduction</b>	<b>D. Creech, A. Huedeppl, C. Whitehead, D. Kenney</b>
<b>V. Waste Collection and Transportation</b>	<b>D. Murdock</b>
<b>VI. Recycling</b>	<b>D. Creech, A. Huedeppl, C. Whitehead, D. Kenney</b>
<b>VII. Composting, Solid Waste Processing, Waste-to-Energy and Incineration Capacity</b>	<b>D. Creech, A. Huedeppl, C. Whitehead, D. Kenney</b>
<b>VIII. Disposal Capacity</b>	
<b>IX. Public Information and Education</b>	<b>E. McNabb, L. Clark</b>
<b>X. Problem Wastes</b>	<b>D. Murdock</b>
<b>XI. Implementation: Schedule, Staffing, and Funding</b>	
<b>XII. Allocation of Implementation Responsibilities: Plan Adoption and Submission</b>	
<b>XIII. Flow Control and Permit Application Review</b>	
<b>Appendix A. Legal Documentation and Organization of the Region</b>	
<b>Appendix B. Documentation for Adjustments to the Base Year Generation</b>	
<b>Appendix C. Public Participation Activities</b>	
<b>Appendix D. Exports and Imports</b>	
<b>Appendix E. Review by Appropriate Municipal or Regional Planning Commission</b>	



## **MEETING NOTES**

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**CHM HILL**

**MEETING:** Knox County Solid Waste Board Public Hearing

**MEETING DATE:** February 24, 1994, 6 p.m.

**MEETING PLACE:** City-County Building, Small Assembly Room  
401 Main Street, Knoxville, Tennessee

**MEETING ATTENDEES:** See Attached Attendance List

**MINUTES PREPARED BY:** Leslie B. Shannon

A public hearing to receive comments on the draft Municipal Solid Waste Regional Plan of the Knox Solid Waste Planning Region was held on February 24, 1994, in the Small Assembly Room of the City-County Building. The meeting was called to order by Mr. Tom Haskins, Chair of the Knox Solid Waste Planning Region Board. Mr. Haskins explained that the Board consists of citizen volunteers, and that the plan had been prepared by Board members and other citizens.

Mr. Haskins noted that the purpose of the meeting was to solicit comments from the general public on the draft plan. The ground rules for receiving the comments were that each speaker would have an initial 5 minutes to make a statement. After all citizens had an opportunity to speak, anyone wishing to add further comments would be given the opportunity. The February 26, 1994, work session of the Board was also announced as a public meeting to which all interested parties were invited to attend.

Mr. John Evans, Solid Waste Administrator for the Knox County Solid Waste Department, provided a brief overview of the major elements of the plan. He discussed the regional needs, waste reduction strategies, and long-term waste reduction goals. Major points of the recycling, collection and transportation, and disposal components of the plan were also summarized. Mr. Evans mentioned that the county was considering instituting a "pay-as-you-throw" fee structure for county residents. Plans for household hazardous waste and other problem wastes were presented.

Mr. Haskins then received comments from the audience on the draft plan. A summary of the comments and the response from the Board is provided in Attachment A.

After Mr. Haskins provided ample opportunity for any citizen in the audience to provide input, the meeting adjourned at 7:15 p.m.

**Attachment A**  
**Comments Submitted at Public Hearing**  
**Knox Region Solid Waste Planning Region**  
**February 24, 1994**

Section	Page	Summary of Comment or Question	Response
4.3.3.4	4-10	Disposal Surcharges-Why is a surcharge at the landfill being proposed to fund the Solid Waste Department? Why not fund through property taxes?	Purpose of the surcharge is to provide an economic disincentive. The surcharge is being considered, but politically and legally it may not happen.
Chapter 4, Executive Summary	ES-10	Comment from a west Knoxville restaurant owner concerning problems with recycling glass. Mentioned time it takes to separate glass by color and contamination problems. Concerned that some glass had to be landfilled due to contamination.	Comment noted. Board is aware of contamination problems and included discussion of the problem in Section 4.3.2.1.
Chapter 4		Yard waste diversion is a big ticket item. The Board needs to revisit its structure of reduction, and may need to increase the recycling figures.	Commercial sector recycling, especially paper and cardboard will be emphasized.
Chapter 4		Need to find a way to encourage city participation in waste reduction beyond its yard waste contribution.	Close coordination will be affected between the county, Knoxville, and Farragut. Text will be added to Section 3.0, p. ES-2.
4.3.3.4	4-9	General support for plan. Two important issues are: 1. Economic disincentives are important to support waste reduction. 2. Economic disincentives are put in place parallel with public education.	Comment noted.
4.3.3.4 and 6.3.8.3	4-9 6-21	Supports "pay as you throw" concept, but concerned over resultant increased illegal dumping. How will the concept be implemented? Will it be instituted in concert with the city? What is the pay structure?	The Board proposes to impose greater fines on the illegal dumpers and to provide for greater enforcement. The Board looked at other models and found that initial increase in illegal dumping associated with "pay as you throw" tapered off. Recycling options also need to be in place before per-bag fee imposed.
Chapter 6		Shouldn't the county encourage commercial business and industrial recycling before residential?	The Board has not decided on a fee structure, and proposes to do a study to determine fee structure. The Board has made recommendations to the city and hopes to have a common fee structure with the city.
Chapter 6		Comment concerning difficulty in recycling blueprints, colored paper, etc.	Yes. The Board intends to go to recycling mandates if the goal is not reached voluntarily.
Chapter 6		Under the plan, will it still be possible to throw out recyclables with trash?	Comment noted. Blueprints have inks that are difficult to remove. Board also acknowledged challenge in getting people to separate waste.
Chapter 6		What are the city/county plans for a yard waste composting facility? Concerned about problems that developed before.	Yes. The plan proposes a study to determine variable rate fees that ultimately may penalize those who do not recycle. See also Section 6.3.8.3.
Chapter 10		What is the mechanism for taking HHW at convenience centers? What are the plans for HHW?	The plan does not address issues of standard. The city is currently negotiating a contract. Alternative county collection mechanisms were discussed. The Board's intent is to provide a facility or mechanism for all citizens to use to keep these materials out of the landfill. Convenience centers will continue to collect automotive products, paints, and paint thinners.

**Municipal Solid Waste Regional Plan Public Hearing  
February 24, 1994  
Knox Solid Waste Planning Region Board  
Attendance List**

**Page 1 of 2**

<b>Name</b>	<b>Address</b>	<b>Phone</b>
John J. Wood	599 Oak Ridge Turnpike Oak Ridge, TN 37830	483-9032
Leslie Shannon	599 Oak Ridge Turnpike Oak Ridge, TN 37830	483-9032
John Kortz	1501 Ellistown Road Knoxville, TN 37924	522-2432
Ann Huedepohl	7724 Wilmington Drive Knoxville, TN 37919	693-6968
Dave Kelley	1009 Churchwell Avenue Knoxville, TN 37917	525-9665
Don Aucoin	Chambers Development Company 3300 Highlands Parkway Suite 130 Smyrna, GA 30082	(404) 438-7770
Dan Kenney	1221 Brookgreen Knoxville, TN 37919	584-4306
Bo Townsend	2915 Island Home Avenue Knoxville, TN 37920	573-7183
Erin Goewey	2323 Wilson Road Apartment L23 Knoxville, TN 37912	673-8727
Mark Chernisky	2323 Wilson Road Apartment L23 Knoxville, TN 37912	673-8727
Felicia McCoy	1321 Iroquois Street Knoxville, TN 37915	523-7730
Charlotte Dorsey	5001 Princess Ann Court Knoxville, TN 37918	687-7316
Nancy Stewart	6611 Ridge Rock Knoxville, TN 37909	584-3834



**Municipal Solid Waste Regional Plan Public Hearing  
February 24, 1994  
Knox Solid Waste Planning Region Board  
Attendance List**

**Page 2 of 2**

<b>Name</b>	<b>Address</b>	<b>Phone</b>
Lynn Venafro	1141 Farrington Drive Knoxville, TN 37923	694-9252
Kerstin Nilson	8624 Dalemere Drive Knoxville, TN 37923	694-4127
Troy Goodale	821 Kevin Road Knoxville, TN 37923	690-5474
Bob Yost	1925 Branville Road Knoxville, TN	525-6008
Athena Bradley	4606 Meadows Lane Knoxville, TN 37901	522-8161
Stanley F. Gloechner	1740 Piney Grove Church Road Knoxville, TN 37909	690-0892
Charles Hyer	12120 East Ashton Court Knoxville, TN 37922	671-4916
James T. Collins	1608 Tecumseh Drive Knoxville, TN 37912	525-4151
Tom Haskins	6701 Baum Drive, Suite 230 Knoxville, TN 37919	966-2767
Donna Creech	4615 Holston Hills Road Knoxville, TN 37914	524-2800
David N. Levy	7318 Wheatfield Place Knoxville, TN	
Judy H. Levy	7318 Wheatfield Place Knoxville, TN	
Rick Held	4812 Sims Road Knoxville, TN	573-5005

## Subcommittee Activities

The five subcommittees (further described in Chapter 1) met on numerous occasions (Table C-1) to gather and develop the information needed for their respective chapters. Subcommittees typically met on weekday evenings for work sessions from October 1993 to February 1994 at which assignments were made and reports on investigations were provided. No minutes of these meetings were kept.

A summary of the meeting dates for each of the committees is provided below.

<b>Committee</b>	<b>Meeting Dates</b>
Recycling/Reduction	9/20, 10/4, 10/18, 11/1, 12/13, 1/15, 1/25
Disposal	9/13, 9/20, 9/27, 10/25, 11/8, 12/20
Collection and Transportation	10/1, 11/1, 11/16, 12/6, 1/3, 1/10, 1/18
Public Education	9/3, 9/30, 10/14, 11/29, 12/21, 1/10, 1/25
Finance	10/20, 11/11, 1/6

## Informational and Educational Activities

### Brochure Development

The Knox County Department of Solid Waste, in order to help meet the 25 percent waste reduction goal set by the state, realized the need for increased public awareness and information regarding solid waste. It is clear that the public needs to understand the rising costs of landfill design and operation as well as the locations of various city and county drop-off sites where recyclables may be separated. To meet this public need, the County Solid Waste Department funded and helped produce a brochure to be distributed to citizens of Knox County. This brochure includes the information previously mentioned as well as such things as types of garbage that may be recycled and types of problem wastes. Some 50,000 brochures have been printed and distributed throughout the county to 10,000 county employees, the public libraries, the Home Builders Association, and The University of Tennessee. The Solid Waste Department continues to send the brochures out and expects to have all distributed by 1995.

## **Speaking Engagements**

The Solid Waste Administrator continues to speak to civic groups about solid waste issues, in particular the Tennessee Solid Waste Management Act. Audiences include:

- West Knox Republican Club (March 8, 1993)
- Junior League Environmental Workshop (April 23, 1993)
- West Knox Kiwanis (June 1, 1993)
- Armina Community Club (June 21, 1993)
- Regional Solid Waste Workshop (July 10, 1993)
- The Melton Hill Club (October 28, 1993)
- Old Mechanicsville Neighborhood (November 18, 1993)
- Karns Community Club (November 22, 1993)
- Farragut Rotary Club (January 26, 1994)
- South Knoxville Republicans Club (February 10, 1994)

## **Media Coverage**

The Solid Waste Department continues to seek and obtain media coverage concerning solid waste issues including:

- Two 90-minute call-in programs on WIVK-AM Newstalk
- A news conference, 2 newspaper stories, and a 3-part series on October 8, 1993, concerning Subtitle D landfill regulations
- Numerous "Christmas Treecycling" stories and features

A complete list of all news media in the Knox Region follows.

# MEDIA LIST

January 10, 1994

## NEWSPAPERS

**East Knox News**  
7521 C Asheville Highway  
Knoxville, TN 37924

(will be getting P.O. in 2 wks)

**Publisher & Editor:**  
**Information Secretary:**  
**Advertising Director:**  
**Deadline:**  
**FAX**  
**Phone**

**Dale & Susan Burress**  
**Rebecca Sherrod**  
**Dale Burress**  
**1 week before publication on Monday**  
**933-6371**  
**933-7257**

**Knoxville News-Sentinel**  
P. O. Box 59038  
Knoxville, TN 37950-9038

**General Manager:**  
**Editor:**  
**Editorial Page:**  
**Neighborhood:**  
**Deadline:**

**Bruce Hartman**  
**Harry Moskos**  
**Hoyt Canady**  
**Georgiana Vines**  
**Announcements: couple of days; RESERVE**  
**RIGHT TO DECIDE WHEN TO PUBLISH**

**FAX (Metro Desk)**  
**Phone**  
**FAX (Advertising)**  
**FAX (Marketing)**  
**FAX (Sports)**  
**FAX (Entertainment)**  
**FAX (Business)**  
**FAX (Community News)**  
**FAX (Nashville)--call first**

**521-8124**  
**523-3131**  
**525-5331**  
**523-2054**  
**521-8127**  
**673-3501**  
**673-3505**  
**673-3501**  
**242-7782**

**Maryville-Alcoa Daily Times**

P.O. Box 9740

Maryville, TN 37802-9740

General Manager:	Larry Walcutt
Editor:	Dean Stone
Deadline:	11:00 p.m. before next morning
FAX	981-1175
Phone	981-1100

**Metro Pulse**

602 S. Gay Street, M Level

Knoxville, TN 37902

Publisher:	Rand Pearson
Editor:	Barry Henderson
Deadline:	Friday before printing the following Friday
FAX	522-2955
Phone	522-5399

**Mountain Press**

P.O. Box 4810

111 Commerce

Sevierville, TN 37864

Editor:	Anna Garber
Legal:	Angie King
Deadline:	3 days
FAX	453-4913
Phone	428-0746

**Oak Ridger**

P.O. Box 3446

Oak Ridge, TN 37831

Editor:	Jim Campbell
City Editor:	Donna Smith
News & PSAs:	Donna Smith
Deadline:	11:30 a.m.
FAX	482-7834
Phone	482-1021

**People's Press**  
6326 Papermill Drive  
Suite A  
Knoxville, TN 37919

Editor & Gen. Mgr.: **Phil Hamby**  
FAX **558-3410**  
Phone **584-9606**

**Press Enterprise**  
P. O. Box 22879  
Knoxville, TN 37933-0879

Publisher: **Dean Ridings**  
Editor: **Michael Holtz**  
Deadline: **Thursday 12 Noon the week prior to publication**  
FAX **675-1675**  
Phone **675-6397**

**Shopper Publications, Inc.**  
P.O. Box 70335  
Knoxville, TN 37918-7000

Operations Manager: **Grace Kilgore**  
Editor: **Sandra Clark**  
Deadline: **Thursday 5:00 p.m.**  
FAX **922-5275**  
Phone **922-4136**

**South Community Times**  
3801 Sevier Avenue  
Knoxville, TN 37920

Owner/Editor: **Kathy & Sam Hance**  
Deadline: **Friday prior to publishing date, which is the 1st & 3rd Wed. of month**  
FAX **579-6005**  
Phone **579-6107**

**Context**

107 Communications &  
University Extension Bldg  
University of Tennessee  
Knoxville, TN 37996-0315

**Publisher:** Linda Weaver  
**Deadline:** 10 days prior to publication--published every 2  
weeks when classes in session  
**FAX** 974-6435  
**Phone** 974-2225

**The Daily Beacon**

Room 5, Communications &  
University Extension Bldg  
University of Tennessee  
Knoxville, TN 37996-0315

**Deadline:** 5 working days before date wanted published; typed, double spaced,  
very specific  
**FAX** 974-6435 (specify for Beacon, and call before sending)  
**Phone** 974-3226

**The Enlightener**

P.O. Box 6413  
Knoxville, TN 37914

**Publishers:** Larry Davis, Cynthia Hodge  
**Managing Editor:** Elizabeth Smith  
**FAX--call first** 637-4191  
**Phone** 637-4191

**The Post**

2509 W. Emory Road  
Powell, TN 37849

**Editor & Gen. Mgr.:** Dennis Pratt  
**Deadline:** Thursday  
**FAX** 947-2366  
**Phone** 938-7678

**Tri-County News**  
P. O. Box 130  
Seymour, TN 37865

<b>Editor:</b>	<b>Gladys Hamilton</b>
<b>Deadline:</b>	<b>Wednesday evening before publication on Monday</b>
<b>FAX</b>	<b>577-9896</b>
<b>Phone</b>	<b>577-5935</b>

**Tennessee Green**  
P.O. Box 1974  
Knoxville, TN 37901

<b>Editor:</b>	<b>Bob Grimac</b>
<b>Deadline:</b>	
<b>FAX</b>	<b>None</b>
<b>Phone</b>	<b>546-5643</b>



## TELEVISION

### **Scripps Howard Cable TV Company**

614 N. Central Avenue  
Knoxville, TN 37917

General Manager:	Barbara Lewis
Director:	Angie Hopkins
Deadline:	Calendar info several weeks in advance
FAX	637-8805
Phone	971-1544

### **WATE-TV (Channel 6)**

P. O. Box 2349  
Knoxville, TN 37901

General Manager:	Jim Mikels
Promotion & PSAs:	Jan Quillen
News:	Bob Morford
Assignment Editor:	Martha Dooley
Deadline:	PSA's & community calendar--3 weeks in advance
FAX	525-4091
FAX (newsroom)	523-3561
Phone	637-9666
Phone (newsroom)	637-6397

### **WBIR TV (Channel 10)**

1513 Hutchinson Avenue  
Knoxville, TN 37917

General Manager:	Jim Hart
News:	Jim Swinehart
PSAs:	Julie Bates
Assignment Editor:	Mike Baxter
Deadline:	PSA's & community calendar--3 weeks in advance
FAX (newsroom)	522-7341
Phone	637-1010
Phone (newsroom)	637-1272

**WKCH TV (Channel 43)**  
109 East Churchwell Avenue  
Knoxville, TN 37917

General Manager:	John Friend
Operations Mgr & PSAs and News:	Phil Rainey
Deadline:	PSA's & calendar info--3 weeks in advance
FAX	637-6957
Phone	971-4343

**WKXT (Channel 8)**  
6516 Papermill Drive  
Knoxville, TN 37919

General Manager:	Lewis Cosby
General Sales Manager:	Earl Taylor
News:	Dick Hall
PSAs:	David Williams
FAX	584-1978
Phone	687-8522
Phone	450-8888

**WSJK TV (Channel 2)**  
**WKOP TV (15)**  
1611 E. Magnolia Avenue  
Knoxville, TN 37917

General Manager:	Al Curtis
Promotions Manager:	Evelyn Clark
Program Manager:	Hop Edwards
PSAs:	Charles Frazier
Deadline:	PSA/calendar--10 days in advance
FAX	595-0300
Phone	595-0220

## **RADIO**

### **WEZK (97.5)**

P. O. Box 27100  
Knoxville, TN 37927

General Manager:	Craig Jacovus
News:	Tracey Sabo
FAX	637-7801
Phone	525-7380

### **WIMZ (Rock 104)**

901 E. Summit Hill Drive  
Suite 200  
Knoxville, TN 37915

General Manager:	Craig Jacovus
Business Manager:	Nancy Barber
News:	Colvin Idol
FAX	637-3350
Phone	525-6000

### **WITA AM 1490**

7212 Kingston Pike  
Knoxville, TN 37919

General Manager:	Gail Scott
Program Director:	Dennis Gann
FAX	None
Phone	588-2974

### **WIVK**

P. O. Box 11167  
Knoxville, TN 37939-0207

General Manager:	Bobby Denton
News:	Les Acree
FAX (WIVK AM)	558-4217
FAX (WIVK FM)	584-3725
Phone	588-6511

**WKGN AM Stereo)**  
P.O. Box 10005  
Knoxville, TN 37939

General Manager:	Robert L. Stewart
FAX	546-7965
Phone	546-7900

**WMYU (U-102)**  
P.O. Box 50730  
Knoxville, TN 37950-0730

General Manager:	Jim Ridings
News:	Roger Hawkins
PSAs:	Daphne Galyon
FAX	656-8329
FAX (newsroom)	693-8493
Phone	693-1020
Phone (newsroom)	691-8080

**WNOX**

108-A W. Inskip Road  
Knoxville, TN 37912

General Manager:	Chuck Ketron
PSAs:	David Shirk
FAX	688-0375
Phone	281-9999

**WOKI (I-100)**  
**WWZZ**  
1900 N. Winston Road  
Suite 600  
Knoxville, TN 37919

General Manager:	Bill Hayes
News Director:	Jerry Howell
FAX	531-0101
Phone	531-2000

**WQBB AM (Big Band)/Q104.5 FM**

1114 W. Clinch Avenue  
Suite 1A  
Knoxville, TN 37916

General Manager:	Jim Staley
Promotions Director:	Jim Richards
PSAs:	Eddy Roy
FAX	546-1045
Phone	546-1040

**WRJZ (Joy 62)**  
3214 Tazewell Pike  
Suite 101  
Knoxville, TN 37918

General Manager:	John Hanna
Program Director:	Larry Richmond
FAX	687-1195
Phone	656-6262

**WTNN 670 Stereo**  
13206 Buttermilk Road  
Knoxville, TN 37932

General Manager:	Ken Crosthwait
News:	Ken Crosthwait
PSAs:	Barry Shelton
FAX	531-2297 (call first)
Phone	531-2297

**WUOT FM (Classical)**  
232 Communications Building  
University of Tennessee  
Knoxville, TN 37996-0322

Executive Director:	Lauren Murphy
Operations Director:	David Williamson
PSAs:	Jacqueline Jones
News Director:	Kim Smith
FAX	974-3941
Phone	974-5375
Phone (Public Affairs)	974-5054

**WUTK AM**

Tim England  
(Bill McGinnis)

FAX

974-2814

**WUTK FM (Rock 90)**

P103 Andy Holt Tower  
Knoxville, TN 37996-0115

General Manager:

PSAs:

FAX

Phone

Dr. Sam Swan

Dawn Chance

974-2814

974-6897

**WXST (FM 105)**

620 Campbell Station Road  
Suite 2  
Knoxville, TN 37922

General Manager:

News:

PSAs:

FAX

Phone

Mike Beverly

Brian McKinley

Brian McKinleyn

675-4859

675-4105

**Appendix D**  
**Exports and Imports**

DISPOSAL SERVICE AGREEMENT

THIS AGREEMENT made this 22 day of Oct., 1991, by and between Knox County, Tennessee, a public corporation and political subdivision of the State of Tennessee, hereinafter referred to as "County", and Waste Management, Inc. of Tennessee, a Tennessee corporation, hereinafter referred to as "the Company".

WITNESSETH:

WHEREAS, the County desires to ensure the continued availability of a sanitary landfill site for the economically and environmentally sound disposition of waste material generated by the residential sector of the County; and

WHEREAS, the governing authority of the County has the power to enter into service contracts for the disposal of such waste material; and

WHEREAS, the Company operates a sanitary landfill site which is capable of servicing the foregoing objectives of the County.

NOW, THEREFORE, FOR AND IN CONSIDERATION of the respective covenants herein contained, the parties have agreed as follows:

I.

DEFINITIONS

1.01 The Sanitary Landfill - Chestnut Ridge Landfill and Recycling Center at Fleenor Mill Road, Heiskel, Tennessee which is operated by the Company.



1.02 County Waste Material - any and all "solid waste" (as defined by the Tennessee Solid Waste Disposal Act, Tenn. Code Ann. § 68-30-103) which definition, by way of example, but not by way of limitation, shall include refuse, garbage, trash, bulky waste, and construction and remodeling debris generated by and collected by the County for sanitary landfill disposal, provided said waste material is collected by and delivered to the Sanitary Landfill by County waste collection vehicles or any waste collection service operating under contract with the County to provide such waste collection services. Dewatered municipal sludge and hazardous waste (as defined by applicable federal, state and local laws, regulations and ordinances) are specifically excluded in the definition of County Waste Material.

1.03 Permits - as used herein, shall include any and all final and nonappealable governmental or other permits, consents, approvals, certifications, licenses, authorizations, utility connections, annexation, zoning, special use, certificate of designation or other land use designation as may be necessary to all Company to operate the Sanitary Landfill.

## II.

### SCOPE OF SERVICE

2.01 Subject to the terms and conditions hereof, County agrees that it shall cause County Waste Material, as defined, to be delivered to the Sanitary Landfill and the Company agrees that it will accept and landfill such County Waste Material.

2.02 The Tipping Fee to be charged to the County for the Disposal of County Waste Material pursuant to this agreement shall be calculated as follows:

Price Year 1	Compacted Waste	\$20.00 per ton
	Loose Waste	\$ 5.00 per cubic yard

Price Year 2-5 Adjusted annually based on CPI. Additionally in the event taxes, fees or other charges are imposed upon the disposal of the County' waste by federal, state, local or provincial laws and regulations, the County shall become liable for such costs.

Commencing with the first anniversary date of the date of this Agreement and no each subsequent anniversary date the said Tipping Fee shall be adjusted and revised according to the C.P.I formula set forth in Exhibit A attached hereto and incorporated herein by reference. As soon as practicable after the said annual anniversary date of each year, the Company shall notify the County of such rate adjustment and upon request provide the supporting data that is the basis for the gate rate adjustment. Each successive twelve (12) month period of operation shall constitute one (1) year.

2.03 In addition to the foregoing annual adjustment, the Company shall be entitled to an automatic increase in the County Waste Material Tipping Fee equal to the amount of any fee, surcharge, duty, tax, or other charges of any nature imposed by the federal government, any agency thereof, the State wherein the Sanitary Landfill is located (or to be located), any agency thereof, or by any local governmental agency which is payable solely by reason of the nature of the operations conducted by the Company and any other sales or service taxes of general application to the operation of the Sanitary Landfill. Such fee, surcharge, duty, tax or other charge shall immediately be passed through to all County Waste Material disposers in the form of a Tipping Fee increase and

shall include by way of example and not limitation a state tax or surcharge for general "superfund" purposes. In the event that the Company successfully challenges the validity or amount of any such charge, the County shall be entitled to a pro-rata rebate of its share of any overpayments of such charges. Notwithstanding the foregoing and provided that the County is not a contributing source or cause, the Company shall not be entitled to an increase in the County Waste Material Tipping Fee to pay for any "superfund" or other hazardous or toxic waste clean-up, as required by any judicial or administrative body of the local, state or federal government.

2.04 The Company shall also be entitled to an automatic increase in the County Waste Material Tipping Fee to offset the increase cost of operating the Sanitary Landfill as a result of increases in costs of operation at the Sanitary Landfill resulting from changes in federal, state or local environmental or other law or regulation concerning the receipt, disposal or handling of Solid Waste at the Sanitary Landfill. In the event of such increase, the Company shall notify the County fourteen (14) days in advance of such increase, and shall provide the County documentation sufficient to explain and justify the increase.

2.05 The Company will invoice the County by the first (1st) day of each month for all service performed during the previous month. The County shall pay Company within 15 days after County's receipt of an undisputed invoice; County shall pay Company interest on the unpaid amount at the rate of 1½ per month.

2.06 The Company shall be responsible for securing necessary permits and approvals from relevant federal, state, and local governmental agencies having jurisdiction over sanitary landfill operations.

2.07 The Company shall maintain the Sanitary Landfill open for performance of this Agreement between the hours of 7:00 a.m. and 4:00 p.m., Monday through Friday and 8:00 a.m. to 12:00 noon on Saturdays. In the event that the aforesaid Saturday hours are not required, Company may, upon prior notice to County shorten or eliminate such hours of operation.

2.08 The following holidays may be observed by the Company on which dates the Sanitary Landfill may, in the discretion of the Company, be closed: New Year's day, Thanksgiving Day and Christmas Day.

2.09 The Company agrees to install, construct and maintain in good working order and to have available on all days in which the Sanitary Landfill is open, a scale to be used in weight in County Waste Material deposited at the Sanitary Landfill. The Company agrees to cause normal maintenance and calibration of the scale to be performed in accord with manufacturer's recommendation. County may, on a monthly basis and during normal business hours, inspect the scale and test the accuracy of same. In the event the scale is not operable at any time, vehicles will be charged based upon the full truck cubic yardage capacity calculated at 500 pounds per cubic yard. The Company shall repair inoperable scales within a reasonable period of time.

2.10 During the term of this Agreement, County will continue its current practices or initiate the practices of collecting County Waste Material on its own behalf, or entering into and maintaining contracts with a waste collection service(s) for the collection of all County Waste Material; or permitting or licensing such waste collection service(s), and shall require as a condition to any such contract, permit or license that such collection service(s)

dispose of all defined waste at the Sanitary Landfill.

III.

TERM OF CONTRACT

This Agreement shall be effective on full execution by the parties. The initial term of this Agreement shall be five (5) years, commencing on July 1, 1991. The initial term of this Agreement may be extended by mutual agreement of the parties for an additional term of five (5) years.

IV.

PERMITS AND COMPLIANCE

The Company shall perform its obligations herein in compliance with the Permits and applicable law and regulation and the County shall fully cooperate with Company in this regard.

V.

INDEMNIFICATION

The Company agrees to protect, indemnify, defend and save harmless the County, its present and future officials, officers, employees, agents, subcontractors, representatives and assigns from any loss, claim, liability, penalty, fine, forfeiture, demand, cause of action, suit and costs and expenses incidental thereto (including cost of defense, settlement and reasonable attorney's fees), arising out of or relating to the Company's negligent or willful acts or omissions related to the maintenance and operation of the Sanitary Landfill except for occurrences caused by or arising out of the negligent or willful conduct of County, its officers, employees and agents.

VI.

INSURANCE

6.01 Company shall provide and maintain during active Sanitary Landfill operation, Workman's Compensation Insurance which shall meet the requirements of the State wherein the Sanitary Landfill is located.

6.02 The Company shall provide and maintain during active Sanitary Landfilling operations hereunder Public Liability Insurance, to protect against all claims arising out of the Company's operations that result in bodily injury, death or property damage suffered on or about the Sanitary Landfill. The policy or policies shall contain a clause that the insurer will not cancel or decrease the insurance coverage without first giving County sixty (60) days notice in writing.

6.03 The Company shall add the County as an additional insured to all insurance it is required to obtain hereunder, and shall furnish County evidence that such insurance is in force.

6.04 The limits of liability of all insurance required herein shall be as set forth in Exhibit B which is attached hereto and made part hereof.

6.05 The Company shall obtain a performance bond in the amount of \$100,000, the cost of which shall be reimbursed in full by the County upon receipt of invoice.

VII.

DEFAULT

Except as otherwise provided herein, if either party breaches this Agreement or default in the performance of any of the covenants or conditions contained herein for fifteen (15) days after the other party has given the party breaching or defaulting written notice of such breach or default, unless a longer period of time is required to cure such breach or default and the party breaching or defaulting shall have commenced to cure such breach or default within said period and pursues diligently to the completion thereof, the other party may: (1) terminate this Agreement as of any date which the said other party may select provided said date is at least thirty (30) days after the fifteen (15) days in which to cure or commence curing; (ii) cure the breach or default at the expense of the breaching or defaulting party; and (iii) have recourse to any other right or remedy to which it may be entitled by law, including, but not limited to, the right for all damage or loss suffered as a result of such termination. In the event either party waives default by the other party, such waiver shall not be construed or determined to be a continuing waiver of the same or any subsequent breach or default.

VIII.

GENERAL PROVISIONS

8.01 Neither party shall assign or transfer, or permit the assignment or transfer of, this Agreement or the rights hereunder without the prior written consent of the other party, which consent shall not be unreasonably withheld, provided however the Company may transfer or assign its interest hereunder, including both rights and obligations (and not either separately), to an "Affiliated Company" without the

prior written consent of County. In the event of such assignment or transfer, the assignee shall assume the liability of the Company, but such assumption of liability shall not relieve the Company of liability under this Agreement. "Affiliated Company" means any company which is a wholly owned subsidiary of Waste Management of North America, Inc. or which Waste Management of North America, Inc. or a subsidiary thereof owns at least fifty-one percent (51%) thereof.

8.02 This Agreement constitutes the entire agreement and understanding between the parties hereto, and it shall not be considered modified, altered, changed or amended in any respect unless in writing and signed by the parties hereto.

8.03 This is an Agreement for the performance of specific services described herein. Under no circumstances or conditions shall the operation of the Sanitary Landfill by the Company in accordance with this Agreement be deemed a public function, nor has County acquired an interest, ownership or otherwise in the real or personal property or improvements or fixtures at the Sanitary Landfill by virtue of this Agreement.

8.04 From and after the Commencement Date, either party's performance hereunder may be suspended and the corresponding obligations hereunder excused in the event and during the period that such performance is prevented by a cause or causes beyond the reasonable control of that party claiming relief under this subparagraph, unless such cause or causes are a result of action or nonaction by the Company. Such causes shall include, but not be limited to, acts of God, acts of war, riot, fire, explosion, accident, flood or sabotage; lack of adequate fuel, power or raw materials, judicial administrative or governmental laws, regulations, requirements, rules, orders or actions; injunctions or



restraining orders; the failure of any governmental body to issue or grant, or the suspension or revocation or modification of any license, permit or other authorization necessary for the construction and/or operation envisioned by this Agreement; national defense requirements; labor strike, lockout or injunction. The party claiming relief under this subparagraph shall provide to the other party a written detailed summary of the basis for the claim, together with supporting documentation, and shall, to the extent possible, continue partial performance of this Agreement if such continued performance is both reasonable and practicable. To the extent of partial performance by one party, the other party shall continue its performance pro tanto, provided that continued performance is economically reasonable. If the debilitating circumstance continues unabated for sixty (60) days, despite part performance by either party, either party may immediately terminate this Agreement.

8.05 If any term, clause or provision of this Agreement or the application thereof to any person or circumstances shall to any extent, be illegal, invalid or unenforceable under present or future laws effective during the term hereof, then it is the intention of the parties hereto that under the remainder of this Agreement, or the application of such term, clause or provision to persons or circumstances other than those to which it is held illegal, invalid or unenforceable, shall not be affected thereby, and it is also the intention of the parties hereto that in lieu of each term, clause or provision that is illegal, invalid or unenforceable, there be added as a part of this Agreement a term, clause or provision as similar in terms to such illegal, invalid or unenforceable term, clause or provision as may be possible and be legal, valid and enforceable.

8.06 This Agreement shall be governed and construed in accordance with the laws of the State of Tennessee.

8.07 The covenants, terms, conditions and provisions of this Agreement shall extend to and be binding upon the successors and approved assigns of the respective parties.

8.08 All notices or other communications to be given hereunder shall be in writing and shall be deemed given when mailed by registered or certified United States mail, addressed as follows:

To the County:

Attention: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

With a copy to:

Attention: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

To the Company:

Attention: Landfill Manager  
Chestnut Ridge Landfill and Recycling Center  
Fleenor Mill Road  
P.O. Box 139  
Heiskel, TN 37754

With a copy to:

Regional General Counsel  
Eastern/South Central Region  
2600 Delk Road, Suite 200  
Marietta, Georgia 30067

Change of address by either party shall be by notice given to the other in the same manner as above specified.

8.09 To the extent definition of specific terms is not provided herein but is nonetheless required by the

context, it is the intention of the parties to incorporate herein the definitions contained in applicable law and regulation in effect as of the date hereof, except to the extent subsequent law or regulation shall expressly or implicitly mandate a revised definition.

8.10 Whenever the consent, approval or cooperation of one party is expressly or implicitly required or necessary by the terms hereof or to the effect successful performance of the other party, such consent, approval or cooperation shall not be unreasonably withheld, denied or delayed.

IN WITNESS WHEREOF, the parties hereto cause their presence to be signed and sealed this 22 day of Oct., 1991, written by their respective officers pursuant to authorizations contained in duly adopted resolutions or ordinances, as the case may be.

APPROVED AS TO FORM:

By: *Richard F. Buhr*  
County Attorney

KNOX COUNTY

By: *Dwight Russell* / *Richard F. Buhr*  
Its: *Knox County Executive* by *profession*

Attest:

By: *Dwight Russell*

Attest:

By: *[Signature]*  
Its \_\_\_\_\_ Secretary

WASTE MANAGEMENT, INC. OF  
TENNESSEE

By: *[Signature]*  
Its *[Signature]* President

EXHIBIT "A"

RATE ADJUSTMENTS

DISPOSAL RATE CONSUMER PRICE INDEX

The beginning disposal rates specified in this Agreement shall be adjusted annually on July 1, 1992 and on every succeeding July 1 during the term to reflect changes in the Consumer Price Index. The method of adjustment shall be as follows:

$$\text{New Rate} = [\text{Old Rate}] \times [1 + (\text{Cn} - \text{Ci})/\text{Ci}]$$

Where: Old Rate = the rate in effect during the first year of the Agreement

Ci = the Consumer Price Index on the date of the Agreement execution

Cn = the Consumer Price Index on the first day following the annual anniversary of the Agreement

The Consumer Price Index used shall be the Price Index for all Urban Consumers (CPI-U), U.S. city average, all items, as published by the U.S. Department of Labor, Bureau of Statistics.

Example

A. Example Disposal Rate Adjustment

Rate adjustment on annual anniversary of Agreement.

Old Rate = \$ 20.00 per ton (assume)  
Ci = 115.00 (assume)  
Cn = 120.00 (assume)

Calculation

$$\text{New Rate} = [ \underline{20.00} ] \times [ 1 + \frac{(120 - 115)}{115} ]$$

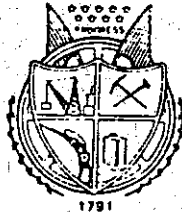
$$\text{New Rate} = \frac{20.00}{1.04348} \times 1.04348$$
$$\text{New Rate} = \underline{20.87}$$

In the event the U.S. Department of Labor, Bureau of Labor Statistics, ceases to publish the C.P.I., the parties hereto agree to substitute another equally authoritative measure of change in the purchasing power of the U.S. dollar as may be then available so as to carry out the intent of this provision.

**EXHIBIT "B"**

**INSURANCE COVERAGE RIDER**

<u>Coverages</u>	<u>Limits of Liability</u>
Workmen's Compensation	Statutory
Employer's Liability	\$1,000,000 each accident \$1,000,000 disease-policy
Limit Employee	\$1,000,000 disease-each
Bodily Injury Liability and Property Damage Combined	\$1,000,000 each occurrence
Automobile Bodily Injury Liability and Automobile Property Damage Combined	\$1,000,000 each occurrence
Excess Umbrella	\$5,000,000 aggregate



*1991-Knoxville's Bicentennial Year*

THE CITY OF KNOXVILLE, TENNESSEE

VICTOR ASHE  
MAYOR

**TO:** Members of the Council of the City of Knoxville  
**FROM:** Mayor Victor H. Ashe  
**DATE:** September 26, 1990

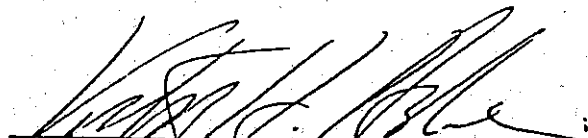
Dear Members of City Council:

In accordance with Section 408 of the Charter, you are hereby notified that a Special Meeting of the Council of the City of Knoxville will be held on Friday, September 28, 1990 at 1:00 p.m. in the Main Assembly Room of the City/County Building to consider the following matters:

An Emergency Ordinance amending Section 29-314 of the Knoxville City Code relating to multi-year contracts.

A Resolution authorizing the Mayor to execute an agreement with Waste Management, Inc. of Tennessee for the disposal of waste products.

A Resolution authorizing the Mayor to enter into a Modification Agreement with Waste Management, Inc. of Tennessee for the provision of certain recycling services.

  
Victor H. Ashe, Mayor



RESOLUTION NO. R-284-90

RESOLUTION

A RESOLUTION OF THE COUNCIL OF THE CITY OF KNOXVILLE AUTHORIZING THE MAYOR OF THE CITY OF KNOXVILLE TO EXECUTE AN AGREEMENT WITH WASTE MANAGEMENT, INC. OF TENNESSEE FOR THE DISPOSAL OF WASTE PRODUCTS.

RESOLUTION NO: R-284-90

REQUESTED BY: Public Service

PREPARED BY: Law Dept.

APPROVED AS TO FORM AND CORRECTNESS:

Director of Law

FINANCIAL IMPACT STATEMENT:

Director of Finance

APPROVED: 9-28-90

APPROVED AS AN EMERGENCY MEASURE: NA

MINUTE BOOK 54 PAGE

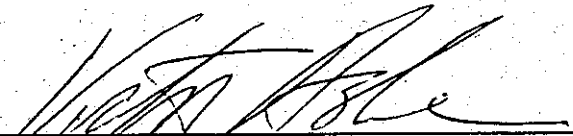
WHEREAS, the City of Knoxville ("City") has determined as a matter of policy and practicality that it needs to assure its long-term capability to dispose of the solid wastes, wood wastes and other waste products generated within the geographical boundaries of the City; and

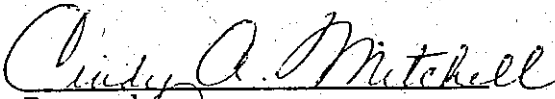
WHEREAS, Waste Management, Inc. of Tennessee ("Waste Management") is qualified to and does operate a sanitary landfill for the disposal of waste products, such landfill being known as Chestnut Ridge and located at Fleenor Mill Road, Clinton, Anderson County, Tennessee (the "Sanitary Landfill"); and

WHEREAS, the current Agreement between the city and Waste Management for the disposal of waste products generated within the geographical boundaries of the City terminates on September 30, 1990; and





  
Presiding Officer of the Council

  
Recorder

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DISPOSAL SERVICE AGREEMENT

THIS AGREEMENT made this \_\_\_\_\_ day of September, 1990, by and between the City of Knoxville, Tennessee, represented herein by its Mayor, pursuant to motion duly made and duly adopted by the City Council of the City of Knoxville, Tennessee, a certified copy of which is attached hereto and made a part hereof, (the "City"), and Waste Management Inc., of Tennessee, a Tennessee corporation being represented herein by C.M. Boggs, its General Manager (the "Company").

WITNESSETH:

WHEREAS, the City has determined as a matter of policy and practicality that it needs to assure its long-term capability to dispose of the solid waste, wood waste and other waste products generated within the geographical boundaries of the City;

WHEREAS, the Company is qualified to and does operate a sanitary landfill for the disposal of solid waste, wood waste, and other waste products, such landfill being known as Chestnut Ridge and located at Fleenor Mill Road, Clinton, Anderson County, Tennessee (the "Sanitary Landfill");

WHEREAS, the parties acknowledge that the operation of the Sanitary Landfill by the Company is such that the Company is the only operator of a qualified landfill which can accommodate the long-term needs and requirements of the City with regard to the disposal of waste and waste products as of the effective date of this Agreement;

WHEREAS, the parties further recognize that as the exclusive furnisher of services for providing long term waste disposal services, it is not necessary to submit the City's waste disposal requirements to competitive bidding, such exception being provided for in Section 29-304 of the Procurement Code of the City of Knoxville presently in force and effect; and

WHEREAS, the governing authority of the City has the power to enter into service contracts for the disposal of such waste material.

NOW, THEREFORE, FOR AND IN CONSIDERATION of the respective covenants herein contained, the parties have agreed as follows:

I.  
DEFINITIONS

1.01 The Sanitary Landfill - Chestnut Ridge Sanitary Landfill at Fleenor Mill Road, Clinton, Anderson County, Tennessee which is operated by the Company.

1.02 City Waste Material - any and all "solid waste" (as defined by the Tennessee Solid Waste Disposal Act, Tenn. Code Ann. § 68-30-103) which definition, by way of example, but not by way of limitation, shall include refuse, garbage, trash, bulky waste, and construction and remodeling debris generated by and collected by the City of Knoxville, Tennessee for sanitary landfill disposal, provided said waste material is collected by and delivered to the Sanitary Landfill by City waste collection vehicles or any waste collection service operating under contract with the City to provide such waste collection services. Dewatered municipal sludge and hazardous waste (as defined by applicable federal, state and local laws, regulations and ordinances) are specifically excluded in the definition of City Waste Material.

1.03 Permits - as used herein, shall include any and all final and non-appealable governmental or other permits, consents, approvals, certifications, licenses, authorizations, utility connections, annexation, zoning, special use, certificate of designation or other land use designation as may be necessary to allow the Company to operate the Sanitary Landfill.

II.  
SCOPE OF SERVICE

2.01 Subject to the terms and conditions hereof, the City agrees that it shall cause City Waste Material, as defined, to be delivered to the Sanitary Landfill and the Company agrees that it will accept and landfill such City Waste Material.

2.02(a) Year 1 and 2. The Tipping Fee to be charged to the City for the disposal of City Waste Material pursuant to this Agreement shall be \$8.48 per ton for year 1 of this Agreement (October 1, 1990 through September 30, 1991) for up to 70,000 tons delivered and \$16.80 per ton for over 70,000 tons delivered, and \$8.90 per ton for year 2 of this Agreement for up to 70,000 tons delivered and \$17.64 per ton for over 70,000 tons delivered.

2.02(b) Year 3 through Year 10. The Tipping Fee for year 3 and all remaining years of the term of this Agreement shall be as follows: in year 3, the City shall be charged a City Waste Material Tipping Fee of \$21.53, and for

years 4 through year 10, the City Waste Material Tipping Fee shall be that charged in year 3, increased on October 1 of each year so as to reflect Consumer Price Index ("C.P.I.") adjustments as described in Section 2.02(e); provided, however, that, inasmuch the year 3 City Waste Material Tipping Fee of \$21.53 reflects a base rate of \$19.53 as of October 1, 1990 as adjusted for an assumed inflation rate of five percent (5%), the City Waste Material Tipping Fee in year 3, and therefore for years 4 through 10, shall be adjusted as necessary to reflect true C.P.I. adjustments as of October 1, 1991 and October 1, 1992.

2.02(c) The payment in year 3 and in each succeeding year of the base rate as increased to reflect C.P.I. adjustments assumes that the City will deliver 70,000 tons of City Waste Material during the contract year. Because the parties cannot accurately predict the actual number of tons that will be delivered, and to accomodate the City's anticipated innovations in recycling, composting, and related disposal methods, the parties agree to review annually on or about October 15 the payments made during the previous year and to adjust the total amount paid as follows:

For every ton delivered below 70,000 tons, the City shall pay to the Company \$3.59.

For every ton delivered above 70,000 tons, the Company shall pay to the City \$3.01.

The payments required by this subsection shall be made by lump sum on or before December 1 of each year.

2.02(d) For illustrative purposes only, Exhibit "B" hereto sets forth the payments to be made during the term of this Agreement for assumed economic conditions and payment levels, e.g. annual C.P.I. increases of five percent (5%) and a payment base in year 3 of \$21.53. The actual City Waste Material Tipping Fee shall be determined as set forth in subparagraphs 2.02(a) and (b) hereinabove.

2.02(e) Commencing with the first anniversary date of the date of this Agreement, and on each subsequent anniversary date, the Tipping Fee shall be adjusted and revised according to the C.P.I. formula set forth in Exhibit "A" attached hereto and incorporated herein by reference. As soon as practicable after the said anniversary date of each year, the Company shall notify the City of such rate adjustment and upon request provide the supporting data that is the basis for the base rate adjustment. Each successive twelve (12) month period of operation shall constitute one (1) year.

2.03 In addition to the Tipping Fee, the City shall pay to the Company any Anderson County charge existing as of the date of this Agreement for City Waste Material landfilled. Neither this paragraph nor any other provision of this Agreement shall be construed to give Anderson County or any other third party any right whatsoever under this Agreement, and the City in no way waives its right to challenge or contest any such charges or increases thereof; provided, however, that the City shall reimburse the Company to the extent that it is required to pay such charge to Anderson County.

2.04 In addition, the Company shall be entitled to an automatic increase in the City Waste Material Tipping Fee equal to the City's proportionate share of the amount of any fee (including any Anderson County charge), surcharge, duty, tax, or other charges of any nature imposed by the federal government, any agency thereof, the State wherein the Sanitary Landfill is located (or to be located), any agency thereof, or by any local governmental agency which is payable solely by reason of the nature of the operations conducted by the Company and any other sales or service taxes of general application to the operation of the Sanitary Landfill. The City's proportionate share of such fee, surcharge, duty, tax or other charge shall immediately be passed through to all City Waste Material disposers in the form of a Tipping Fee increase and shall include by way of example and not limitation a state tax or surcharge for "superfund" purposes, but shall specifically exclude any costs related to the Company's violation of environmental laws or "superfund" liability. The Company shall give timely notice to the City of such increase with satisfactory documentation supporting any such cost increases and their impact on the operation of the Sanitary Landfill.

2.05 In addition, the Company shall be entitled to an automatic increase in the City Waste Material Tipping Fee to offset the increased cost of operating the Sanitary Landfill as a result of increases in costs of operations at the Sanitary Landfill resulting from changes in federal, state or local environmental or other law or regulation concerning the receipt, disposal or handling of Solid Waste at the Sanitary Landfill. Prior to any such increase, the Company shall provide to the City reasonable notice of the reason for such additional costs and the proposed method by which the Company intends to comply with the law or regulation. It is understood and agreed by the parties that the City shall be responsible for only the City's proportionate share of the minimum necessary expenses which will bring the Company into compliance with said law or regulation.

2.06 The parties acknowledge that the City Waste Material Tipping Fee to be paid hereunder accurately reflects the legal and economic conditions either existing as of October 1, 1990, or known as of October 1, 1990 to be applicable during the term of this Agreement.

2.07 The Company will invoice the City by the first (1st) day of each month for all services performed during the previous month. The City shall pay Company within thirty (30) days after the City's receipt of an undisputed invoice. The City shall pay the Company interest on all amounts unpaid after thirty (30) days at the rate of 1½% per month.

2.08 The Company shall be responsible for securing necessary Permits and other approvals from relevant Federal, State and Local governmental agencies having jurisdiction over sanitary landfill operations.

2.09 Except for holidays, the Company shall open the Sanitary Landfill for performance of this Agreement between the hours of 7:00 a.m. and 5:00 p.m., Monday through Friday, and between the hours of 7:00 a.m. and 1:00 p.m., Saturdays. In the event that the aforesaid Saturday hours are not required, the Company may, upon prior notice to City shorten or eliminate such hours of operation. In the event that emergency conditions are declared by the Mayor of the City, the Company will keep the Sanitary Landfill open for disposal of unusual amounts of solid waste material generated or created by such emergency conditions.

2.10 The following holidays may be observed by the Company on which the Sanitary Landfill may, in the discretion of the Company, be closed: New Year's Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

2.11 The Company agrees to maintain in good working order and to have available on all days in which the Sanitary Landfill is open, a scale to be used in weighing City Waste Material deposited at the Sanitary Landfill. The Company agrees to cause normal maintenance and calibration of the scale to be performed in accord with manufacturer's recommendation. The City may, on a quarterly basis and during normal business hours, inspect the scale and test its accuracy. In the event the scale is not operable at any time, vehicles will be charged based upon the full truck cubic yardage capacity calculated at 500 pounds per cubic yard.

2.12 All City Waste Material landfilled shall be disposed of at the Sanitary Landfill.





Property Damage \$100,000 per any one claim

Umbrella Liability \$1,000,000 with \$25,000 deductible and/or base insurance to protect itself, its agents and employees from claims for damages for personal injury, wrongful and accidental death, and property damage which may arise from the operations under this Agreement, whether such operations be performed by WMI and/or its employees or authorized agents or representatives.

The policy or policies shall name the City as an additional insured and shall contain the clause that the insurer will not cancel or decrease the insurance coverage without first giving the City thirty (30) days' notice of the intent to cancel in writing.

6.03 The Company shall furnish city evidence that the insurance required of it is in force.

#### VII. DEFAULT

Except as otherwise provided herein, if either party breaches this Agreement or defaults in the performance of any of the covenants or conditions contained herein, and such breach or default continues unabated for fifteen (15) days after the other party has given the breaching or defaulting party written notice of such breach or default, (unless a longer period of time is required to cure such breach or default and the breaching or defaulting party has begun to cure such breach or default within the fifteen (15) day period and continues diligently to cure such breach or default), the other party may:

(i) terminate this Agreement as of any date which the said other party may select provided said date is at least thirty (30) days after the fifteen (15) days in which to cure or commence curing;

(ii) cure the breach or default at the expense of the breaching or defaulting party; and

(iii) have recourse to any other right or remedy to which it may be entitled by law, including, but not limited to, the right to damages for loss suffered as a result of such termination.

In the event either party waives default by the other party, such waiver shall not be construed or determined to be a continuing waiver of the same or any subsequent breach or default.

VIII.  
WARRANTIES AND REPRESENTATIONS

The parties hereby warrant, represent and covenant unto each other that, as of the date of the execution of this Agreement:

(i) Each is duly authorized and empowered to negotiate and enter into this Agreement, and to fully perform in accordance with all of the obligations imposed upon it hereunder, and

(ii) There is no decree, judgment, order or claim of any kind threatened or in existence enjoining or restraining either party from taking any action required under this Agreement.

IX.  
GENERAL PROVISIONS

9.01 Assignment. Neither party shall assign or transfer, or permit the assignment or transfer of, this Agreement or the rights hereunder without the prior written consent of the other party, which consent shall not be unreasonably withheld, provided however the Company may transfer or assign its interest hereunder to an "Affiliated Company" without the prior written consent of City. In the event of such assignment or transfer, the assignee shall assume the liability of the Company, but such assumption of liability shall not relieve the Company of liability under this Agreement. For purposes of this paragraph, "Affiliated Company" means any company which is a wholly owned subsidiary of Waste Management of North America, Inc. or of which Waste Management of North America, Inc. or a subsidiary thereof owns at least fifty-one percent (51%).

9.02 Complete Agreement. This Agreement constitutes the entire agreement and understanding between the parties, and it shall not be modified, altered, changed or amended in any respect unless in writing and signed by the parties.

9.03 No Public Function. This is an Agreement for the performance of specific services described herein. Under no circumstances or conditions shall the operation of the Sanitary Landfill by the Company in accordance with this Agreement be deemed a public function, nor has City acquired

an interest, ownership or otherwise in the real or personal property or improvements or fixtures at the Sanitary Landfill by virtue of this Agreement.

9.04 Force Majeure. The performance of this Agreement may be suspended and the obligations hereunder excused in the event of, and during the period that such performance is prevented by, a cause or causes beyond the control of either party hereto, sometimes known as force majeure.

9.05 Unenforceable Clauses. If any term, clause or provision of this Agreement, or the application thereof to any person or circumstances, shall, to any extent, be deemed or held to be illegal, invalid or unenforceable under present or future laws effective during the term hereof, then it is the intention of the parties that the remainder of this Agreement, or the application of such term, clause or provision to persons or circumstances other than those to which it is illegal, invalid or unenforceable, shall not be affected thereby. In lieu of each term, clause or provision that is illegal, invalid or unenforceable, there shall be added as a part of this Agreement a term, clause or provision as similar in terms to such illegal, invalid or unenforceable term, clause or provision as may be possible to be legal, valid and enforceable.

9.06 Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Tennessee.

9.07 Binding Effect. The covenants, terms, conditions and provisions of this Agreement shall extend to and be binding upon the successors and approved assigns of the respective parties.

9.08 Notices. All notices or other communications to be given hereunder shall be in writing and shall be deemed given when mailed by registered or certified United States mail, addressed as follows:

To the City:

Attention: Director of Public Service  
P. O. Box 1631  
Knoxville, Tennessee 37901

With a copy to:

Attention: Director of Law  
P. O. Box 1631  
Knoxville, Tennessee 37901

To the Company:

Attention: Landfill Manager  
Chestnut Ridge Landfill  
Fleenor Mill Road, Box 139  
Heiskell, Tennessee 37754

With a copy to:

Michael K. Slattery  
Region Vice President and General Counsel  
Eastern/South Central Region  
2600 Delk Road, Suite 200  
Marietta, Georgia 30067

Change of address by either party shall be by notice given to the other in the same manner as above specified.

9.09 Definitions. To the extent any definition of specific term is not provided herein but is nonetheless required by the context, it is the intention of the parties to incorporate herein the definitions contained in applicable law and regulation in effect as of the date hereof, except to the extent subsequent law or regulation shall expressly or implicitly mandate a revised definition.

9.10 Approval. Whenever the consent, approval or cooperation of one party is expressly or implicitly required or necessary by the terms hereof or to effect successful performance of the other party such consent, approval or cooperation shall not be unreasonably withheld, denied or delayed.

IN WITNESS WHEREOF, the parties hereto cause their presence to be signed and sealed this \_\_\_\_ day of September, 1990, written by their respective officers pursuant to authorizations contained in duly adopted resolutions or ordinances, as the case may be.

APPROVED AS TO FORM:

CITY OF KNOXVILLE

By \_\_\_\_\_  
City Law Director

By \_\_\_\_\_  
Its Mayor

Attest for the City:

By \_\_\_\_\_  
City Recorder

WASTE MANAGEMENT INC. OF  
TENNESSEE

By \_\_\_\_\_  
Its \_\_\_\_\_

**EXHIBIT "A"**

**RATE ADJUSTMENTS**

**DISPOSAL RATE CONSUMER PRICE INDEX**

The beginning disposal rates specified in this Agreement shall be adjusted annually on October 1, 1991 and on every succeeding October 1 during the term to reflect changes in the Consumer Price Index. The method of adjustment used shall be as follows:

$$\text{New Rate} = [\text{Old Rate}] \times [1 + (\text{Cn} - \text{Ci})/\text{Ci}]$$

Where: Old Rate = the rate in effect during the first year of this Agreement

Ci = the Consumer Price Index on the date of the Agreement execution

Cn = the Consumer Price Index on the first day following the annual anniversary of the Agreement

The Consumer Price Index used shall be the Consumer Price Index, United States Average for all Items Portion, New Series, for Urban Wage Earners and Clerical Workers, as published by the United States Department of Labor.

In the event the U.S. Department of Labor, Bureau of Labor Statistics, ceases to publish the C.P.I., the parties hereto agree to substitute another equally authoritative measure of change in the purchasing power of the U.S. dollar as may be then available so as to carry out the intent of this provision.

EXHIBIT "B"

PROPOSED RATE STRUCTURE - CITY OF KNOXVILLE  
TO BE ADJUSTED ANNUALLY BASED ON C.P.I./VOLUME RATES

<u>Effective Date</u>	<u>City/Ton Pmt. Rate</u>	<u>City Volume</u>	<u>Total Cost</u>
10/01/90	\$ 8.48	70,000	\$ 593,600
10/01/91	\$ 8.90	70,000	\$ 623,280
10/1/92	\$21.53	70,000	\$ 1,506,851
10/1/93	\$22.60	70,000	\$ 1,582,193
10/1/94	\$23.73	70,000	\$ 1,661,303
10/1/95	\$24.92	70,000	\$ 1,744,368
10/1/96	\$26.17	70,000	\$ 1,831,587
10/1/97	\$27.47	70,000	\$ 1,923,166
10/1/98	\$28.85	70,000	\$ 2,019,334
10/1/99	\$30.29	70,000	\$ 2,120,290

Assumes:

Annual Rate Increase \$0.000  
Annual Inflation Factor 5.00%

ORDINANCE NO: 0-290-90

# ORDINANCE

AN EMERGENCY ORDINANCE OF THE  
COUNCIL OF THE CITY OF KNOXVILLE  
AMENDING SECTION 29-314 OF THE  
KNOXVILLE CITY CODE RELATING TO  
MULTI-YEAR CONTRACTS.

ORDINANCE NO: 0-290-90  
REQUESTED BY: Public Service  
PREPARED BY: Law Dept.  
APPROVED AS TO FORM AND  
CORRECTNESS: \_\_\_\_\_  
Director of Law  
FINANCIAL IMPACT STATEMENT: \_\_\_\_\_  
Director of Finance  
APPROVED ON 1ST \_\_\_\_\_  
READING: NA  
APPROVED ON 2ND \_\_\_\_\_  
READING: NA  
APPROVED AS  
AN EMERGENCY  
MEASURE: 9-28-90  
MINUTE BOOK 54 PAGE \_\_\_\_\_

WHEREAS, Section 29-314 of the Knoxville City Code provides that, unless otherwise provided in the ordinance making appropriations therefor, a contract for procured items may be entered into for periods of not more than three (3) years; and

WHEREAS, it is not clear whether said Code provision applies to contracts for solid waste and/or recycling services, including, but not limited to the collection and disposal of solid waste materials; and

WHEREAS, the cost for the collection and disposal of solid waste materials is rising across the nation, and the use of multi-year contracts greater than three (3) years for the provision of such services may at times be in the best interests of the city of Knoxville and its taxpayers; and



1           WHEREAS, the Mayor and the Director of the Department  
2 of Public Service, which is responsible for the collection and  
3 disposal of solid waste within the City of Knoxville, recommend  
4 that Code Section 29-314 be amended so as to allow the entering  
5 into of contracts for solid waste and/or recycling services for a  
6 period of time greater than three years when such contracts are  
7 in the best interests of the City; and

8           WHEREAS, the Knoxville City Council concurs in the  
9 recommendation of the Mayor and the Director of Public Service;  
10 and

11           WHEREAS, an emergency exists in that it is necessary  
12 for the immediate preservation of the public peace, property,  
13 health and safety that this Ordinance take effect upon its  
14 passage.

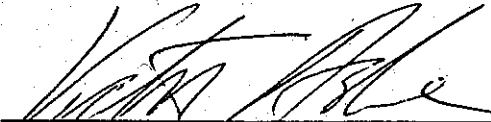
15           NOW, THEREFORE, BE IT ORDAINED BY THE COUNCIL OF THE  
16 CITY OF KNOXVILLE:

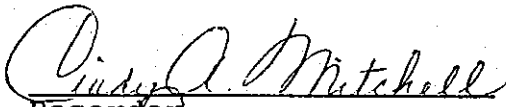
17           SECTION 1: Section 29-314 of the Knoxville City Code  
18 is amended to add the following paragraph as new subsection (d)  
19 thereto:

20           "(d) The foregoing subparagraphs shall not  
21 apply to contracts for solid waste collection  
22 and/or disposal services including, but not  
23 limited to, the collection, disposal, and/or  
24 recycling of solid waste material, where the  
25 Mayor and the Director of Public Service  
26 recommend that it is in the best interest of  
27 the City to contract for such services for a  
28 period of time greater than three (3) years."

          SECTION 2: An emergency is declared to exist in that  
it is necessary for the immediate preservation of the public  
peace, property, health and safety that this Ordinance take  
effect immediately upon its passage.

1           SECTION 3: This Ordinance shall take effect from and  
2 after its passage, the public welfare requiring it.

3  
4   
5 Presiding Officer of the Council

6   
7 Recorder

8  
9  
10  
11  
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28



RESOLUTION NO. R-285-9

# RESOLUTION

A RESOLUTION OF THE COUNCIL OF THE CITY OF KNOXVILLE AUTHORIZING THE MAYOR TO ENTER INTO A MODIFICATION AGREEMENT WITH WASTE MANAGEMENT, INC. OF TENNESSEE FOR THE PROVISION OF CERTAIN RECYCLING SERVICES.

RESOLUTION NO: R-285-90

REQUESTED BY: Public Service

PREPARED BY: Law Dept.

APPROVED AS TO FORM AND CORRECTNESS:

Director of Law

FINANCIAL IMPACT STATEMENT:

Director of Finance

APPROVED: 9-28-90

APPROVED AS AN EMERGENCY MEASURE:

NA

MINUTE BOOK 54 PAGE \_\_\_\_\_

WHEREAS, pursuant to an Assignment Agreement dated as of June 1, 1990, between the City of Knoxville ("City"), Waste Management, Inc. of Tennessee ("Waste Management"), and the Metropolitan Knox Solid Waste Authority, Inc. ("Authority"), the Authority assigned to the City, and the City accepted assignment of, a Solid Waste Resource Recycling Agreement for the Comprehensive Intergrated Solid Waste Management Plan, dated October 26, 1989, pursuant to which Waste Management agreed to provide certain recycling services to the Authority ("Recycling Agreement"); and

WHEREAS, the City agreed to accept assignment of the Recycling Agreement subject to the condition that Waste

1 Management modify the recycling agreement, which it did by  
2 Modification Agreement dated June 1, 1990 (the "Modification  
3 Agreement"); and

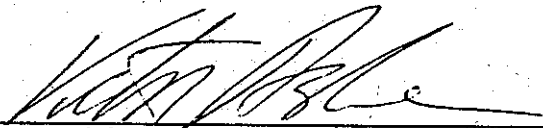
4 WHEREAS, the City and Waste Management have  
5 subsequently executed further modification agreements which  
6 clarified certain dates set forth in the Modification Agreement  
7 and which extended the dates within which certain notices were to  
8 be given under the recycling agreement, as modified; and

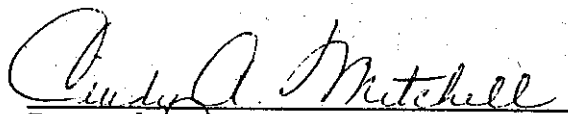
9 WHEREAS, pursuant to the Modification Agreement, as  
10 modified or amended, the parties now desire to modify the  
11 recycling agreement to amend the term of the Phase I recycling  
12 services, and payment therefor, and to provide the City the  
13 option of continuing or discontinuing Phase II recycling  
14 services.

15 NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE  
16 CITY OF KNOXVILLE:

17 SECTION 1: The Mayor be and hereby is authorizing to  
18 enter into the Fifth Modification Agreement with Waste  
19 Management, Inc. of Tennessee in substantially the form attached  
20 hereto as Exhibit A.

21 SECTION 2: This Resolution shall take effect from and  
22 after its passage, the public welfare requiring it.

23   
24 Presiding Officer of the Council

25   
26 Recorder  
27

FIFTH MODIFICATION AGREEMENT

This Fifth Modification Agreement, is dated as of the \_\_\_\_ day of September, 1990, between WASTE MANAGEMENT, INC. OF TENNESSEE, a Tennessee corporation ("Waste Management"), and THE CITY OF KNOXVILLE, TENNESSEE, a Tennessee municipal corporation ("City").

RECITALS

Pursuant to an Assignment Agreement dated as of June 1, 1990, between the City, Waste Management, and the Metropolitan Knox Solid Waste Authority, Inc. ("Authority"), the Authority assigned to the City, and the City accepted assignment of, a Solid Waste Resource Recycling Agreement for the Comprehensive Integrated Solid Waste Management Plan, dated October 26, 1989, pursuant to which Waste Management agreed to provide certain recycling services to the Authority ("Recycling Agreement"). The City agreed to accept assignment of the Recycling Agreement subject to the condition that Waste Management modify the Recycling Agreement, which it did by Modification Agreement dated as of the first (1st) day of June, 1990 ("Modification Agreement"). On June 26, 1990, the City and Waste Management executed a Second Modification Agreement which clarified certain dates set forth in Section 2 of the Modification Agreement, and on both July 31, 1990 and on August 31, 1990, respectively, the parties executed a Third Modification Agreement and a Fourth Modification Agreement to

extend the dates within which certain notices were to be given under the Recycling Agreement, as modified. Pursuant to the Modification Agreement, as modified or amended, the parties now desire to modify the Recycling Agreement to amend the term of the Phase I Recycling Services, and payment therefor, and to provide the City the option of continuing into Phase II Recycling Services.

NOW, THEREFORE, in consideration of the Recitals and of the mutual covenants hereinafter contained, the parties agree as follows:

1. The Recycling Agreement is hereby modified at Article 4, Section 4.1.1 to read as follows:

Phase I Recycling Services shall begin on the Agreement Date except for Phase I Collection Services which shall begin as provided by Paragraph 5.3.1. The Recycling Company shall continue performing Phase I Recycling Services through March 31, 1993 or until commencement of Phase II Collection Services, if applicable, as provided in Paragraph 5.3.2.

2. The Recycling Agreement is hereby modified at Article 4, Section 4.2.1 to read as follows:

Until December 31, 1992, the City shall have the option to initiate Phase II Recycling Services by issuing the Phase II Notice to Proceed. In the event that the City chooses not to issue the Phase II Notice to Proceed, neither party shall have any obligation beyond completing its respective Phase I Recycling Services duties and obligations.

3. The Recycling Agreement is hereby modified at Article 5, Section 5.1 to read as follows:

### General Obligations

The Recycling Company shall provide all administration, management, engineering, professional expertise, labor, materials and equipment necessary to: purchase and distribute the Recycling Collection Bins; provide Collection Services, Processing Services, Marketing Services and Public Education Services; design and construct the Materials processing Facility if the Phase II Notice to Proceed is issued by the City on or before December 31, 1992; and fulfill all other obligations required of the Recycling Company by the Agreement.

4. The Recycling Agreement is hereby modified at Article 10, Section 10.14 to read as follows:

#### Written Notice to City

Notice to the City shall be delivered to:

Attention: Director of Public Service  
P. O. Box 1631  
Knoxville, Tennessee 37901

With a copy to:

Attention: Director of Law  
P. O. Box 1631  
Knoxville, Tennessee 37901

5. Article 10, Sections 10.3 and 10.15 of the Recycling Agreement, as well as all other references in the Recycling Agreement and obligations of either party regarding the Independent Consulting Engineer, are hereby deleted or terminated, as applicable, in their entirety.

6. The Recycling Agreement is modified at Appendix O, Section 2.0 to read as follows:

The monthly Recycling Services Fee during Phase I shall be determined as follows:

$$\text{RSF} = \text{Fb}_1 \times \text{EAF} \times \text{RU} + \text{RCB} + \text{DC} + \text{CDD} + \text{CMP} - (.50 \times \text{MSR}) - \text{ADD} - \text{AMP} + \$8700.00.$$

The modification of the Recycling Agreement under this subparagraph shall take effect as of September 1, 1990.

7. As partial consideration from the City to Waste Management for entering into this Fifth Modification Agreement, and in particular for extending the term of Phase I Recycling Services and agreeing to grant the City the option of whether it will begin Phase II Recycling Services, the City



agrees to pay to Waste Management the sum of Thirty-Six Thousand Dollars (\$36,000.00) upon execution of this Fifth Modification Agreement.

8. The City and Waste Management hereby warrant, represent and covenant unto each other that, as of the date of this Fifth Modification Agreement:

(i) Each is duly authorized and empowered to negotiate and enter into this Fifth Modification Agreement, and to fully perform in accordance with all of the obligations imposed upon it hereunder, and

(ii) There is no decree, judgment, order or claim of any kind threatened or in existence enjoining or restraining either Party from taking any action required under this Fifth Modification Agreement.

All other paragraphs of the Modification Agreement shall remain in full force and effect.

IN WITNESS WHEREOF, the City and Waste Management have caused this agreement to be executed in their respective corporate names to take effect as of the date first written above, unless otherwise noted herein.

WASTE MANAGEMENT, INC.

CITY OF KNOXVILLE, TENNESSEE

By: \_\_\_\_\_  
General Manager

By: \_\_\_\_\_  
Mayor

ATTEST FOR THE CITY:

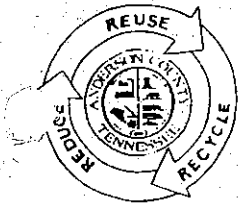
By: \_\_\_\_\_  
City Recorder

APPROVED AS TO FORM  
AND CORRECTNESS:

By: \_\_\_\_\_  
City Law Director

FUNDS CERTIFIED:

By: \_\_\_\_\_  
City Finance Director



## REGIONAL SOLID WASTE BOARD

ANDERSON COUNTY COURTHOUSE  
100 N. MAIN ST., ROOM 118  
CLINTON, TN 37716  
(615) 457-5400, EXT. 366

### RESOLUTION

A RESOLUTION OF THE ANDERSON COUNTY REGIONAL SOLID WASTE PLANNING REGION BOARD  
AGREEING TO ACCEPT MUNICIPAL SOLID WASTE FROM THE  
KNOX SOLID WASTE PLANNING REGION, TENNESSEE.

WHEREAS, the Anderson Regional Solid Waste Planning Board is responsible for the planning and capacity assurance that involves the waste stream of and into Anderson County, Tennessee; and

WHEREAS, the Anderson Region is a single-county region as formed under Tennessee Code Annotated Section 68-211-813; and

WHEREAS, the Tennessee Solid Waste Disposal Act of 1991 requires that "each plan submitted by a municipal solid waste region shall include [a] planned capacity assurance, including descriptions of planned or needed facilities" [T.C.A. 68-211-815 (b) (6)]; and the Guidelines for Preparation of a Municipal Solid Waste Regional Plan, July 1992 requires documentation of the concurrence of an impacted region in a waste import/export situation; and

WHEREAS, the Knox County Region currently sends its municipal solid waste to the Chestnut Ridge Sanitary Landfill in Anderson County, owned by Waste Management, Inc., and will continue to do so for the remainder of its contracts, and possibly for the remainder of the ten year planning period.

NOW, THEREFORE, BE IT RESOLVED that the Anderson Regional Solid Waste Planning Board agrees to accept municipal solid waste from the exporting Knox Region (as defined by Knox County boundaries) for the duration of the planning period (1994 through 2003).

  
George Bullock, Chairman

MAY 12, 1994

Date

**Appendix E**  
**Review by Appropriate Municipal or Regional  
Planning Commission**





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M E M O R A N D U M

TO: Knoxville/Knox County Planning Commission

FROM: Norman Whitaker, Executive Director *NW*

DATE: April 5, 1994

SUBJECT: Municipal Solid Waste Regional Plan

The attached Municipal Solid Waste Regional Plan was prepared by the Knox Solid Waste Region Board and its committees, and CH<sub>2</sub>M Hill Consultants. The Board and committee members were appointed by County Executive Dwight Kessel to develop the plan which is required by the state to meet specific waste-reduction measures over the next ten years. The foremost objective, and of immediate concern, is to reduce the solid waste that is disposed of in sanitary landfills by 25% per person by 1996. In order to reach that objective, the Solid Waste Board proposes the following significant efforts:

- Diverting construction and demolition waste to landfills which are specifically designed for that purpose
- Removing yard waste through composting programs
- Recycling of all waste with a particular emphasis on paper

The plan also addresses the need for greater public education, improvements in convenience, recycling and transfer centers, tire storage/reduction programs, household hazardous waste programs, and the personnel and facilities that are needed for plan implementation. An executive summary of the plan is presented in Section 1.

I recommend that you adopt this plan and that it be sent forward to the County Commission with a recommendation for adoption.

MC/br

Suite 403 • City County Building  
400 Main Street  
Knoxville, Tennessee 37902  
615 • 521 • 2500  
FAX • 521 • 2068

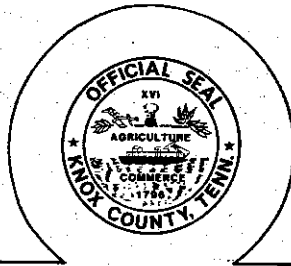


## **RESOLUTION**

*RESOLVED, that the Knoxville/Knox County Metropolitan Planning Commission hereby approves and adopts the Municipal Solid Waste Regional Plan prepared by the Knox Solid Waste Planning Region, dated March, 1994, and recommends adoption of the same by the Knox County Commission.*

*April 8, 1994*

Suite 403 • City County Building  
400 Main Street  
Knoxville, Tennessee 37902  
615 • 521 • 2500  
FAX • 521 • 2068



## William Mike Padgett

Knox County Clerk

STATE OF TENNESSEE

COUNTY OF KNOX

I, William Mike Padgett, Clerk of Knox County, Tennessee, do hereby certify that the attached is a true and correct copy of Resolution R-94-5-107 - Resolution of the Commission of Knox County, Tennessee approving the Solid Waste Plan for Knox County.

This resolution was approved by the Knox County Board of Commissioners at their May 23, 1994 Regular Session meeting.

The same shall appear of record in Resolution Book 8 of the Knox County Board of Commissioners in the office of the Knox County Clerk.

Witness my hand at office in Knoxville, Tennessee this the 24th day of June 1994.

Wm. Mike Padgett  
Knox County Clerk





RESOLUTION

A RESOLUTION OF THE  
COMMISSION OF KNOX COUNTY  
TENNESSEE APPROVING THE SOLID  
WASTE PLAN FOR KNOX COUNTY.

RESOLUTION NO.: R-94-5-107

REQUESTED BY: Solid Waste Director

PREPARED BY: Knox County Law Dir.

APPROVED AS TO FORM AND CORRECTNESS: Richard A. Buler  
Director of Law

APPROVED: \_\_\_\_\_ May 23, 1994  
Date

VETOED: \_\_\_\_\_  
Date

VETO OVERRIDE: \_\_\_\_\_  
Date

MINUTE BOOK \_\_\_\_\_ PAGE \_\_\_\_\_

WHEREAS, this Commission previously established the Knox County Municipal Solid Waste Region for Knox County, Tennessee; and

WHEREAS, a contract with CH2M Hill Company was approved to provide engineering consultant services to Knox County for the development of a municipal solid waste regional plan; and

WHEREAS, the municipal solid waste regional plan for Knox County has been submitted for approval by this Commission; and

WHEREAS, the Human Services and Personnel Committee deems it necessary and appropriate to approve the Municipal Solid Waste

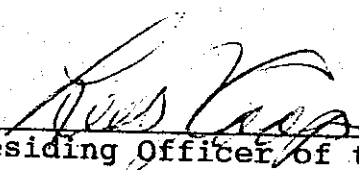
Regional Plan for Knox County in substantive form as the plan presented this date to the Commission, a copy of which is attached hereto as Exhibit A and incorporated herein by reference.

NOW, THEREFORE, BE IT RESOLVED BY THE COMMISSION OF KNOX COUNTY AS FOLLOWS:

The Municipal Solid Waste Regional Plan for Knox County, presented this date to the Commission, is hereby adopted and approved in substantive form as presented this date, a copy of which is attached hereto as Exhibit A, and incorporated herein by reference.

BE IT FURTHER RESOLVED, if any notifications are to be made to effectuate this Resolution, then the County Clerk is hereby requested to forward a copy of this Resolution to the proper authority.

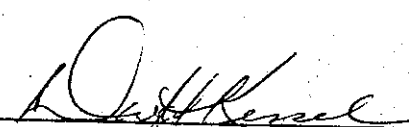
BE IT FURTHER RESOLVED, this Resolution take effect as provided by the Charter of Knox County, Tennessee, the public welfare requiring it.

  
\_\_\_\_\_  
Presiding Officer of the Commission

Date 5/23/94

  
\_\_\_\_\_  
County Clerk

Approved:

  
\_\_\_\_\_  
County Executive

Date 5/26/94

Vetoed:

\_\_\_\_\_  
County Executive

Date \_\_\_\_\_