



Printed on Hammermill Unity DP 100 percent recycled paper,
made exclusively from old de-inked newspapers and magazines.



100% RECYCLED
**50% POST-
CONSUMER FIBER**

SHELBY COUNTY
MUNICIPAL SOLID WASTE REGIONAL PLAN

Prepared under the direction of the
Shelby County Municipal Solid Waste Region Board

June 1994

PART I

INTRODUCTORY MATERIAL

TABLE OF CONTENTS

| | Page |
|--|-------|
| <hr style="border-top: 1px dashed black;"/> | |
| Part I - Introductory Material | |
| Executive Summary..... | viii |
| List of Tables..... | xvi |
| List of Figures..... | xviii |
| List of Initials and Acronyms..... | xix |
| Part II - The Plan | |
| Chapter I. Description of the Municipal Solid Waste Region..... | I- 1 |
| A. General Description..... | I- 1 |
| 1. Location..... | I- 1 |
| 2. Physiography..... | I- 1 |
| 3. Dominant Land Uses..... | I- 2 |
| B. Rationale for Region Formation..... | I- 3 |
| C. Institutional Structure..... | I- 3 |
| 1. Shelby County Municipal Solid Waste Region Board..... | I- 3 |
| 2. Shelby County Municipal Solid Waste Region Technical Advisory Committee..... | I- 5 |
| D. Demographic Profile..... | I- 5 |
| E. Future Growth and Economic Activity..... | I- 6 |
| F. Other Regional Factors Affecting Waste Generation Figures..... | I- 6 |
| 1. Imported/Exported Waste..... | I- 6 |
| 2. Increase in Local Landfill Rates/ Source Reduction, Recycling, and Diversion to Class III and IV Landfills..... | I- 7 |
| 3. Out-of-Region Visitors..... | I- 7 |
| Chapter II. Analysis of the Current Solid Waste Management System for the Region..... | II- 1 |
| A. Waste Stream Characterization..... | II- 1 |
| 1. Waste Volume Estimates for 1991..... | II- 1 |
| 2. Waste Volume Survey for 1993..... | II- 1 |

| | | |
|----|--|-------|
| B. | Waste Collection and Transportation Systems..... | II- 2 |
| C. | Source Reduction and Recycling Systems..... | II- 3 |
| | 1. Municipal Programs - Government Operated..... | II- 3 |
| | 2. Municipal Programs - Privately Operated..... | II- 4 |
| | 3. Other Community-wide Recycling Programs..... | II- 6 |
| | 4. Special Emphasis Recycling Programs..... | II- 7 |
| | 5. Commercial, Industrial, and Institutional Recycling..... | II- 8 |
| D. | Waste Processing, Composting, and Waste-to-Energy/Incineration Systems..... | II- 9 |
| | 1. Waste Processing Facilities..... | II- 9 |
| | 2. Composting/Mulching Facilities and Programs..... | II- 9 |
| | 3. Waste-to-Energy/Incineration Facilities..... | II-11 |
| E. | Disposal Facilities - Landfills..... | II-13 |
| F. | Costs of the Current System..... | II-14 |
| G. | Revenues of the Current System..... | II-14 |
| H. | Public Information and Education Programs..... | II-14 |
| I. | Problem Wastes..... | II-15 |
| | 1. Waste Tires..... | II-14 |
| | 2. Batteries..... | II-15 |
| | 3. Household Hazardous Wastes..... | II-15 |
| | 4. Waste Oil..... | II-16 |
| | 5. Household Appliances ("White Goods")..... | II-16 |
| | 6. Illegal Dumping..... | II-16 |
| | 7. Medical Waste..... | II-16 |
| J. | System Map for Base Year (1993)..... | II-17 |
| K. | Strengths and Weaknesses of Existing System..... | II-17 |
| | 1. General Evaluation..... | II-17 |
| | 2. Strengths..... | II-18 |
| | 3. Weaknesses..... | II-20 |

Chapter III. Growth Trends, Waste Projections, and Preliminary System Structure..... III- 1

| | | |
|----|---|--------|
| A. | Growth Trends..... | III- 1 |
| B. | Waste Projections..... | III- 1 |
| | 1. Annual Waste Projections Through 2003..... | III- 1 |
| | 2. Variance for Waste Projections..... | III- 1 |
| | 3. Adjustments to Waste Projections..... | III- 2 |
| C. | Preliminary System Design..... | III- 3 |
| D. | Evaluation Criteria..... | III- 3 |

Chapter IV. Waste Reduction..... IV- 1

| | | |
|----|---|-------|
| A. | Base-Year Quantity..... | IV- 1 |
| B. | Future Waste Reductions..... | IV- 1 |
| C. | Meeting the Waste Reduction Goal..... | IV- 1 |
| | 1. Short-term Goals..... | IV- 1 |
| | 2. Long-term Goals..... | IV- 2 |
| | 3. Allocation of Waste Reduction Goals..... | IV- 2 |
| | 4. Waste Reduction Strategies..... | IV- 2 |

| | | |
|-------------|--|-------|
| D. | Allocation of Responsibilities..... | IV- 3 |
| E. | Waste Reduction Strategies for Individual Municipalities and Unincorporated Shelby County..... | IV- 3 |
| | 1. Arlington..... | IV- 4 |
| | 2. Bartlett..... | IV- 5 |
| | 3. Collierville..... | IV- 7 |
| | 4. Germantown..... | IV- 8 |
| | 5. Lakeland..... | IV-11 |
| | 6. Memphis..... | IV-12 |
| | 7. Millington..... | IV-15 |
| | 8. Unincorporated Shelby County..... | IV-18 |
| F. | Collection of Data and Preparation of Annual Progress Reports..... | IV-22 |
| | | |
| Chapter V. | Waste Collection and Transportation..... | V- 1 |
| A. | Existing Regional Collection System..... | V- 1 |
| B. | Regional Needs..... | V- 1 |
| C. | Waste Collection/Transportation Goal..... | V- 1 |
| D. | Meeting the Needs..... | V- 1 |
| | 1. Service Areas..... | V- 1 |
| | 2. Collection Facilities and Vehicles..... | V- 2 |
| | 3. Integration with Recycling and Problem Waste Collection Programs..... | V- 2 |
| | 4. Staffing Needs..... | V- 2 |
| | 5. Capital and Annual Operating Budgets..... | V- 2 |
| | 6. Implementation Schedules..... | V- 3 |
| E. | Future Solid Waste Collection Services for Unincorporated Shelby County..... | V- 3 |
| F. | Collection of Data and Preparation of Annual Progress Reports..... | V- 3 |
| G. | Plan Updates..... | V- 3 |
| | | |
| Chapter VI. | Recycling..... | VI- 1 |
| A. | Regional Needs..... | VI- 1 |
| B. | Value to the Community..... | VI- 1 |
| C. | Recommended Actions..... | VI- 2 |
| | 1. Recycling Goals and Objectives..... | VI- 2 |
| | 2. Strategies for Expanding Recycling Programs..... | VI- 2 |
| | 3. Description of Planned Recycling Programs..... | VI- 3 |
| | 4. Description and Location of New Collection Services..... | VI- 4 |
| | 5. Description and Location of Regional Processing System..... | VI- 5 |
| | 6. Cooperation in Market Activities..... | VI- 5 |
| | 7. Interaction with the Office of Cooperative Marketing..... | VI- 5 |
| | 8. Creation/Expansion of Markets..... | VI- 5 |

| | | |
|---------------|---|---------|
| 9. | Education Programs..... | VI- 6 |
| 10. | Staffing Plan..... | VI- 6 |
| 11. | Budget..... | VI- 6 |
| 12. | Funding Plan..... | VI- 6 |
| 13. | Annual Progress Reports..... | VI- 6 |
| D. | Coordination with Private and Non-Profit Sector Programs..... | VI- 7 |
| E. | Implementation Schedule..... | VI- 7 |
| F. | Allocation of Responsibilities..... | VI- 7 |
| G. | Locations of Facilities..... | VI- 8 |
| | | |
| Chapter VII. | Composting, Solid Waste Processing, Waste-to-Energy, and Incineration Capacities..... | VII- 1 |
| A. | Regional Needs..... | VII- 1 |
| B. | Goals..... | VII- 1 |
| C. | Plans for Facilities..... | VII- 1 |
| 1. | Composting Facilities..... | VII- 1 |
| 2. | Solid Waste Processing Facilities..... | VII- 2 |
| 3. | Waste-to-Energy Facilities..... | VII- 2 |
| 4. | Incinerators..... | VII- 2 |
| D. | Future Development of Facilities..... | VII- 2 |
| 1. | EARTH Complex..... | VII- 3 |
| 2. | Bartlett Mulching Facility..... | VII- 3 |
| 3. | BFI North Shelby Landfill Composting Facility..... | VII- 4 |
| 4. | BFI Memphis Recyclery..... | VII- 4 |
| 5. | TR Systems/Allen Fossil Fuel Plant Waste Tire Program..... | VII- 4 |
| E. | Locations of Facilities..... | VII- 4 |
| | | |
| Chapter VIII. | Disposal Capacity..... | VIII- 1 |
| A. | Future Class I Landfills..... | VIII- 1 |
| B. | Regional Demand Versus Regional Supply..... | VIII- 1 |
| C. | Protecting Excess Capacity..... | VIII- 1 |
| D. | Disposal Goals..... | VIII- 2 |
| E. | Planned Landfills..... | VIII- 2 |
| | | |
| Chapter IX. | Public Information and Education..... | IX- 1 |
| A. | Regional Needs..... | IX- 1 |
| B. | Meeting the Needs..... | IX- 1 |
| 1. | Education Goals and Objectives..... | IX- 1 |
| 2. | Target Groups and Audiences..... | IX- 1 |
| 3. | Information To Be Provided..... | IX- 1 |
| 4. | Methods To Be Utilized..... | IX- 2 |
| 5. | Staff and Budget Needs..... | IX- 3 |
| 6. | Funding Plan..... | IX- 4 |
| 7. | Evaluation and Reporting..... | IX- 4 |

| | | |
|---------------|---|---------|
| C. | Implementation Schedule..... | IX- 4 |
| Chapter X. | Problem Wastes..... | X- 1 |
| A. | Household Hazardous Wastes..... | X- 1 |
| 1. | Goal..... | X- 1 |
| 2. | Current Handling and Disposal Practices..... | X- 1 |
| 3. | State Provisions Regarding the Establishment of Urban Household Hazardous Waste Collection Sites..... | X- 1 |
| B. | Other Problem Wastes..... | X- 2 |
| 1. | Waste Tires..... | X- 2 |
| 2. | Waste Oil and Other Used Automotive Fluids..... | X- 4 |
| 3. | Lead-acid Batteries..... | X- 4 |
| 4. | Litter..... | X- 4 |
| Chapter XI. | Implementation: Schedule, Staffing, and Funding..... | XI- 1 |
| A. | System Definition..... | XI- 1 |
| 1. | Recapitulation of Shelby County's Integrated Waste Management System..... | XI- 1 |
| 2. | Waste Flow Diagram..... | XI- 3 |
| 3. | Composite Map..... | XI- 3 |
| 4. | Institutional Structure..... | XI- 3 |
| B. | Statutory and Regulatory Deadlines..... | XI- 3 |
| C. | Composite Implementation Schedule For Major System Milestones..... | XI- 4 |
| D. | Staffing and Training Requirements..... | XI- 4 |
| E. | Budget..... | XI- 5 |
| Chapter XII. | Allocation of Implementation Responsibilities: Plan Adoption and Submission..... | XII- 1 |
| A. | Plan Adoption..... | XII- 1 |
| B. | Adoption By Local Solid Waste Authority..... | XII- 1 |
| C. | Review by Local Planning Agency..... | XII- 1 |
| D. | Submission of Plan..... | XII- 1 |
| Chapter XIII. | Flow Control and Permit Application Review..... | XIII- 1 |
| A. | Flow Control Measures..... | XIII- 1 |
| 1. | Out-of-Region Flow Control..... | XIII- 1 |
| 2. | Intra-region Flow Control..... | XIII- 1 |
| 3. | Decisions of the Board..... | XIII- 1 |
| B. | Permit Application Review..... | XIII- 1 |

Part III - Appendices

| | | |
|----|--|------|
| A. | Legal Documentation and Organization of the Region. And Compliance With Financial Accounting Requirements..... | A- 1 |
| | I. Legal Documentation and Organization..... | A- 1 |
| | 1. Resolution Establishing the Solid Waste Region..... | A- 1 |
| | 2. Description of the Board..... | A- 1 |
| | 3. Solid Waste Authority..... | A- 1 |
| | 4. Technical Advisory Committee..... | A- 1 |
| | II. Compliance With Financial Accounting Requirements..... | A- 1 |
| B. | Documentation for Adjustments to the Base-Year Generation Figures..... | B- 1 |
| | 1. Adjustment of 1989 Generation Data..... | B- 1 |
| | 2. "No Collection" Variance..... | B- 1 |
| | 3. Previous Waste Reductions (1985-1989)..... | B- 1 |
| C. | Public Participation Activities..... | C- 1 |
| | 1. Meetings of the Shelby County Board..... | C- 1 |
| | 2. Public Hearing..... | C- 1 |
| D. | Imports and Exports..... | D- 1 |
| E. | Acceptance Resolutions of Public Bodies and Review by Appropriate Municipal or Regional Planning Commission..... | E- 1 |
| | 1. Resolution of the Shelby County Municipal Solid Waste Region Board..... | E- 1 |
| | 2. Resolution of the Board of County Commissioners of Shelby County..... | E- 1 |
| | 3. Review by Local Planning Agency..... | E- 1 |
| F. | Commitments by Local Solid Waste Collection Companies to Serve Residents of Unincorporated Shelby County..... | F- 1 |
| G. | Household Hazardous Waste Collection Services Correspondence..... | G- 1 |

EXECUTIVE SUMMARY

A. DEFINITION OF THE REGION AND RATIONALE FOR ITS FORMATION

The Shelby County Municipal Solid Waste Region consists of one county-- Shelby County, Tennessee. Shelby County is located in the extreme southwestern portion of the state and is bounded on the north by Tipton County, Tennessee; on the east by Fayette County, Tennessee; on the west by Crittenden County, Arkansas; and on the south by DeSoto and Marshall counties, Mississippi. The 1990 population of Shelby County was 826,330. The 1994 estimated population is 842,417.

There are seven municipalities in Shelby County: Arlington, Bartlett, Collierville, Germantown, Lakeland, Memphis, and Millington. Memphis is the largest city in the county with a population of 610,337 or 74 percent of the county's total population. Approximately 15 percent of the county's population (121,073 persons) resides in unincorporated areas of Shelby County.

Much of Shelby County is urbanized particularly the central and west central portions of the county. Suburban development patterns generally predominate to the east and southeast of Memphis. The northern and northeastern portions of the county retain a rural character.

The State of Tennessee, in its Solid Waste Management Act of 1991, directed that each county in the state become part of an officially designated solid waste management region. Counties may form their own single-county regions or join with other counties to form multicounty regions. Shelby County elected to form its own solid waste region principally due to its singularly urban nature among southwestern Tennessee counties. Because of its urban characteristics, Shelby County's solid waste management needs are considerably different from those of neighboring Tipton and Fayette counties. In 1991, Shelby County produced almost 30 times the amount of solid waste produced in Tipton and Fayette counties combined.

Solid waste issues in Shelby County are addressed by the Shelby County Municipal Solid Waste Region Board. Shelby County Government created the board in 1993 to encourage a more comprehensive and integrated approach to managing solid waste in the county. The board consists of 13 members. The City of Memphis has five representatives on the board with Shelby County Government having two. Each of the six smaller municipalities in the county has one representative.

The Shelby County Board is assisted by a technical advisory committee composed of members of the community offering expertise in related areas.

The Solid Waste Management Act of 1991 requires that each county in the state meet a 25 percent waste reduction goal for municipal solid waste being landfilled in Class I landfills or incinerated. This reduction goal is set for calendar year 1995 and must be reached by December 31, 1995.

In 1989, Shelby County generated approximately 1,362,405 tons of solid waste. This figure represents an annual per capita generation rate of 1.65 tons. Approximately 55 percent of this total was commercial, industrial, and institutional wastes with the remainder being residential wastes (35 percent) and special wastes (ten percent). It is projected that Shelby County will generate 1,396,687 tons of solid waste in 1995. Shelby County must reduce this amount by 25 percent or 349,172 tons.

In addition, each municipality in Shelby County and Shelby County Government for unincorporated Shelby County must also meet a 25 percent waste reduction goal for their areas of jurisdiction. Individual efforts to meet the goal are the responsibility of each individual government. The Shelby County Board will serve as a monitoring agency to ascertain whether local governments are in compliance.

Shelby County will employ five principal components to handle the county's waste in the future: landfilling, diversion, recycling, composting, and source reduction measures. Beginning in 1995, it is anticipated that landfilling will accommodate no more than 75 percent of the solid waste generated in Shelby County each year. Of the remaining 25 percent, diversion will accommodate ten percent, recycling eight percent, composting five percent, and source reduction two percent.

Individual solid waste reduction plans for the seven municipalities and unincorporated Shelby County are presented in Chapter IV.

Each municipality in Shelby County operates its own solid waste collection service or contracts for services with one of two local solid waste management companies-- Browning-Ferris Industries (BFI) or Waste Management of Tennessee-Memphis. Shelby County Government provides no solid waste collection services for residents of unincorporated Shelby County although residents there do have access to collection services offered by BFI, Waste Management, and several smaller private solid waste management companies.

There are two Class I landfills in Shelby County. The North Shelby Landfill is located in the northwestern portion of

the county near Millington. The South Shelby Landfill is located in south central Shelby County just north of the Tennessee-Mississippi state line. Both landfills are owned by BFI. It is anticipated that excess capacity in local landfills will be maintained through and beyond 2003. The City of Memphis plans to develop a 285-acre landfill at its EARTH (Environmental And Resource Technology) Complex in southwestern Memphis. This facility is expected to open in 1996.

A description of all current programs and facilities of the Shelby County solid waste management system is presented in Chapter II.

B. SUMMARY OF REGIONAL NEEDS

A number of regional needs have been identified in this planning study. Among the principal ones are:

1. No Government-Sponsored Collection Services in Unincorporated Shelby County

Each municipality in Shelby County offers solid waste collection and disposal services for its residents. However, Shelby County Government does not offer collection and disposal services for residents of unincorporated Shelby County nor does it require residents to contract independently for services with private companies. The State of Tennessee has directed that each county, by the end of 1995, assure that all county residents have access to solid waste services.

2. Additional Recycling Services Needed

More than 32,500 households in Shelby County are now participating in curbside recycling programs. However, this number represents only 11 percent of the total number of households in Shelby County. Recycling programs are needed for additional, if not all, households in Shelby County.

3. Additional Composting/Mulching Programs Needed

There are two composting/mulching facilities now operating in Shelby County. Additional facilities are needed in Shelby County as well as additional backyard "grasscycling" and composting programs.

4. Household Hazardous Waste Collection Program Needed

Memphis and Shelby County currently have no officially designated programs to collect and dispose of household hazardous waste and other problem wastes. Some local

businesses do provide collection and disposal services for commodities such as used batteries and waste oil. However, Shelby County needs to develop a more comprehensive and coordinated approach to collect and dispose of local household hazardous wastes.

5. Lack of Marketability for Recycled and Composted Products

In Memphis and Shelby County, the market for recyclables is very limited. Currently, only aluminum cans, scrap metal, office paper, and cardboard carry much value in the marketplace. The market for local recyclables needs to be enhanced and expanded.

C. REGIONAL GOALS

Ten solid waste management goals were developed as a part of this planning study. They include:

- > Reduce by 25 percent the amount of Shelby County's solid waste being disposed of in Class I landfills.
- > Assure that first-quality solid waste collection services are available to all residents.
- > Increase recycling opportunities.
- > Increase composting/mulching opportunities.
- > Encourage the development of solid waste processing and waste-to-energy programs and facilities by private industry.
- > Encourage the development and expansion of markets for recycled and composted products.
- > Assure that first-quality solid waste disposal services are available.
- > Assure that landfills in Shelby County have adequate capacities in future years to meet the county's future disposal needs.
- > Increase environmental education programs and information services.
- > Assure that residents of Shelby County have access to collection and disposal services for household hazardous wastes and other problem wastes.

D. LIST OF SYSTEM ELEMENTS INCLUDED IN THE REGIONAL PLAN

The plan notes future facilities and programs for a number of solid waste system elements. Included are:

- > Solid waste collection services.
- > Community recycling programs.
- > Composting/mulching programs and facilities.
- > Class I landfills.
- > Class III and IV landfills (construction/demolition

- landfills).
- > Waste-to-energy programs/incinerators.
 - > Transfer stations.
 - > Facilities for the processing of recyclables.
 - > Educational programs.
 - > Miscellaneous programs and facilities.

Future facilities and programs are depicted in Figure XI-2 in the solid waste plan.

E. DESCRIPTION OF HOW NEW PROGRAMS AND FACILITIES WILL BE COORDINATED WITHIN THE EXISTING SYSTEM

The Shelby County Board has the responsibility to review and issue permits for the construction of new solid waste facilities in the county. Thus, the board will serve as the principal agency overseeing and coordinating the local solid waste management system.

Each municipal government (and Shelby County Government for unincorporated Shelby County) will have the responsibility for developing and funding new solid waste programs and facilities within their own communities. Generally, these municipal programs (such as recycling and composting programs) will be provided only for residents within the corporate limits of each community.

However, the new landfill planned for Memphis' EARTH Complex will be developed with the prospect of accommodating solid waste from throughout Shelby County-- not just solid waste from Memphis. And, the new household hazardous program will likely be a county-wide program. Local officials intend to pursue the idea of all residents of Memphis and Shelby County being served by the State of Tennessee's mobile collection service.

The various agencies providing environmental education in Shelby County will continue to share information with one another and cooperate in promoting local education programs and services.

Shelby County Government has received commitments from two local solid waste management companies to offer solid waste collection services to all households in unincorporated Shelby County.

F. IMPLEMENTATION SCHEDULE

A composite implementation schedule for major system milestones is presented here.

- 1994 > Expand local recycling and composting programs.

- > Expand local public information and education programs.
 - > Achieve a 20 percent reduction in the amount of solid waste being landfilled or incinerated.
- 1995
- > Continue to expand recycling and composting programs.
 - > Continue to expand local public information and education programs.
 - > Establish a household hazardous waste collection service for Memphis and Shelby County.
 - > Assure solid waste services are available to all residents of unincorporated Shelby County.
 - > Achieve and document a 25 percent reduction in the amount of solid waste being landfilled or incinerated.
- 1996
- > Develop and open EARTH Complex Landfill.
- 1997-
2003
- > Offer recycling and composting services to all residents of Shelby County.

G. ESTIMATED TEN-YEAR SYSTEM COSTS

No projections are available for future costs for Shelby County's solid waste management system. Each local government will be responsible for providing the revenues needed to assure quality solid waste services for their constituents. Capital projects will also be developed and funded by the individual local governments.

Private waste management companies will be responsible for generating the resources needed to make improvements in privately owned facilities.

H. ALLOCATION OF RESPONSIBILITIES AMONG LOCAL GOVERNMENTS AND THE PRIVATE SECTOR

Implementing the waste reduction plans for the municipalities will be the responsibility of each municipal government. Shelby County Government will direct the implementation of the waste reduction plan for unincorporated Shelby County. The Shelby County Municipal Solid Waste Region Board will monitor local waste reduction

efforts for compliance with the provisions of the Shelby County plan.

The private sector will continue to cooperate with local governments to provide quality solid waste services for all residents. The expansion or development of private

facilities and programs will be the responsibility of each private entity.

I. DEVELOPMENT OF THE PLAN

This document was prepared by the staff of the Memphis and Shelby County Division of Planning and Development under the direction of the Shelby County Municipal Solid Waste Region Board. Waste reduction plans for the individual communities in Shelby County were prepared by staff of each local government. Employees of Shelby County Government prepared the waste reduction plan for unincorporated Shelby County.

The plan follows instructions developed by the Tennessee State Planning Office in its document "Guidelines for Preparation of a Municipal Solid Waste Regional Plan" and other subsequent directives issued by the Tennessee State Planning Office and the Tennessee Department of Environment and Conservation. The plan is for ten years-- from 1994 through 2003.

The planning process in Shelby County began in April 1993 and concluded in June 1994. The plan was submitted to the Tennessee Department of Environment and Conservation on June 30, 1994.

Many of the statistics in this document were derived from the reports of the 1990 U.S. Census for Shelby County and its municipalities. Some statistics for the individual communities (such as financial and tax data) were provided by the communities themselves. Other specialized statistics were derived from various reports of the Division of Planning and Development and the Memphis Area Chamber of Commerce and from the District Needs Assessment for Shelby County prepared by the Memphis Area Association of Governments.

J. ORGANIZATION OF THE PLANNING DOCUMENT

The document is divided into three parts. Part I consists of a table of contents; an executive summary; and lists of tables, figures, and initials and acronyms.

Part II contains the solid waste plan. It consists of an assessment of the region's solid waste needs and recommendations for addressing those needs. It is divided into 13 chapters. The chapter headings and major subheadings are noted in the table of contents.

Part III is the appendix to the document-- appendices A through G. Subject matter for the appendices is noted in the table of contents.

K. STATUTORY AUTHORITY

The statutory authority requiring preparation of a solid waste plan and describing its contents is found in the following sections of the Tennessee Code Annotated: T.C.A. sections 68-31-813(c); 68-31-814(a); 68-31-814(b)(6); 68-31-815; 68-31-851(b); 68-31-861(f); 68-31-842; 68-31-871(a) and (b); and indirectly, 68-31-866(b); and 49-7-121.

LIST OF TABLES

| Number | Title | Page |
|--------|---|-------|
| ---- | Regional Summary: Demographics..... | I- 8 |
| I- 1 | Population and Population Density, 1990..... | I- 9 |
| I- 2 | Distribution of Total Regional Population, 1990..... | I-10 |
| I- 3 | Distribtuion of the Total Regional Population by Sex and Age, 1990..... | I-11 |
| I- 4 | Distribution of Regional Population by Education (Age 25+), 1990..... | I-12 |
| I- 5 | Distribution by Type of Housing and Occupancy, 1990..... | I-13 |
| I- 6 | Population Projections, 1994-2003..... | I-14 |
| I- 7 | Basic Economic Information, 1990..... | I-15 |
| I- 8 | Non-Agricultural Employment By Sector, 1990..... | I-16 |
| I- 9 | Agricultural Employment, 1990..... | I-17 |
| I-10 | Major Generators of Commercial and Non-hazardous Industrial Waste..... | I-18 |
| I-11 | Institutions Housing More Than 100 Persons..... | I-19 |
| I-12 | Major Health Care Facilities..... | I-20 |
| I-13 | Sources of Local Revenue, 1993..... | I-21 |
| I-14 | Tax Data, 1993..... | I-22 |
| II- 1 | Quantity of Solid Waste Received for Disposal/ Incineration in Calendar Year 1991..... | II-23 |
| II- 2 | Origin of Regional Solid Waste in 1991..... | II-24 |
| II- 3 | Acceptance of Certain Categories of Solid Waste for Disposal or Incineration..... | II-25 |
| II- 4 | Description of the Waste Stream by Materials, 1991..... | II-26 |
| II- 5 | Unmanaged Waste..... | II-27 |
| II- 6 | Existing and Planned Composting/Mulching Facilities..... | II-28 |
| II- 7 | Municipal Solid Waste Incinerators and Waste-to-Energy Facilities..... | II-29 |
| II- 8 | Existing Municipal Solid Waste Landfills, 1992..... | II-30 |
| II- 9 | Existing Landfills Expected to Close Before 2003..... | II-31 |
| II-10 | Planned Expansions and Planned New Landfills Which Will Operate for Ten Years or More..... | II-32 |
| II-11 | Total Existing and Planned Capacity in the Region at the Close of the Next Ten Years..... | II-33 |
| II-12 | Processors of Recyclable Materials..... | II-34 |

| | | |
|--------|--|---------|
| II-13 | Summary of Costs for Solid Waste Management Services, Fiscal Year 1993..... | II-39 |
| II-14 | Summary of Revenues for Solid Waste Services, Fiscal Year 1993..... | II-41 |
| III-1 | Per Capita Solid Waste Generation Rates..... | III- 4 |
| III-2 | Quantity of Solid Waste Requiring Disposal Adjusted for Population Change..... | III- 5 |
| III-3 | Quantity of Solid Waste Requiring Disposal Adjusted for Population Change and Economic Growth..... | III- 6 |
| III-4 | Quantity of Solid Waste Requiring Disposal Adjusted for Population Change, Economic Growth, and Waste Reduction and Recycling..... | III- 7 |
| IV-1 | Population and Quantity of Waste Disposed of at Municipal Solid Waste Disposal Facilities and Incinerators, 1989..... | IV-24 |
| IV-2 | Estimated Quantities of Waste Removed or Diverted from the Waste Stream..... | IV-25 |
| IV-3 | Reduction of the Waste Stream by Materials, 1995..... | IV-26 |
| IV-4 | Reduction of the Waste Stream by Sector, 1995..... | IV-27 |
| IV-5 | Quantity of Solid Waste Requiring Disposal (Adjusted for Population Change) with Waste Reduction Goals..... | IV-28 |
| VIII-1 | Projected Demand and Supply and Identification of Potential Shortfalls or Surpluses in Disposal Capacity..... | VIII- 3 |
| VIII-2 | Projected Net Disposal Capacity..... | VIII- 4 |
| A-1 | Members of the Shelby County Municipal Solid Waste Region Board..... | A- 7 |
| A-2 | Officers of the Shelby County Municipal Solid Waste Region Board..... | A- 9 |
| A-3 | Members of the Shelby County Municipal Solid Waste Region Technical Advisory Committee..... | A-10 |

LIST OF FIGURES

| Number | Title | Page |
|--------|---|-------|
| I-1 | Shelby County Municipal Solid Waste Region..... | I-23 |
| II-1 | Major Elements of the Solid Waste Management System for the Shelby County Region, 1993..... | II-43 |
| XI-1 | Waste Flow Diagram for the Shelby County Region..... | XI- 6 |
| XI-2 | Future Composite Solid Waste Management System for the Shelby County Region..... | XI- 7 |

LIST OF INITIALS AND ACRONYMS

| | |
|---------------|---|
| BFI | Browning-Ferris Industries/BFI Waste Systems-Memphis |
| CII | Commercial, Industrial, and Institutional |
| DPD | Memphis and Shelby County Division of Planning and Development |
| DPW | City of Memphis Division of Public Works |
| EARTH Complex | City of Memphis <u>E</u> nvironmental <u>A</u> nd <u>R</u> esource <u>T</u> echnology Complex |
| FY | Fiscal Year |
| HDPE | High-density Polyethylene |
| HHW | Household Hazardous Wastes |
| KAB | Keep America Beautiful |
| MAAG | Memphis Area Association of Governments |
| MCBC | Memphis City Beautiful Commission |
| MRF | Materials Recovery Facility |
| MSA | Metropolitan Statistical Area |
| NIMBY | " <u>N</u> ot <u>I</u> n <u>M</u> y <u>B</u> ack <u>Y</u> ard" |
| OCM | State of Tennessee Office of Cooperative Marketing |
| PET | Polyethylene Terephthalate |
| SCEIC | Shelby County Environmental Improvement Commission |
| TPD | Tons Per Day |
| TPY | Tons Per Year |
| TVA | Tennessee Valley Authority |

PART II

THE PLAN

CHAPTER I. DESCRIPTION OF THE MUNICIPAL SOLID WASTE REGION

A. GENERAL DESCRIPTION

1. Location

The Shelby County Municipal Solid Waste Region consists of one county, Shelby County, Tennessee. Shelby County is located in the extreme southwestern corner of the state. It is bounded on the north by Tipton County, Tennessee; on the east by Fayette County, Tennessee; on the south by Desoto and Marshall counties, Mississippi; and on the west by Crittenden County, Arkansas. Shelby County's population in 1990 was 826,330 according to the U.S. Census. The 1994 population is 842,417 according to an estimate prepared by the University of Tennessee for the Tennessee State Planning Office. Shelby County has a total land area of 755 square miles and is the largest county in the state in both land area and population.

There are seven incorporated municipalities in the county: Arlington, Bartlett, Collierville, Germantown, Lakeland, Memphis, and Millington. Memphis is the county seat. Memphis is the largest city in the county and state with a 1990 population of 610,337.

The Memphis Metropolitan Statistical Area (MSA) consists of Shelby, Tipton, Fayette, Desoto, and Crittenden counties. The population of the Memphis MSA in 1990 was 1,007,306.

2. Physiography

Shelby County is located in two physiographic provinces: the Gulf Coastal Plain Province and the Mississippi River Valley Province. The larger portion of the county is located in the Gulf Coastal Plain Province in the local subdivision known as the West Tennessee Plain. This area consists of gently rolling hills dissected at various points by small streams and their floodplains.

Approximately ten percent of the county lies within the Mississippi River Valley Province. This low, flat plain has an average altitude of 210 feet above sea level. The hill area terminates at the alluvial plain resulting in 50-to-150-foot high bluffs.

The surface geology of Shelby County consists of alluvial deposits in the floodplains of the Mississippi River and area streams; loess deposits on the upland surfaces; and the Jackson Deposits, a mixture of clay, fine sand, and thin beds of lignite along the tops of the Mississippi River bluffs where the loess has eroded. The loess deposits account for about 80 percent of the land in Shelby County.

The altitude of Shelby County ranges from a maximum of 430 feet in the eastern portion of the county to a minimum of 185 feet near the point where the Loosahatchie River empties into the Mississippi River.

The Mississippi River flows along the county's western border and directly drains much of the western portion of the county. The Loosahatchie River drains northern Shelby County. The Wolf River drains the central portion of the county with Nonconnah Creek and Horn Lake Creek draining the southern portion.

3. Dominant Land Uses

Much of Shelby County is urbanized-- particularly the central and west central portions of the county within the city of Memphis. Memphis has an intensely developed urban core situated on the bluffs overlooking the Mississippi River. Much of Memphis, particularly the northern, southern, and eastern sections of the city, is residential with commercial land uses concentrated in Downtown Memphis and along major thoroughfares of the city. A large industrial and warehousing area is located in the southern portion of the city in the vicinity of Memphis International Airport.

Outside Memphis, Shelby County is dominated by a suburban development pattern particularly to the east and southeast of Memphis in the vicinities of Bartlett, Germantown, and Collierville. Much of the northern, eastern, and northeastern portions of the county in the vicinities of Lakeland, Arlington, and Millington retains a rural character. Here, agricultural lands; principally cotton, soybean, corn, milo, and wheat fields; predominate. Forested land covers about ten percent of the county. These wooded areas are often found in the floodplains of the county's rivers and creeks. The largest contiguous area of forested land in the county is in the northwestern portion in the vicinity of Meeman-Shelby Forest State Park.

B. RATIONALE FOR REGION FORMATION

To encourage cost-efficient solid waste management, the Solid Waste Management Act of 1991 requires the identification and establishment of rational solid waste disposal regions throughout the state. A region may consist of a single county or group of counties.

The bases for defining a rational waste disposal region include: potential commonality, sufficient solid waste volumes to operate in the minimum cost range (approximately 100-plus tons per day), inadequate or excess landfill capacities, geographic location, and political considerations. The Memphis Area Association of Governments (MAAG), the agency in charge of preparing the District Needs Assessment for the Memphis Delta Development District, recommended that Shelby County form its own single-county region.

Shelby County elected to form its own region principally due to its singularly urban nature among southwestern Tennessee counties. Because of its urban characteristics, Shelby County's solid waste needs are considerably different from those of neighboring Tipton and Fayette counties. In 1991, Shelby County produced 1,370,082 tons of solid waste--almost 30 times the amount of solid waste produced in Tipton and Fayette counties combined (46,582 tons).

Of the other three counties in the Memphis Delta Development District, Tipton and Lauderdale counties joined with Haywood County to form one solid waste region. Fayette County elected to form its own single-county solid waste region.

C. INSTITUTIONAL STRUCTURE

1. Shelby County Municipal Solid Waste Region Board

The Shelby County Municipal Solid Waste Region Board provides a comprehensive and integrated approach to managing solid waste in the county. The board consists of 13 members. The City of Memphis has five representatives on the board with Shelby County Government having two. Each of the six smaller municipalities in the county has one representative. The members of the board, jurisdictions represented, and initial terms of office, are listed in Appendix A.

a. Powers, Duties, and Responsibilities

The Shelby County Board is charged with a number of powers, duties, and responsibilities. Among the more important are to: (1) regulate the flow of municipal solid waste generated within the region and from beyond the region, (2) review and

issue permits for the construction of new landfills, incinerators, and other solid waste facilities, and (3) direct the preparation of the regional solid waste plan and future annual reports and updates for the State of Tennessee.

b. Coordination

The board is directed by three officers: chairman, vice-chairman, and secretary. At the board's organizational meeting in August 1993, Benny Lendermon, Director of the City of Memphis Division of Public Works (DPW), was elected chairman. Sam Beach, Director of the Germantown Public Works Department, was elected vice-chairman. Andy Ashford, Recycling Coordinator for the City of Memphis, was elected secretary.

c. Role

The Shelby County Board is responsible for defining and interpreting general policies for local solid waste management issues. However, selecting the various procedures for implementing solid waste programs and initiatives remains the prerogative of each local municipality. It is not the purpose of the board to dictate to each municipality what procedures are required to implement the recommendations of the board.

d. Public Involvement

All meetings of the board are open to the public. Notices of upcoming board meetings are sent to each of the seven city halls in Shelby County and the Shelby County Administration Building at least one week prior to the meeting. All board meetings are held at the Agricenter International, a centrally located site and easily accessible to all parts of Shelby County.

A public hearing of the solid waste plan was held June 6, 1994, at Agricenter International. A notice of the public hearing was placed in The Commercial Appeal on May 22 providing two weeks' notice for those interested in examining the draft of the Shelby County Municipal Solid Waste Regional Plan. Copies of the plan were placed in the seven city halls, the Shelby County Administration Building, and the Main Library of the Memphis and Shelby County Public Library and Information Center.

Twenty-five people attended the public hearing

representing a broad spectrum of interests in Shelby County. A number of questions and comments were received at the public hearing. The minutes of the public hearing and a list of attendees appears in Appendix C.

2. Shelby County Municipal Solid Waste Region Technical Advisory Committee

To assist in the preparation of Shelby County's plan and to provide technical advice and assistance, the Shelby County Board created a technical advisory committee of persons who have knowledge and expertise in a variety of fields related to solid waste management and planning. Nominations for the committee were made and approved by the board at its January 1994 meeting. A list of the members of the technical advisory committee and agencies represented is included in Appendix A.

D. DEMOGRAPHIC PROFILE

The 1990 population of Shelby County was 826,330. The 1994 estimated population of Shelby County is 842,417 representing an increase of 1.9 percent over the county's 1990 population. The 1990 population figure represents an 6.3 percent increase over Shelby County's population in 1980 (777,113).

The median age in the county in 1990 was 31.5 years. Shelby County had a total of 303,571 households in 1990, a 12.8 percent increase over Shelby County's total number of households in 1980 (269,186 households). The county's average population density was 1,095 persons per square mile in 1990.

Shelby County had a total of 327,796 housing units in 1990. Approximately 66.8 percent of the housing units were single-family. Renter-occupied units totaled 123,081 or 40.5 percent of the total in 1990.

In 1990, the median household income in Shelby County was \$27,132. Approximately 17.7 percent of the county's population lived below the poverty level in 1990, a decrease from the 19.0 percent living below the poverty level in 1980.

Employed persons in Shelby County totaled 376,899 in 1990. The largest employment sector was service occupations at 34.3 percent followed by retail/wholesale trade at 23.5 percent, manufacturing at 12.7 percent, and transportation/communication/utilities occupations at 11.6 percent.

More detailed demographic information is presented in tables I-1 through I-9 located at the back of Chapter I.

E. FUTURE GROWTH AND ECONOMIC ACTIVITY

It is expected that Shelby County's population will continue to increase through the remainder of the 1990s and into the first decade of the 21st Century. The population in Shelby County in 2003 is projected to be 873,531. Table I-6 lists the projected population for Shelby County each year through 2003.

Likewise, employment in Shelby County is expected to increase through 2003. It is anticipated that the largest gains in local employment in the next ten years will be in the services, transportation/communications/utilities, and retail trade sectors. Reliable employment projections for Shelby County through 2003 have not been developed although it is anticipated that new employment projections will be available some time in 1994.

Economic activity in Shelby County is expected to grow at a rate of 3.2 percent annually through 2003 according to projections prepared by the University of Tennessee Center for Business and Economic Research.

As population, employment, and economic activity in the county increase, it is certain that additional demands will be placed on the local landfills to accommodate the growing solid waste needs of the county. However, because Shelby County's growth is expected to be slow to moderate and because the county expects to maintain excess disposal capacity in local landfills through 2003, increases in local population, employment, and economic activity are not anticipated to pose a threat to local disposal capacity in the next ten years.

F. OTHER REGIONAL FACTORS AFFECTING WASTE GENERATION FIGURES

1. Imported/Exported Waste

In 1993, Browning-Ferris Industries/BFI Waste Systems-Memphis (BFI), a local waste collection company and the owner and operator of the two existing Class I landfills in Shelby County, received approximately 998,677 tons of solid waste at its landfills. Of this amount, 54,404 tons were generated outside Shelby County but disposed of here by BFI. In 1993, Waste Management of Tennessee-Memphis, another local waste collection company, imported 137 tons of out-of-county waste and disposed of it in BFI's landfills.

In 1993, Waste Management received 108,091 tons of solid waste at its transfer station in Shelby County. Of this amount, 6,286 tons were produced outside Shelby County. In 1993, Waste Management transported 101,805 tons of waste produced in Shelby County to its company-owned landfill near Houston, Mississippi.

In 1993, ECO Services, another local collection company, disposed of 6,696 tons of waste generated in Shelby County at out-of-county landfills.

If BFI and Waste Management continue to maintain and solicit contracts with out-of-county clients and the amount of imported solid waste increases dramatically, this could have significant impacts on the capacity of landfill space in Shelby County.

However, if the amount of solid waste exported to other counties or states by Waste Management and ECO Services increases, this factor would be beneficial in protecting the long-term capacities of landfills in Shelby County.

2. Increase in Local Landfill Rates/Source Reduction, Recycling, and Diversion to Class III and IV Landfills

In July 1991, BFI virtually doubled the disposal fees at its two local landfills. As a result, BFI estimated that an approximate 30 percent drop occurred in volumes of waste being disposed of after July. Local solid waste officials have speculated that this waste was diverted from the Class I landfills by a combination of source reduction measures, recycling programs, or diversion to Class III and IV landfills. Additional increases in landfill fees could again affect the volumes of waste being landfilled locally.

3. Out-of-Region Visitors

Memphis and Shelby County received approximately 3.5 million out-of-county visitors in 1992 according to the Memphis Convention and Visitors Bureau. The bureau expects that the number of visitors to Memphis and Shelby County will increase annually through 2003. No estimates are available for the amount of solid waste visitors to Shelby County produce, but with its large numbers of annual visitors, Shelby County should take into consideration the additional waste produced.

Regional Summary: Demographics

| Region | 1990 Population | Land Area |
|---------------|--------------------|------------------|
| Shelby County | 826,330 | 755 Square Miles |

Table I-1
Population and Population Density, 1990
Shelby County

| Area in Square Miles | Population | Average Density Population/Square Miles |
|-------------------------|------------|--|
| 755 | 826,330 | 1,094.5 Persons |

Table I-2
Distribution of Total Regional Population, 1990
Shelby County

| Urban Population | Percent | Rural Population | Percent |
|---------------------|---------|---------------------|---------|
| 793,545 | 96.0 | 32,785 | 4.0 |

Table I-3

Distribution of Total Regional Population by Sex and Age, 1990
 Shelby County

| Age | Total | Male | % | Female | % |
|-------|---------|---------|------|---------|------|
| 0- 4 | 66,545 | 34,059 | 4.1 | 32,486 | 3.9 |
| 5-17 | 159,762 | 81,556 | 9.9 | 78,206 | 9.5 |
| 18-44 | 371,942 | 180,463 | 21.8 | 191,479 | 23.2 |
| 45-64 | 141,746 | 64,944 | 7.9 | 76,802 | 9.3 |
| 65+ | 86,335 | 32,592 | 3.9 | 53,743 | 6.5 |
| Total | 826,330 | 393,614 | 47.6 | 432,716 | 52.4 |

Table I-4

Distribution of Regional Population by Education (Age 25+), 1990
Shelby County

Educational Level

| | |
|----------------------------|----------------|
| Grade 8 or Less | 45,674 |
| High School (1-4) | 218,790 |
| College (1-4) | 207,542 |
| Post-Graduate/Professional | 36,245 |
| Total | <u>508,251</u> |

Total Number of Households in Region: 303,571

Table I-5

Distribution by Type of Housing and Occupancy, 1990

Shelby County

| Type of Unit | Total Persons | Persons in Occupied Units | Owned | Rented |
|----------------------|----------------|---------------------------|----------------|----------------|
| Single-Family | | | | |
| 1, Detached | 201,598 | 192,842 | 165,815 | 27,027 |
| 1, Attached | 17,526 | 15,670 | 6,678 | 8,992 |
| Multifamily | | | | |
| 2 | 11,806 | 10,732 | 1,259 | 9,473 |
| 3- 4 | 16,557 | 14,490 | 661 | 13,829 |
| 5- 9 | 29,685 | 25,579 | 666 | 24,913 |
| 10-19 | 23,096 | 19,747 | 383 | 19,364 |
| 20-49 | 9,766 | 8,502 | 262 | 8,240 |
| 50+ | 10,528 | 9,343 | 555 | 8,788 |
| Institutional | 23,245 | 0 | 0 | 0 |
| Mobile Home/Trailer | 4,082 | 3,739 | 2,748 | 991 |
| Other | 3,152 | 2,927 | 1,463 | 1,464 |
| Total | 351,041 | 303,571 | 180,490 | 123,081 |

Table I-6
 Population Projections, 1994-2003
 Shelby County

Estimated Regional Population, 1993: 838,376

| Year | Projected Population | Change | % Change |
|------|-------------------------|--------|----------|
| 1994 | 842,417 | | |
| 1995 | 846,477 | +4,060 | .48 |
| 1996 | 850,557 | +4,080 | .48 |
| 1997 | 854,656 | +4,099 | .48 |
| 1998 | 858,776 | +4,120 | .48 |
| 1999 | 862,915 | +4,139 | .48 |
| 2000 | 867,032 | +4,117 | .48 |
| 2001 | 869,289 | +2,257 | .26 |
| 2002 | 871,291 | +2,002 | .23 |
| 2003 | 873,531 | +2,240 | .26 |

Table I-7
Basic Economic Information, 1990
Shelby County

| | |
|---------------------------------------|-----------------|
| Population | 826,330 |
| Metropolitan Statistical Area | Memphis |
| Total Employment | 376,899 |
| Total Earnings | \$7,620,976,000 |
| Per Capita Income | \$13,330 |
| Percent Population Below Poverty Line | 17.7 Percent |

Table I-8
 Non-Agricultural Employment By Sector, 1990
 Shelby County

| Sector | Total Employed | Percent of Total |
|---------------------------------|-------------------|---------------------|
| Manufacturing | 47,775 | 12.7 |
| Construction | 18,529 | 4.9 |
| Trade | 88,425 | 23.5 |
| Finance | 24,446 | 6.5 |
| Services | 129,278 | 34.3 |
| Government | 20,373 | 5.4 |
| Transportation/Public Utilities | 43,659 | 11.6 |
| Mining | 149 | .0 |
| Total | 372,634 | 98.9 |

Table I-9
Agricultural Employment, 1990
Shelby County

4,265

1.1 Percent of Total Employment in Shelby County

Table I-10

Major Generators of Commercial and Non-hazardous Industrial Waste
Shelby County

| Screening Criteria Applied | Number of Generators | Estimated Total Quantity of Waste |
|----------------------------------|----------------------------|--------------------------------------|
| 1,000 or More Employees | 46 | Not Available |

Table I-11
Institutions Housing More Than 100 Persons
Shelby County

| Total Number of Institutions | Total Number of Students, Prisoners, Residents | Estimated Quantity of Waste Generated |
|---------------------------------|--|--|
| 9* | 21,521 | Not Available |

* Includes 5 Penal Institutions and 4 Colleges/Universities.

Table I-14
Tax Data, 1993
Shelby County

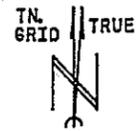
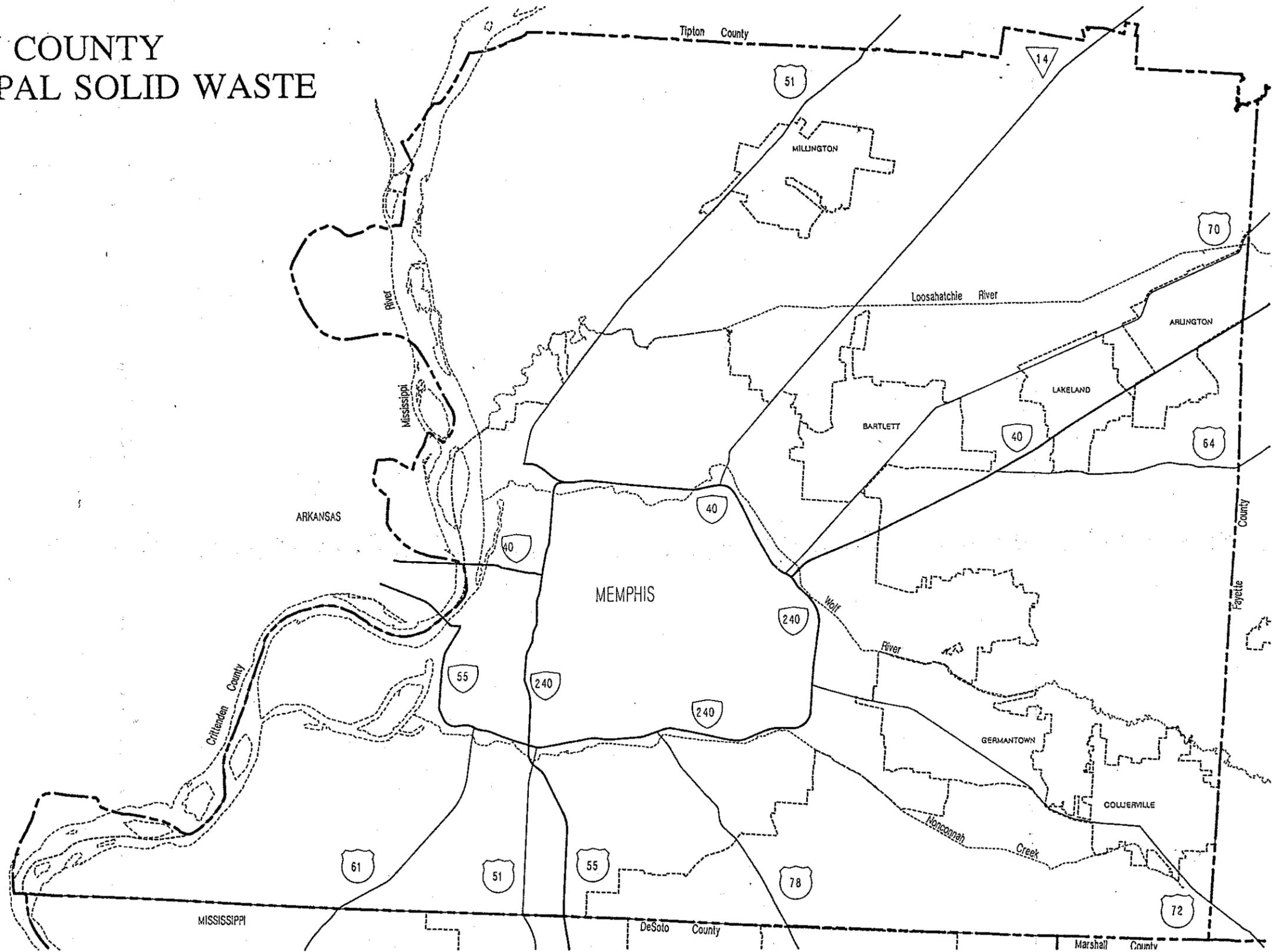
| County/ Municipality | Total Assessed Property Value | Total Property Tax Revenue | Total Sales Subject to Sales Tax |
|-------------------------|--|-------------------------------------|---|
| Shelby County | \$7,495,057,580 | NA | NA |
| Arlington | 19,938,457 | \$ 239,261 | NA |
| Bartlett | 332,327,285 | 4,424,015 | \$ 204,595,444 |
| Collierville | 210,396,350 | 2,852,792 | NA |
| Germantown | 486,313,955 | 6,555,975 | NA |
| Lakeland | 26,254,775 | NA | 33,700,000 |
| Memphis | 5,926,785,000 | 62,540,216 | 5,559,000,000 |
| Millington | 51,460,000 | 566,070 | NA |

-----o-----

| County/ Municipality | Total Local Sales Tax Revenue | Registered Vehicles | Total Wheel Tax Revenue |
|-------------------------|--|------------------------|----------------------------------|
| Shelby County | NA | 621,630 | \$13,000,690,000 |
| Arlington | NA | * | 0 |
| Bartlett | \$ 2,376,529 | * | 367,654 |
| Collierville | 1,659,886 | * | 308,218 |
| Germantown | 3,102,646 | * | 0 |
| Lakeland | 372,033 | * | 0 |
| Memphis | 64,322,329 | * | 0 |
| Millington | 1,376,739 | * | 0 |

* County Only.

SHELBY COUNTY MUNICIPAL SOLID WASTE REGION



SHELBY COUNTY MUNICIPAL SOLID WASTE REGIONAL PLAN

Memphis and Shelby County
Division of Planning and Development
Geographic Information System

Scale: 1" = 18,057'

Date: 05/20/94

FIGURE I-1

CHAPTER II. ANALYSIS OF THE CURRENT SOLID WASTE MANAGEMENT SYSTEM FOR THE REGION

A. WASTE STREAM CHARACTERIZATION

1. Waste Volume Estimates for 1991

In 1991, Shelby County generated an estimated 1,370,082 tons of solid waste. Much of the waste was disposed of in local Class I landfills. No municipal waste was incinerated locally in 1991 although some medical waste and yard waste were disposed of in that manner. With a population of approximately 830,353 in 1991, the amount of solid waste generated per capita in Shelby County in that year was 1.65 tons.

BFI, the owner and operator of the two Class I landfills in Shelby County, estimated that 35 percent of all waste disposed of in the county in 1991 was residential waste. Commercial and institutional uses accounted for 30 percent of the total. Non-hazardous industrial uses accounted for 25 percent with "special" wastes (such as asbestos, sludge, chemicals, etc.) accounting for the remaining ten percent.

Table II-2 lists the estimated tons of waste disposed of in Shelby County in 1991 by type of material. These figures reflect an assumption of local conditions by applying national percentages to local disposal figures. No local study has been conducted to determine if Shelby County's conditions differ significantly from the national norm but local solid waste officials believe that Shelby County's figures are comparable.

2. Waste Volume Survey for 1993

In Spring 1994, the City of Memphis Division of Public Works developed a survey for local landfill operators, waste collection companies, and recycling processors to determine more accurate and more specific waste volume figures for Shelby County. The survey found that 1,384,786 tons of waste were produced in Shelby County in 1993. Of this total, 1,052,638 tons were disposed of in the two Class I landfills and 112,149 tons of solid waste were recycled by local recycling processors. It was estimated that approximately 200,000 tons of waste were disposed of in Class III and IV landfills in 1993 while approximately 20,000 tons

were diverted from Class I landfills by other reduction measures.

In 1993, BFI received approximately 998,677 tons of solid waste at its two Class I landfills. Of this amount, 54,404 tons were produced outside Shelby County but disposed of here by BFI. In 1993, Waste Management also imported 137 tons of out-of-county waste and disposed of it in BFI's landfills.

In 1993, Waste Management received 108,091 tons of solid waste at its transfer station in Shelby County. Of this amount, 6,286 tons were produced outside Shelby County. In 1993, Waste Management transported 101,805 tons of waste produced in Shelby County to the Knox Landfill near the city of Houston in Chickasaw County, Mississippi. Waste Management is the owner and operator of the Knox Landfill, 108 miles southeast of Memphis.

In 1993, the survey showed that ECO Services disposed of 6,696 tons of waste generated in Shelby County at out-of-county landfills.

B. WASTE COLLECTION AND TRANSPORTATION SYSTEMS

There are seven incorporated municipalities in Shelby County and each municipality operates its own solid waste collection/transportation system or contracts for services with one of two local waste management companies-- BFI or Waste Management.

Memphis operates its own collection system. The City of Memphis Division of Public Works collects solid waste from single-family and duplex residences in Memphis as well as from a small number of multifamily, commercial, and institutional operations in the city. DPW collects approximately 36 percent of the total amount of waste collected in the city. Most multifamily, commercial, industrial, and institutional operations in Memphis contract with BFI; Waste Management; or one of several smaller waste collection companies: ECO Services, Safety Lights, or Industrial Waste Services. DPW disposes of its waste at the two landfills owned by BFI in Shelby County.

Arlington contracts for residential waste collection and disposal with Waste Management. Germantown and Lakeland contract with BFI for residential waste collection and disposal. Bartlett and Collierville contract with BFI for disposal services only-- these cities operate their own collection services collecting primarily residential waste with some commercial waste collected also. In all of these cities, most of the commercial, industrial, and

institutional waste is collected by private waste collection companies.

The City of Millington provides residential collection services as well as commercial, institutional, and industrial collection services for businesses located within the city limits. Millington's waste is disposed of at BFI's North Shelby Landfill.

In unincorporated Shelby County, most residents and businesses contract privately with BFI, Waste Management, ECO Services, Safety Lights, or Industrial Waste Services. A few residents may contract with one of two smaller private waste haulers: Mayfield Garbage Service or Fisher's Garbage Service. At this time, Shelby County Government has no requirement that residents and businesses in unincorporated Shelby County contract for collection services with any company. Residents and businesses in the county are free to dispose of their own wastes in any legal manner.

C. SOURCE REDUCTION AND RECYCLING SYSTEMS

Source reduction is encouraged and promoted in the public education and information programs offered by the Shelby County Environmental Improvement Commission (SCEIC), Memphis City Beautiful Commission (MCBC), the Recycling Office of the Memphis Division of Public Works, and the city beautiful/environmental commissions and public works departments of the smaller municipalities. Students, businesses, government workers, and the general public are the principal groups targeted for education. Source reduction is especially emphasized in the environmental curricula programs offered by the SCEIC and MCBC to city, county, and private elementary school students.

There is a wide array of recycling programs throughout Shelby County. The section below describes the larger, community-wide, recycling programs in the county. Community recycling programs are indicated in Figure II-1 at the end of this chapter.

1. Municipal Programs - Government Operated

a. Collierville

The Town of Collierville sponsors a curbside recycling program with approximately 5,400 single-family residences eligible to participate. The program began as a pilot project in four neighborhoods in 1991 and expanded to serve the entire town in March 1994. The program collects green, brown, and clear glass; HDPE plastics; newspapers; tin cans; and aluminum cans.

Collection is once a week. Eighteen-gallon recycling bins are used to collect the items. Participation rates averaged 68 percent for the four pilot neighborhoods.

b. Memphis

The Memphis recycling program began as a pilot project in 1990 for 695 households in the Scenic Hills neighborhood. Since 1990, the program has expanded to 14 neighborhoods throughout the city. Approximately 11,500 households are now eligible to participate in this voluntary curbside program. Approximately 95 percent of the eligible households live in single-family dwellings. The program collects clear, green, and brown glass bottles and jars; aluminum and steel food and beverage containers; PET 1 and HDPE 2 plastic containers; and newspapers. Residents are issued an 18-gallon recycling bin and an instructional brochure.

Participating homes receive once-a-week garbage and once-a-week recycling services as opposed to the customary, twice-weekly garbage collection service for city residents not on recycling routes. The bins are placed at the curb by residents and are emptied by DPW personnel. The city has a contract with BFI to accept its recyclables. The recyclables are transported to BFI's processing center, the Memphis Recyclery, in a comingled state where they are sorted, packaged, and shipped to buyers. The overall average participation rate is 60 percent.

The city has plans to expand the recycling program as budget and market allow. In the Fiscal Year 1995 budget, the city is proposing to add 10,000 households to the curbside program every two months until each household in the city is offered services.

Memphis began a specialized program in 1993 to recycle large household appliances. Appliances are collected on an "as needed" basis. Since the beginning of the program, 4,200 tons of appliances have been collected and recycled.

2. Municipal Programs - Privately Operated

a. Arlington

The Arlington recycling program began in 1990 and offers curbside recycling services to all 356

households in the city. The recycling program is managed by Waste Management, the town's solid waste collector. The program recycles newspapers; aluminum cans; plastic bottles; and clear, green, and brown glass. Waste Management furnishes an 18-gallon recycling bin.

Waste Management collects recyclables once a week. The recyclables are separated at the curb into compartmentalized truck bins.

Most of the eligible/participant households are single-family except for 30 apartment units. The average participation rate for Arlington is 52 percent.

Arlington plans to add other recyclables to its program in the future.

b. Germantown.

The Germantown recycling program began in 1992 and offers recycling services to all (approximately 11,100) households in the city. The program is managed by BFI, the city's solid waste collector. The program collects green, brown, and clear glass; HDPE plastics; metal cans; aluminum cans; and newspapers. Collection services are once a week. BFI furnishes an 18-gallon bin which is placed at the curb by residents.

BFI collects the recyclables comingled and separates the articles at the Memphis Recyclery.

Approximately 95 percent of all eligible/participant households are single-family households. The overall average participation rate for Germantown is 68 percent.

Germantown's recycling program has been so successful that in the last two years, the city has twice lowered the monthly garbage fee charged to residents. In January 1994, the city lowered the fee from \$10.50 to \$9.50 for single-family households and from \$6.30 to \$5.70 for multifamily households. Germantown officials approved the fee reduction in response to the savings the city has accrued from lower landfill costs.

Germantown plans to add other recyclable items, such as automotive products and aerosol cans, to its collection program in the future.

c. Lakeland

The Lakeland program began in 1991 and offers curbside recycling services to all 525 households in the city. Most of the households are single-family residences; however, a mobile home park with 135 households is also included in the recycling program. The program is managed by BFI, the city's solid waste collector. The program collects aluminum cans; newspapers; miscellaneous paper; plastics; and clear, green, and brown glass. Collection services are once a week. BFI furnishes 18-gallon bins which are placed at the curb by the residents. The items are separated at the point of collection. The average participation rate for the program is 40 percent.

3. Other Community-wide Recycling Programs

a. Bartlett

The City of Bartlett sponsors a voluntary drop-off recycling center for area residents at the Kroger Food Store in the Town Center Shopping Center in Bartlett. The center collects cardboard; newspapers; aluminum cans; clear, brown, and green glass; and HDPE-Clear, HDPE-Colored, and PET plastics. The recyclables are separated at the point of collection. The program began in 1992.

The recycling center is open Monday through Friday from 9:00 a.m. to 7:00 p.m. and on Saturdays from 9:00 a.m. to 5:00 p.m.

Approximately 12,000 area households are eligible to participate in the program. Businesses in the city are also allowed to deposit their recyclables at the collection point. The average participation rate for city households is estimated at five percent.

b. Private Recycling Programs in Memphis and Unincorporated Shelby County

BFI serves approximately 37,000 subscribers in Shelby County with waste collection services. Approximately 27,000 of these are residential customers with the remainder commercial, industrial, and institutional customers. BFI offers curbside recycling services to its residential customers. Approximately 2,700 residential customers, or about ten percent, subscribe to the recycling services.

Recyclables are collected once a week. BFI accepts newspapers, aluminum cans, steel cans, cardboard, glass, and plastics in 18-gallon containers.

Most of BFI's recycling subscribers live in unincorporated areas of Shelby County such as Countrywood, Cordova, and Hickory Hill. Harbortown, a private residential community in Memphis, is also served.

Waste Management also offers recycling as a part of its collection services for subscribers.

c. Memphis Naval Air Station at Millington

The Memphis Naval Air Station began its recycling program in 1989 and provides services to all activities at the base. The program collects aluminum cans, tin, scrap metal, cardboard, computer paper, newspaper, wooden pallets, glass, and HDPE plastics. The entire base population (approximately 25,000 persons including military personnel, military dependents, and civilian workers) is eligible to participate in the recycling program. This includes the 964 family housing units on base.

The program uses both a building-to-building collection service and drop-off collection bins. Approximately 700 tons of recyclables are collected each year.

The City of Millington collects cardboard from local commercial and industrial businesses and transports it to the base for recycling.

4. Special Emphasis Recycling Programs

a. City of Memphis Schools

The Memphis Board of Education provides an aluminum can collection program at 32 public and private schools in the city. This program, known as the Memphis Recycling Project, is in cooperation with Seessel's Supermarkets, Waste Management, Coca-Cola Bottling Company of Memphis, Smurfit Recycling, and the City of Memphis. Aluminum cans are collected from containers provided by Coca-Cola. City personnel haul the cans to Smurfit Recycling for processing.

b. City of Memphis Telephone Directory Recycling Program

Each year, the City of Memphis sponsors two telephone book collection campaigns, known as the Rebook Program, to divert the 1,600 tons of telephone directories delivered to Memphis residents annually. The city, in cooperation with nine businesses and agencies, has established a number of telephone directory collection points. Plans are being made to expand this program to other municipalities in Shelby County.

5. Commercial, Industrial, and Institutional Recycling

a. In-house Recycling Programs

Many private companies in Memphis and Shelby County sponsor in-house recycling and/or source reduction programs. These include a wide range of prominent businesses such as Dupont, First Tennessee Bank, Sharp Manufacturing, The Commercial Appeal, Schering-Plough, Federal Express, Kellogg, McDonald's, Wendy's, Buckman Laboratories, South Central Bell, WKNO-TV, Kroger Food Stores, Smith and Nephew Richards, Methodist Hospitals, and Burger King-- to name only a few.

Many businesses recycling in the Memphis area began or expanded their recycling/source reduction programs in 1991 when BFI increased disposal fees at the two local landfills.

It is believed by local solid waste officials that corrugated cardboard represents the commodity being recycled most by area businesses. High, low, and mixed grades of paper products; used oil; and metals such as steel, aluminum, brass, and copper are also commonly recycled by local businesses. The Commercial Appeal buys newsprint with high recycled content for its editions and uses a soy-based ink in its printing process to reduce the amount of waste solvent.

b. Local Recyclables Processors

More than 40 private, for-profit, processing companies operate in Shelby County and accept a variety of recyclables from the public. A list of these companies with their addresses and what recyclables they accept appears in Table II-12. The list is as complete as possible. It was compiled by combining a public service listing of local recyclers printed each week in The Commercial Appeal, recyclers advertised in the Greater Memphis Telephone Directory's "Yellow Pages", and recyclers included in MAAG's District

Needs Assessment.

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

1. Waste Processing Facilities

BFI opened its \$1.5 million Memphis Recyclery in 1991 to serve the Memphis metropolitan area. The facility, located at 1245 Morehead Avenue in North Memphis, is the largest "buy-back" center in the Mid-South. It accepts newspapers, computer paper, aluminum cans, steel cans, cardboard, glass, and plastics and pays for all recyclables except newspapers, steel cans, and glass. Design capacity of the facility is approximately 100 tons of waste per day.

The Memphis Recyclery receives recyclables from municipal recycling programs in Memphis, Germantown, and Lakeland as well as recyclables from local companies and individuals.

Other companies in Shelby County also offer waste processing facilities for the public. Among the larger ones are Dixie Recycling, Memphis Waste Paper, H. Blockman and Company, and Smurfit Recycling. These companies and the locations of their facilities are shown in Figure II-1.

2. Composting/Mulching Facilities and Programs

The principal composting/mulching programs now operating in Shelby County are briefly described below. Locations of the programs are shown in Figure II-1.

a. EARTH Complex

The City of Memphis Division of Public Works operates a composting facility at the EARTH (Environmental And Resource Technology) Complex in southwestern Memphis. (For more information on the EARTH Complex, see Section E of this chapter.) The program combines yard waste, mostly grass clippings and leaves collected by Memphis Light, Gas, and Water Division and the Memphis Park Commission, with sewage sludge from the T.E. Maxson Wastewater Treatment Plant located at the EARTH Complex to produce a mixture used for landscaping in the city's parks. Approximately 3,600 tons of yard wastes were composted in 1992.

The city plans to expand its composting program by purchasing additional specialized equipment.

adding other types of organic wastes, and increasing the current service area. Memphis also plans to establish a pilot backyard composting program for residents in 1994.

The ice storm of February 1994 produced an enormous amount of organic debris in Memphis and throughout the county. It was estimated by local officials that this one storm produced 2.5 million cubic yards of organic debris, more debris than the region normally produces in ten years or more. The debris was bid and contracted to private companies for grinding into mulch. The mulch was then hauled away for the use of local mulch dealers. It is expected that Memphis' mulching operation will continue on a more limited scale after the ice storm clean-up has been completed.

b. Bartlett Mulching Program

The City of Bartlett accepts yard waste, leaves, brush, Christmas trees, and other organic wastes from area residents, grinds the material, and ages the resulting chips for use as mulch. The mulch is distributed to city residents free of charge at a facility at 6222 Old Brownsville Road. In 1993, Bartlett processed approximately 2,200 tons of waste in its mulching program. Bartlett plans to purchase additional land for the mulching site and to buy a new, \$240,000 mulch-grinding machine to expand the program.

c. Germantown "Grasscycling" and Composting Program

The City of Germantown, through its Environmental Commission, sponsors a summertime "grasscycling" program to encourage residents to leave grass clippings on their lawns for mulch. The program, which began in 1991, uses incentives such as free fertilizer and recognition by signs placed in the yards of participating households. Germantown officials estimate that grasscycling saves the city \$10,000 in hauling and disposal costs during a single cutting season.

In 1993, the city distributed 350 bio-degradable compost bins to residents and established a demonstration composting exhibit at a public park for citizens to view.

Germantown plans to distribute additional composting bins to city residents and has discussed offering rebates to residents who purchase the bins.

d. Memphis "Chipping of the Green" Christmas Tree Project

The City of Memphis, through the Memphis City Beautiful Commission and the Division of Public Works, sponsors the "Chipping of the Green" project to produce mulch from shredded Christmas trees. The project is co-sponsored by several civic organizations and private companies. The project, which began in 1991, shredded approximately 20,000 Christmas trees in January 1994 with 450 tons of mulch distributed free to local residents. The city offers a special Christmas tree collection day for residents of all single-family and duplex housing units in Memphis. The mulch, along with a free pine tree seedling, is distributed on the parking lot of the Children's Museum of Memphis on the first Saturday in January following New Year's Day.

e. Shelby County-Shelby Forest Christmas Tree Project

This program began in 1991. It collects thousands of Christmas trees each year (approximately 12,000 in 1994) from residents of suburban Shelby County communities for use at Meeman-Shelby Forest State Park near Millington. Sections of the park have highly erodible soils and the trees, along with riprap, are placed in washes and gullies to serve as barriers against further erosion.

3. Waste-to-Energy/Incineration Facilities

a. Waste-to-Energy Facilities

There is one waste-to-energy project operating in Shelby County. The Allen Fossil Fuel Plant, owned and operated by the Tennessee Valley Authority (TVA), is participating in a pilot project that uses chipped tires to produce a fuel additive. The project is operated by TR Systems, Inc. TR Systems installed a \$1 million automatic tire storage and handling facility adjacent to the Allen facility.

Waste tires are delivered whole to the TR Systems facility and are chipped on site. The procedure removes metal from the tires and chips the tires into one-inch pieces. The chips are then transported to the Allen plant. TVA "burns" the tire chips in a 3,000-degree processing unit to produce a fuel additive for boilers. The fuel is a mixture of five percent tire chips to 95 percent coal.

The program accepts waste tires from Shelby County, other counties in Tennessee, and from Mississippi and Arkansas.

The program began in May 1992 and was designed for three testing phases. The program is now in its final testing phase which is expected to process approximately three million waste tires or 25,000 to 30,000 tons of tire chips. The pilot program will continue through Spring 1994 at which time a decision will be made whether to continue and expand the program or terminate it. Initial test results have indicated that the program has caused no significant operational or environmental problems. Program administrators say that adding tires to coal-fired plants may actually lower the amount of pollutants and will offer a tremendous opportunity to dispose of millions of waste tires. The location of this program is shown in Figure II-1.

b. Incinerators

In Shelby County, there are no incinerators designed specifically for the disposal of municipal solid waste. However, there are two incinerators used to dispose of medical/pharmaceutical waste, one air curtain incinerator for the disposal of chipped brush and yard waste, and one incinerator used to dispose of small animal carcasses. (See Figure II-1.)

One medical waste incinerator is owned and operated by Health Management, Inc., a division of BFI. It is located in Southwest Memphis at 540 Rivergate Road. The second medical waste incinerator is a gas-fired incinerator located at 1040 Madison Avenue in Midtown Memphis. It is owned and operated by the Mid-South Regional Blood Center.

The air curtain incinerator is owned by Wood Processing, Inc. Wood Processing contracts with the City of Memphis to dispose of a small portion (approximately seven percent in 1993) of the city's brush and yard wastes. This incinerator is located at 5093 Getwell Road.

The incinerator used to dispose of animal carcasses is owned by the City of Memphis and disposes of smaller animal carcasses from throughout the county. It is located at 2401 North Second Street in North Memphis. Shelby County takes larger animal carcasses to a

rendering plant at Union City, Tennessee.

E. DISPOSAL FACILITIES - LANDFILLS

There are two landfills located in Shelby County. (See Figure II-1.) Both are owned and operated by BFI.

The North Shelby Landfill is located at 7111 Old Millington Road in the northwestern portion of Shelby County southwest of Millington. This landfill opened in 1988 and consists of 640 acres, the largest landfill in Tennessee. The North Shelby Landfill has approximately 30 years of use remaining.

The South Shelby Landfill is located at 5494 Malone Road in the south central portion of Shelby County just north of the Tennessee-Mississippi state line. This landfill opened in 1981 and consists of 400 acres. The landfill now has approximately 12 years of use remaining.

In recent years, three publicly owned landfills in Shelby County have closed. Shelby County Government closed the Shelby County Penal Farm Landfill in October 1988 and the Shake Rag Road Landfill in April 1991. The Arlington Landfill, operated by the Town of Arlington, closed in August 1991.

The City of Memphis has access, through the Memphis and Shelby County Port Commission, to 4,500 acres of land in the extreme southwestern portion of Shelby County. The city plans to develop a 285-acre landfill there by 1996. This area, known as the Frank C. Pidgeon Industrial Park, was originally planned and zoned for heavy industrial development. The city's portion is now known as the EARTH Complex and already contains a 770-acre wildlife preserve, a bird sanctuary and observation area, and demonstration areas for sludge disposal, composting, and sod farming. The city's T.E. Maxson Wastewater Treatment Plant is located

within the complex. TVA's Allen Fossil Fuel Plant is located just north of the EARTH Complex.

The proposed landfill is expected to last for approximately 20 years and will accept up to 800 tons of waste per day. Only waste generated within Shelby County will be accepted; no waste generated outside the county will be allowed for disposal. Solid waste haulers will access the landfill by a 2.6-mile extension of Riverport Road.

The State of Tennessee issued a permit in April 1994 authorizing development of the landfill.

There are five permitted construction/demolition landfills (Class III and IV landfills) in Shelby County. They are:

Biggs on U.S. Highway 51 North, J.T. Woods on Klinke Road, Chandler Wrecking on Levee Road, Memphis Wrecking on Gill Road, and Norman Brown on Frank Road. The locations of these are shown in Figure II-1.

F. COSTS OF THE CURRENT SYSTEM

Costs associated with the current solid waste management system in Shelby County totaled \$40,294,821 for Fiscal Year 1993. The City of Memphis' portion of the total costs in Shelby County was approximately 89 percent. A summary of the costs for each of the eight local governments is presented in Table II-13.

G. REVENUES OF THE CURRENT SYSTEM

Revenues devoted to solid waste management services in Shelby County totaled \$40,540,509 in Fiscal Year 1993. Revenues in Memphis alone totaled approximately 88 percent of all solid waste management revenues in Shelby County. A summary of the sources of revenue for the eight local governments is presented in Table II-14.

H. PUBLIC INFORMATION AND EDUCATION PROGRAMS

Shelby County sponsors the Shelby County Environmental Improvement Commission which provides educational services and encourages citizen participation in environmental programs. The commission offers an education program (developed by Dupont) for Shelby County elementary school students and helps organize and coordinate several recycling and composting programs such as the Shelby County-Shelby Forest Christmas Tree Project. The SCEIC publishes an environmental directory for Memphis and Shelby County and a

newsletter reporting on local environmental events and issues.

The City of Memphis sponsors an environmental education program through the Memphis City Beautiful Commission's "Waste-in-Place" program. City Beautiful, an affiliate of Keep America Beautiful, Inc., (KAB) receives the "Waste-in-Place" curriculum from KAB and distributes it to approximately 120 elementary schools in Memphis. City Beautiful is now promoting an environmental curriculum in secondary schools entitled "Waste: A Hidden Resource."

In addition, other local educational services are provided by the Recycling Office of the Memphis Division of Public Works and the various city beautiful/environmental commissions and public works departments of the other

municipalities.

I. PROBLEM WASTES

1. Waste Tires

Tires are still accepted for disposal at both landfills in Shelby County although an extra tipping fee is assessed for each whole tire landfilled. The extra fee is intended to discourage the public from disposing of tires in this manner. However, after December 31, 1994, whole tires no longer will be accepted at landfills in Tennessee; only shredded tires will be allowed to be landfilled. This decree is set forth in the Solid Waste Management Act of 1991.

There are two tire shredding/chipping operations in Shelby County. The Memphis Division of Public Works operates a tire shredder at 1514 North Bellevue. (See Figure II-1.) By agreement with Shelby County Government and the smaller municipalities in Shelby County, Memphis accepts tires from throughout Shelby County. In FY '92, a total of 157,567 tires were shredded in the program.

As mentioned previously in Section D.3.a of this chapter, TR Systems operates a pilot program that uses chipped waste tires to produce a fuel additive for TVA's Allen Fossil Fuel Plant.

2. Batteries

The disposal of lead-acid batteries is no longer allowed in landfills in Tennessee. While there is no concerted effort or officially sanctioned program by local governments to collect the batteries, retailers in Tennessee now are required to accept used batteries for trade-in. Local companies accepting used batteries are listed in Table II-12. One of the largest lead-acid battery recyclers in the country is located in Memphis. Refined Metals in Southwest Memphis recycles more than two million batteries each year and ships more than five million pounds of recovered lead each year.

3. Household Hazardous Wastes

Household hazardous wastes are still accepted for disposal at area landfills. However, the State of Tennessee has directed that Memphis (and the other three large cities in Tennessee) develop permanent household hazardous waste collection sites for their communities. The state is offering a \$500,000 grant to

develop each site.

4. Waste Oil

In the Memphis area, waste oil is accepted for recycling by a number of local companies. These companies are listed in Table II-12.

5. Household Appliances ("White Goods")

The City of Memphis provides a program for the special collection of discarded refrigerators, freezers, air conditioners, washers, and dryers. City crews collect the appliances and remove refrigerants and capacitors. The units are then hauled to a local scrap metal dealer. Since its beginning in Summer 1993, the program has diverted 4,200 tons of appliances from the landfills.

6. Illegal Dumping

Shelby County has a problem of illegal dumping in both urban and rural sections of the county. In the urbanized area, dumps most often are found on vacant lots or otherwise little-used property. In the rural areas of the county, dumps most often are found along roadside ditches, in creeks and gullies, and in the bottomlands of local streams. Some illegal dumping has also been a problem in larger Memphis city parks such as Martin Luther King, Jr., Riverside Park in Southwest Memphis.

The Pollution Control Section of the Memphis and Shelby County Health Department inventoried dump sites and illegal landfills in Shelby County in 1991. The Health Department located 25 illegal dump sites and one unpermitted (illegal) landfill in the county. Due to local budget constraints, laws against illegal dumping are rarely enforced.

7. Medical Waste

Memphis is the home of one of the larger medical centers in the U.S. Within Shelby County are 22 hospitals, 36 full-time or part-time clinics, and 32 long-term care facilities. The disposal of medical waste, therefore, is a major concern for the area. Much of the medical waste in Shelby County is processed by BFI's Health Management incinerator and autoclave located in Southwest Memphis. Other methods of treatment of medical waste, such as pelletizing, are used also by local hospitals, clinics, and other health care facilities.

J. SYSTEM MAP FOR BASE YEAR (1993)

Figure II-1, entitled "Major Elements of the Solid Waste Management System for the Shelby County Region, 1993", is found at the end of this chapter. The map shows all major elements of the existing solid waste management system in Shelby County. Shown are solid waste collection service systems, community recycling programs, composting/mulching programs and facilities, Class I landfills, construction/demolition landfills, waste-to-energy programs/incinerators, transfer stations, major facilities for the processing of recyclables, educational programs, and miscellaneous programs and facilities. Because virtually all streets and roads throughout Shelby County are served by municipal and/or private waste collection companies, no attempt was made to indicate waste collection transportation routes in Figure II-1. No convenience center sites are shown because the county has none.

Most facilities and programs shown in Figure II-1 are site specific. However, some programs operating throughout a city or general area (such as collection service systems, community recycling programs, etc.) are noted adjacent to the city's name. Because the boards of education for Memphis and Shelby County operate educational programs in numerous schools throughout both systems, no attempt was made to identify each school participating in the programs. Educational programs are indicated by noting the Memphis Board of Education and the Shelby County Board of Education at their administrative offices in Midtown Memphis.

Planned/proposed solid waste facilities and programs for Shelby County are shown in Figure XI-2 at the end of Chapter XI.

K. STRENGTHS AND WEAKNESSES OF EXISTING SYSTEM

1. General Evaluation

By all accounts, citizens of Shelby County enjoy first-quality collection and disposal services provided by their municipal governments and/or through municipal contracts or subscription services with local private waste collectors. Shelby County now has excess landfill capacity and expects to maintain excess landfill capacity through and beyond 2003. The Shelby County system is considered an integrated solid waste management system-- especially for collection and disposal services. However, Shelby County needs to expand local opportunities for recycling and composting/mulching and establish programs to assure the proper handling of household hazardous waste and other problem wastes throughout the county.

Section 68-211-803 of the Tennessee Code Annotated
states

(a) It is declared to be the policy of the State of Tennessee, in furtherance of its responsibility to protect the public health, safety, and well-being of its citizens and to protect and enhance the quality of its environment, to institute and maintain a comprehensive, integrated, state-wide program for solid waste management which will assure that solid waste facilities, whether publicly or privately operated, do not adversely affect the health, safety, and well-being of the public and do not degrade the quality of the environment by reason of their location, design, method of operation, or other means and which, to the extent feasible and practical, makes maximum utilization of the resources contained in solid waste....

All elements of the Shelby County solid waste management system are in compliance with the abovementioned policy statement. The system is also in compliance with all applicable State of Tennessee regulations and all applicable federal regulations. All operators of local services and facilities are considered to be qualified to serve public and private interests in the county.

Specific strengths and weaknesses of the Shelby County system are identified in the following two sections.

2. Strengths

a. Excess Landfill Capacity

The two existing landfills in Shelby County currently have a combined 42 years of use remaining-- 30 years at the North Shelby Landfill and 12 years at the South Shelby Landfill. The City of Memphis has plans to open a 285-acre landfill at its EARTH Complex in 1996. The anticipated use of this landfill will be approximately 20 years.

In addition, a 150-acre regional landfill has been proposed for northwestern Fayette County near the city of Gallaway. This site is on U.S. Highway 70/79 just east of the Shelby County-Fayette County line, approximately 25 miles northeast of Downtown Memphis. When opened, the Gallaway landfill may be considered a potential disposal facility for some Shelby County municipalities-- particularly those located in eastern Shelby County. Thus, it is anticipated that the two

existing landfills in Shelby County and the two proposed area landfills will ensure excess disposal capacity for solid waste in Shelby County for many years.

b. Excellent Solid Waste Collection Services for Residents of Local Municipalities

Each municipality in Shelby County offers solid waste collection services for single-family residents-- either by providing services through city-operated departments or through service contracts with BFI or Waste Management. By all accounts, these residents are provided first-quality solid waste collection and disposal services.

c. Geophysical Characteristics for Prospective Landfill Sites

Shelby County's soil is generally a mixture of deep silt and clay and provides varying opportunities for the development of landfills-- from very poor conditions in some areas to highly acceptable conditions in others. Shelby County's clay soils, particularly the Jackson Clay soils located in the western portion of the county, generally offer the best opportunities for the development of landfills.

d. Support for and Participation in Recycling Programs

There are numerous community-sponsored/community-operated recycling programs in Shelby County. Average participation rates have exceeded 50 percent in most of the programs. Sponsors of the programs have indicated that residents generally are supportive of their recycling programs and are in favor of continuing the programs.

e. Environmental Educational Programs

Through various environmental education outlets, local governments have established commendable records in providing education for citizens with an emphasis on recycling, composting, and source reduction programs. Strong support for such agencies as the SCEIC, the MCBC, the Memphis Recycling Office, and environmental commissions and agencies in other municipalities has been expressed by local governments and the roles of these agencies are expected to increase and expand.

as more local recycling and composting programs get underway.

A number of local schools, colleges, and universities offer ecology and environmental courses as a part of their curricula.

3. Weaknesses

a. No Government-Sponsored Collection Services in Unincorporated Shelby County

Each municipality in Shelby County offers solid waste collection and disposal services for its residents. However, Shelby County Government does not offer collection and disposal services for residents of unincorporated Shelby County nor does it require residents to contract independently for services with private companies. Residents in unincorporated Shelby County totalled 121,073 persons in 45,165 households in 1990 (approximately 15 percent of Shelby County's total population).

The Solid Waste Management Act of 1991 requires that county governments assure that each household in their jurisdictions has access to solid waste disposal services, i.e., services provided by a professional solid waste management company.

b. Local Opposition to the Siting of New Landfills

In the past few years, strong public opposition to the proposed siting of new landfills has developed in Shelby County. This attitude, dubbed NIMBY ("Not In My BackYard"), is found not only in Shelby County but for solid waste projects and facilities throughout the U.S.

c. Concern for Groundwater Contamination

Also in recent years, there has been increasing concern over the potential effects of landfill leachate and other pollutants on groundwater in Shelby County. This concern will likely strengthen the public's resolve to discourage the development of additional landfills in Shelby County.

d. Additional Recycling Services Needed

More than 32,500 households in Shelby County are now participating in curbside recycling services. However, this number represents only 11 percent of

the total number of households in Shelby County. While the recent establishment and expansion of new recycling programs in Shelby County represents a great improvement over the situation at the beginning of the 1990s, recycling programs need to be offered to additional, if not all, households in Shelby County.

e. Additional Composting/Mulching Programs Needed.

Memphis and Bartlett operate the only two composting/mulching facilities in the county. Additional facilities are needed in Shelby County for the benefit of all residents and businesses as well as the other municipal governments. Backyard "grasscycling" and composting programs for residents, such as the one now operating in Germantown, are needed in all Shelby County communities.

f. Household Hazardous Waste Collection Program and Needed

Memphis and Shelby County currently have no officially sanctioned programs to collect and dispose of household hazardous waste (HHW) and other problem wastes. Some local businesses do provide collection and disposal for some commodities such as used batteries and waste oil. However, Shelby County needs to develop a coordinated approach to collect and dispose of local HHW and other problem wastes.

g. Lack of Marketability for Recycled and Composted Products

In Memphis and Shelby County, as well as throughout Tennessee, the market for recyclables is very limited. Currently, only aluminum cans, scrap metal, office paper, and cardboard carry much value in the local marketplace. The market for such items as newsprint, plastics, and glass is extremely poor with current prices at very low levels. Some local recycling companies accept donations of these items but do not pay the recycler.

h. Local Purchase and Use of Recycled Products

Shelby County Government and the governments of the municipalities in the county generally have not promoted the purchase and use of recycled products in the workplace. With thousands of workers being employed by the eight local

governments, the use of recycled products by a work force of this size would have a significant impact on reducing the purchase and use of "new" products (products not made from recycled materials).

Table II-1

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

Shelby County

| Tons Disposed | Estimated Population | Waste Disposed Per Capita |
|------------------|-------------------------|------------------------------|
| 1,370,082 | 830,353 | 1.65 Tons |

Table II-2
 Origin of Regional Solid Waste in 1991
 Shelby County

| Sector | Tons Disposed |
|--------------------------|---------------|
| Residential | 479,529 |
| Commercial/Institutional | 411,025 |
| Non-Hazardous Industrial | 342,521 |
| Special | 137,008 |
| Other | 0 |
| Total | 1,370,083 |

Table II-3

Acceptance of Certain Categories of Solid Waste
for Disposal or Incineration

Shelby County

| Category | BFI North Yes/No | Quantity | BFI South Yes/No | Quantity |
|--|---------------------|----------|---------------------|----------|
| Yard Waste (Clippings- Leaves- Grass) | Yes | NA | Yes | NA |
| Sewage Sludge | Yes | NA | Yes | NA |
| Construction/ Demolition | Yes | NA | Yes | NA |
| Tires | Yes | NA | Yes | NA |
| White Goods | Yes | NA | Yes | NA |

NA Not Available.

Table II-4

Description of the Waste Stream by Materials, 1991

Shelby County

| Category | National Percentage | Calculated Regional Tons |
|-------------------------------|---------------------|--------------------------|
| Paper and Paperboard | 40.0 | 548,033 |
| Glass | 7.0 | 95,906 |
| Ferrous Metals | 6.5 | 89,055 |
| Aluminum | 1.4 | 19,181 |
| Other Non-ferrous Metals | 0.6 | 8,220 |
| Plastics | 8.0 | 109,607 |
| Rubber and Leather | 2.5 | 34,252 |
| Textiles | 2.1 | 28,772 |
| Wood | 3.6 | 49,323 |
| Food Waste | 7.4 | 101,386 |
| Yard Waste | 17.6 | 241,134 |
| Miscellaneous Inorganic Waste | 1.5 | 20,551 |
| Other | 1.7 | 23,291 |
| Total Municipal Solid Waste | 99.9 | 1,368,711 |

Table II-5
 Unmanaged Waste*
 Shelby County

| Potential Waste Generation 1991** (TPY) | Actual Waste Disposed 1991 (TPY) | Unmanaged Waste 1991 (Potential/Actual) (TPY) | Percent of Potential Total |
|---|----------------------------------|---|----------------------------|
| 909,237 | 1,370,082 | -460,845 | -33.6 |

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

** Calculated as the 1991 population multiplied by six pounds per person per day (365 days), then converted to tons.

TPY Tons Per Year.

Table II-6

Existing and Planned Composting/Mulching Facilities

Shelby County

| Facility | Tons Processed/Year | Composted/Mulched Yard Waste | Sewage Sludge | Materials Solid Waste |
|---|------------------------|---------------------------------|------------------|-----------------------------|
| Existing | | | | |
| EARTH Complex | 1,250 | 1,125 | 375 | 0 |
| Bartlett | 2,200 | 0 | 0 | 0 |
| Total | 3,450 | 1,125 | 375 | 0 |
| Planned | | | | |
| BFI North | 9,075 | 7,714 | 0 | 1,361* |
| Total Existing and Planned | 12,525 | 8,839 | 375 | 1,361 |

* Food Waste

Table II-7

Municipal Solid Waste Incinerators and
Waste-to-Energy Facilities

Shelby County

| Facility | Design Capacity (TPY) | Current Use (TPY) | Anticipated Operating Life of Facility |
|---------------------------------|-----------------------|-------------------|--|
| Incinerators | | | |
| City of Memphis | 1,600 | 438 | 20 Years |
| Health Management | 20,148 | 6,205 | 30 Years |
| Mid-South Regional Blood Center | 365 | 16 | 25 Years |
| Wood Processing-Getwell | 10,400 | 6,500 | 5 Years |
| Waste-to-Energy Facility | | | |
| Allen Fossil Fuel Plant | | | |
| Waste Tire Program | NA* | NA* | NA* |

* Not Available-- Pilot Project.

TPY Tons Per Year.

Table II-8

Existing Municipal Solid Waste Landfills, 1992

Shelby County

| Landfill | Location | Permitted Capacity (Acres) | Current Rate of Waste Accepted (TPD) | Remaining Capacity (Tons) |
|------------------|--------------------------|----------------------------|--------------------------------------|---------------------------|
| BFI-North Shelby | 7111 Old Millington Road | 640 | 1,212 | 11,344,320 |
| BFI-South Shelby | 5494 Malone Road | 400 | 1,994 | 7,465,536 |

TPD Tons Per Day.

Table II-9

Existing Landfills Expected to Close Before 2003

Shelby County

None

Table II-10

Planned Expansions and Planned New Landfills
Which Will Operate for Ten Years or More

Shelby County

| Proposed Facility- Expansion/New | Location | When Will Capacity Be Available | Permitted Capacity Sought (Acres) |
|-------------------------------------|--|---------------------------------------|--|
| EARTH Complex- New | Frank C. Pidgeon Industrial Park | 1996 (Estimated) | 285 |
| | Design Rate of Waste Disposed (TPD) | Potential Expansion Yes/No | |
| | 800 | Yes | |

TPD Tons Per Day.

Table II-11

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

Shelby County

| Year | Existing Tons * | Tons Planned** | Total Tons |
|---------|--------------------|-------------------|---------------|
| FY 1993 | 18,809,856 | 0 | 18,809,856 |
| FY 1994 | 17,809,856 | 0 | 17,809,856 |
| FY 1995 | 16,809,856 | 0 | 16,809,856 |
| FY 1996 | 15,809,856 | 4,576,000 | 20,385,856 |
| FY 1997 | 14,809,856 | 4,347,200 | 19,157,056 |
| FY 1998 | 13,809,856 | 4,118,400 | 17,928,256 |
| FY 1999 | 12,809,856 | 3,889,600 | 16,699,456 |
| FY 2000 | 11,809,856 | 3,660,800 | 15,470,656 |
| FY 2001 | 10,809,856 | 3,432,000 | 14,241,856 |
| FY 2002 | 9,809,856 | 3,203,200 | 13,013,056 |
| FY 2003 | 8,809,856 | 2,974,400 | 11,784,256 |

* Includes BFI-North Shelby and BFI-South Shelby landfills.

** EARTH Complex Landfill is the only additional landfill planned for Shelby County through 2003.

Table II-12
Processors of Recyclable Materials
Shelby County

| Company/ Address | Recyclables Accepted |
|---|---|
| AAA Industrial Maintenance Services 172 Kimbrough Place | Waste oil |
| Able Energy Co. Inc. 1245 Channel | Waste oil |
| Airways Iron & Metal Co. 2103 East Person | Aluminum cans, scrap metal |
| A-Klean Environment 170 Eastman | Waste oil, batteries |
| Alcoa Recycling Center 234 Titan | Aluminum cans |
| Aluminum Can Recyclers/ Iskiwitz Metal Co. 604 Marble | Aluminum cans and scrap, non-ferrous metal scrap, stain- less steel, batte- ries, copper, brass |
| Aluminum Can Recycling 4662 Lamar | Aluminum cans |
| American Laser Recycling Inc. 4646 Poplar | Laser printer and copier toner cartridges |
| Battery Warehouse 3251 Millbranch | Batteries |
| Chief Auto Parts 3357 North Watkins 3586 Summer | Used motor oil, batteries |

Compulaser Inc.
1497 Bartlett Road

Laser printer,
copier and FAX
cartridges

CTC Industrial Services
1827 Latham

Waste oil

Curtis Transportation
170 Eastman

Recyclables hauler

Delta Materials Handling Inc.
4676 Clarke

Shelving, pallet
racks, warehouse
equipment

Dixie Recycling Center
2747 Jackson

Aluminum cans, card-
board, office recy-
clables, newspapers

Green Environmental Design
Recycling Service
3641 Millbranch

Computer/office pa-
per, aluminum cans,
glass, newspapers,
magazines, old
clothes

H. Blockman & Co.
376 North Front

Aluminum cans and
scrap, corrugated
metal, copper, brass

J & J Scrap Metals
235 South Parkway East

Copper, brass,
aluminum

Karchmer & Son Inc.
1337 Riverside

Aluminum scrap, cop-
per, brass, non-
ferrous metals

Kerr Brothers Salvage
5595 South Third

Iron, non-ferrous
metals

Kroger Food Stores
23 Locations in Memphis Area

Paper sacks, plastic
bags, aluminum cans,
soft plastic con-
tainers

Laidlaw Environmental Services
3536 Fite

Waste oil

Lazarov Brothers Tin Compress Co.
1450 North Thomas
1166 North Seventh

Aluminum cans, fer-
rous and non-ferrous
metals

Memphis Recyclery
1245 Morehead

Newspaper, paper,
cardboard, plastic,
aluminum cans, steel
cans, glass

Memphis Waste Paper Inc.
704 South Dudley

Paper scrap, news-
print

Mid-South Metal Recycling
6612 US Highway 51 North
Millington

Aluminum cans, non-
ferrous metals

Mogy & Son Co.
2530 Shasta

Aluminum cans, scrap
metal

PC Applications Consultants Inc.
759 Cedar Brake

Laser printer and
copier toner
cartridges

Pad Warehouse
2640 Faxon

Foam carpet padding,
furniture foam

Pallet Factory
821 Vance

Wooden pallets

Payne Auto Parts
1301 North Hollywood

Engines, trans-
missions, batteries,
aluminum scrap

Perlman & Co.
476 North Manassas

Aluminum cans, scrap
metals

Purified Lubricants Inc.
3997 Lamar

Waste oil

Recycling America
6363 Poplar, Suite 427

Computer ribbons,
laser toner
cartridges

Recyclon
1312 Louisiana

Buffing pads

RecyclaTone
2725 South Mendenhall, Suite 20C

Laser printer toner
cartridges, office
machines

Resource Recovery Inc.
1371 Farmville Road

Used oil, filters,
antifreeze

Samitized Steel Co.
10 West Henry

Tin, light iron,
cars

South Memphis Iron & Metal Co. Inc.
2260 South Rayburn

Aluminum cans, scrap
metals

Southern Tin Compress Corp. Inc.
1270 North Seventh

Aluminum cans, scrap
metals

Smurfit Recycling
1131 Agnes Place

Aluminum cans, paper

Sterling Industries
170 Eastman

Glass, aluminum
cans, cardboard

Superior Recycling
170 Eastman

Aluminum cans,
plastics, cardboard

TR Systems Inc.
2850 Plant

Tires

Tri-Tenn Services
2521 Matthews

Aluminum cans, scrap
metals

United Oil & Chemical Inc.
1015 Southern

Waste oil

Aluminum Can Banks (These sites are not considered permanent recycling locations and may change or close with little or no notice.)

Big Star
3327 North Watkins

Kroger
2680 Frayser

Most Store
4546 Knight Arnold

Most Store
4802 Navy Road
Millington

Piggly Wiggly
3040 Austin Peay

Piggly Wiggly
1620 Madison

Piggly Wiggly
888 South White Station

Piggly Wiggly
5260 Winchester

Steve's Big Star
5898 US Highway 70

Supervalue
1779 Prescott

Other Processors Located Outside of Shelby County But Serving
Shelby County Residents

ATM Oil Co.
Crittenden County Road 543
West Memphis, Arkansas

Waste oil

ECO Services Inc. - First Recovery
5390 Hacks Cross
Olive Branch, Mississippi

Used motor oil

Industrial Oil Service
610 Jefferson
West Memphis, Arkansas

Waste oil

Mid-South Metal Recycling
1301 East Broadway
West Memphis, Arkansas

Aluminum cans, non-ferrous metals

Mid-South Scrap Iron and Metal
US Highway 70 West
West Memphis, Arkansas

Aluminum cans, scrap metal

Somerville Recycling Center
US Highway 64
Somerville, Tennessee

Aluminum, copper

Specialty Oil Environmental Services
4000 Interstate 55
West Memphis, Arkansas

Used oil

VFW Post 5225
406 South Avalon
West Memphis, Arkansas

Aluminum cans

Table II-13

Summary of Costs for Solid Waste Management Services,
Fiscal Year 1993

Shelby County

| Municipality/County | Costs |
|-----------------------|--------------|
| <hr/> | |
| TOWN OF ARLINGTON | |
| Contracted Services | \$ 57,400 |
| Landfill Maintenance | 16,000 |
| Total | \$ 73,400 |
| CITY OF BARTLETT | |
| Personnel | \$ 756,279 |
| Operations | 515,525 |
| Capital | 37,400 |
| Total | \$ 1,309,204 |
| TOWN OF COLLIERVILLE | |
| Personnel | \$ 463,741 |
| Operations | 237,400 |
| Capital | 120,036 |
| Debt Service | 39,300 |
| Total | \$ 860,477 |
| CITY OF GERMANTOWN | |
| Material and Supplies | \$ 55 |
| Other Services | 9,154 |
| Landfill Fees | 355,619 |
| Garbage Collection | 1,201,880 |
| Depreciation | 234 |
| Total | \$ 1,566,942 |

| | | |
|-------------------------|----|---------------|
| CITY OF LAKELAND | | |
| Collection and Disposal | \$ | 50,952 |
| Total | \$ | <u>50,952</u> |

| | | |
|---------------------|----|---------------------|
| CITY OF MEMPHIS | | |
| Administration | \$ | 3,232,075 |
| Collections | | 18,974,854 |
| Disposal | | 8,066,278 |
| Capital | | 2,805,757 |
| Vehicle Maintenance | | 2,500,000 |
| Information Systems | | 99,240 |
| Total | | <u>\$35,678,204</u> |

| | | |
|----------------------------|----|----------------|
| CITY OF MILLINGTON | | |
| Personnel | \$ | 168,378 |
| Operations and Maintenance | | 154,173 |
| Total | \$ | <u>322,551</u> |

| | | |
|-----------------------------------|----|----------------|
| COUNTY OF SHELBY | | |
| Personnel/Collection and Disposal | \$ | 433,091 |
| Total | \$ | <u>433,091</u> |

| | | |
|-----------------------------|--|--------------|
| TOTAL COSTS - SHELBY COUNTY | | \$40,294,821 |
|-----------------------------|--|--------------|

Table II-14

Summary of Revenues for Solid Waste Services,
Fiscal Year 1993

Shelby County

| Municipality/County | Revenues |
|----------------------------------|--------------|
| TOWN OF ARLINGTON | |
| Residential Fees | \$ 51,400 |
| General Fund Operating Transfers | 21,631 |
| State Grant | 369 |
| Total | \$ 73,400 |
| CITY OF BARTLETT | |
| Sanitation Fee | \$ 846,000 |
| Interest Income | 1,500 |
| Transfers from General Fund | 495,000 |
| Other | 1,000 |
| Total | \$ 1,343,500 |
| TOWN OF COLLIERVILLE | |
| Collection Fees | \$ 765,656 |
| Special Trash Pick-up Fee | 1,000 |
| Recycling of Aluminum Cans | 13,000 |
| State Recycling Grant | 3,450 |
| General Fund Contribution | 38,303 |
| Total | \$ 821,409 |
| CITY OF GERMANTOWN | |
| Forfeited Discounts | \$ 24,043 |
| Sanitation Fees | 1,348,994 |
| Grants | 7,866 |
| Investment Income | 12,989 |
| Transfers/General Revenue | 435,694 |
| Total | \$ 1,829,586 |

| | |
|----------------------------|---------------|
| CITY OF LAKELAND | |
| Refuse Collection/Disposal | \$ 38,768 |
| Total | <u>38,768</u> |

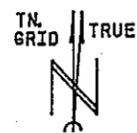
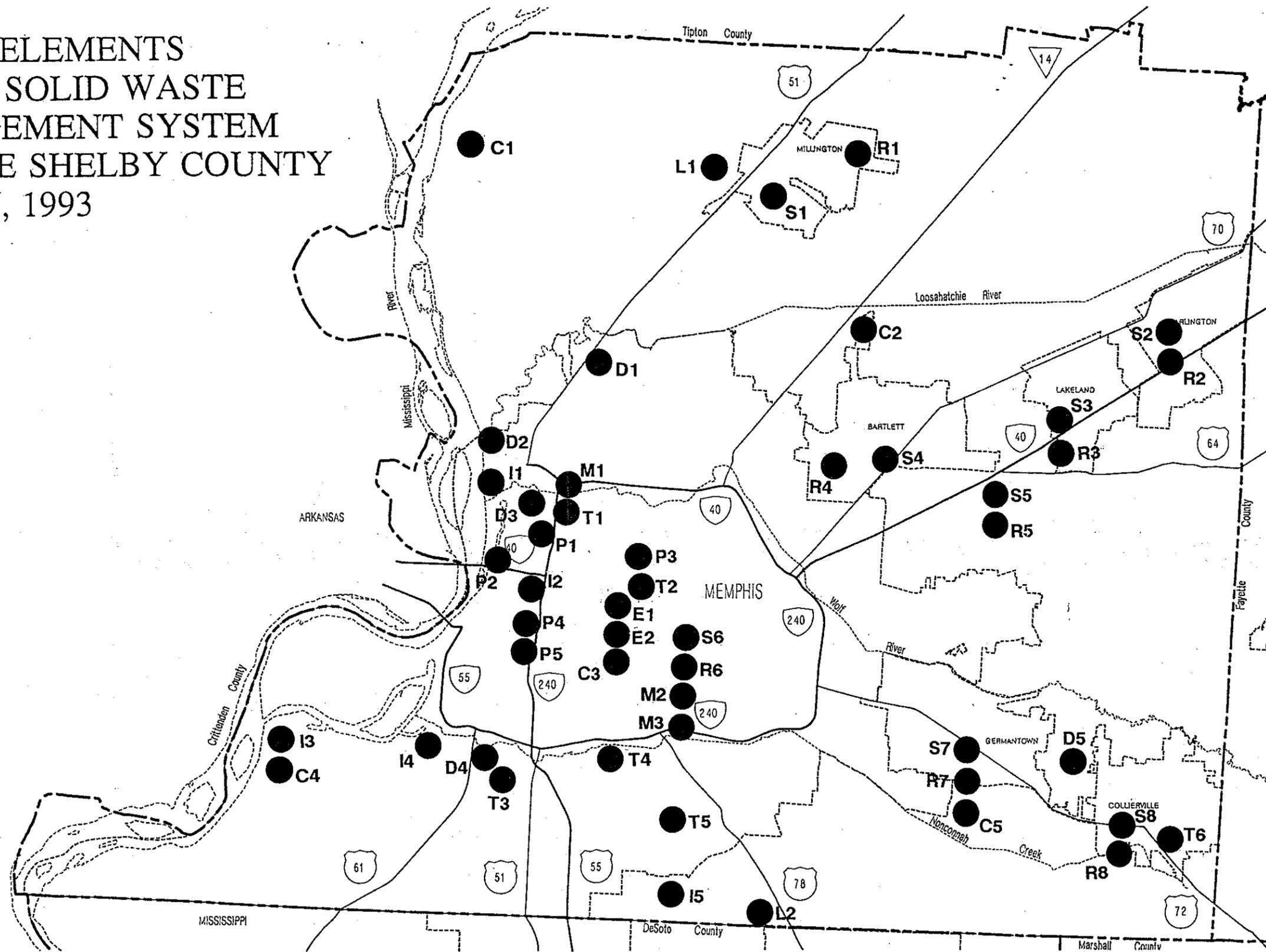
| | |
|---------------------------------|---------------------|
| CITY OF MEMPHIS | |
| General Fund Revenue | \$13,987,381 |
| General Obligation Bond Revenue | 2,805,757 |
| Solid Waste Disposal Fee | 18,156,781 |
| Animal Disposal Fee | 34,702 |
| Tire Shredding Fee | 41,481 |
| Landfill Fees | 42,550 |
| Sanitation Inspection Fee | 353,231 |
| Waste Reduction Grant | 145,956 |
| Recycling Proceeds | 5,737 |
| Expense Recovery | 9,872 |
| Tire Shredder | 94,756 |
| Total | <u>\$35,678,204</u> |

| | |
|--------------------|-------------------|
| CITY OF MILLINGTON | |
| Tax Revenue | \$ 322,551 |
| Total | <u>\$ 322,551</u> |

| | |
|-----------------------|-------------------|
| COUNTY OF SHELBY | |
| Roadside Litter Grant | \$ 295,570 |
| Recycling Rebate | 28,954 |
| General Fund | 108,567 |
| Total | <u>\$ 433,091</u> |

| | |
|--------------------------------|--------------|
| TOTAL REVENUES - SHELBY COUNTY | \$40,540,509 |
|--------------------------------|--------------|

MAJOR ELEMENTS
OF THE SOLID WASTE
MANAGEMENT SYSTEM
FOR THE SHELBY COUNTY
REGION, 1993



SHELBY COUNTY MUNICIPAL SOLID WASTE REGIONAL PLAN

Memphis and Shelby County
Division of Planning and Development
Geographic Information System

Scale: 1" = 18,057'

Date: 05/20/94

FIGURE II-1

KEY TO FIGURE II-1

Solid Waste Collection Services

- S1 City of Millington
- S2 Town of Arlington (Waste Management)
- S3 City of Lakeland (BFI)
- S4 City of Bartlett
- S5 Private Subscription Services for Residents of Unincorporated Shelby County and Commercial, Industrial, and Institutional Businesses Throughout the County (BFI, Waste Management, Others)
- S6 City of Memphis
- S7 City of Germantown (BFI)
- S8 Town of Collierville

Community Recycling Programs

- R1 Memphis Naval Air Station at Millington
- R2 Arlington (Waste Management)
- R3 Lakeland (BFI)
- R4 Bartlett (Drop-off Center)
- R5 Private Subscription Services for Unincorporated Shelby County (Various Neighborhoods)
- R6 Memphis
- R7 Germantown (BFI)
- R8 Collierville

Composting/Mulching Programs and Facilities

- C1 Shelby County-Shelby Forest Christmas Tree Project
- C2 Bartlett Mulching
- C3 Memphis "Chipping of the Green" Christmas Tree Project
- C4 Memphis EARTH Complex
- C5 Germantown Composting and Grasscycling

Class I Landfills

- L1 BFI-North Shelby
- L2 BFI-South Shelby

Class III and IV Landfills (Construction/Demolition Landfills)

D1 Biggs
D2 J.T. Woods
D3 Chandler Wrecking
D4 Memphis Wrecking
D5 Norman Brown

Waste-to-Energy Programs/Incinerators

I1 Memphis Small Animal Incinerator
I2 Mid-South Regional Blood Center Incinerator
I3 TR Systems/Allen Fossil Fuel Plant Waste Tire Program
I4 BFI Health Management Incinerator
I5 Wood Processing Incinerator

Transfer Stations

T1 Bellevue Boulevard (Memphis)
T2 Scott Street (Memphis)
T3 Brooks Road (Memphis)
T4 Democrat Road (Memphis)
T5 Hatcher Circle (Waste Management)
T6 South Street (Collierville)

Major Facilities for the Processing of Recyclables

P1 Memphis Recyclery
P2 H. Blockman
P3 Dixie Recycling
P4 Memphis Waste Paper
P5 Smurfit Recycling

Educational Programs

E1 City of Memphis Board of Education
E2 Shelby County Board of Education

Miscellaneous Programs and Facilities

M1 Memphis Tire Shredder
M2 Memphis City Schools Recycling Program
M3 Memphis "Rebook" Telephone Recycling Program

CHAPTER III. GROWTH TRENDS, WASTE PROJECTIONS, AND PRELIMINARY SYSTEM STRUCTURE

A. GROWTH TRENDS

Shelby County's population in 1990 was 826,330 according to the U.S. Census. The projected population of Shelby County, according to the Tennessee State Planning Office, will be 846,477 in 1995 and 873,531 in 2003.

B. WASTE PROJECTIONS

1. Annual Waste Projections Through 2003

Shelby County disposed of approximately 1,362,405 tons of solid waste in 1989. This figure represents a waste generation rate of 1.65 tons per person in 1989 (based on the county's estimated population of 825,700 in that year). By applying the 1.65 per capita generation rate to the projected population of Shelby County in 1995 (and assuming no source reduction measures), it is projected that Shelby County will generate 1,396,687 tons of waste in 1995 (based on a projected population of 846,477 in 1995). Table III-2 notes the projected quantities of solid waste for Shelby County annually through 2003-- adjusted only for population growth.

2. Variance for Waste Projections

Shelby County requested and received a variance from the State of Tennessee to use revised figures for its 1989 waste generation number and its 1989 per capita waste generation figure. Differing sets of waste generation/per capita figures for Shelby County had been indicated in two previous solid waste planning documents. In the University of Tennessee's report "Managing Our Waste: Solid Waste Planning in Tennessee", the solid waste generation figure indicated for Shelby County in 1989 was 1,122,563 tons or 1.35 tons generated per person. A 1.73 per capita generation figure was indicated for Shelby County (using 1991 information) in the District Needs Assessment for the Memphis Delta Development District prepared by the Memphis Area Association of Governments. The solid waste generation figure indicated for Shelby County in 1989 (using the 1.73 per capita generation rate and the 1989 population

estimate) was 1,428,461 tons.

Local solid waste officials believed the actual 1989 per capita figure was somewhere between the two estimates and conducted a detailed survey in early 1994 to develop more accurate figures. This process is described in Appendix B.

It was this survey that produced the 1.65 per capita generation rate for Shelby County used throughout this document. Shelby County received approval from the State of Tennessee to use the revised rate in April 1994.

3. Adjustments to Waste Projections

Table III-2 presents the quantities of solid waste requiring disposal in Shelby County from 1994 through 2003 adjusted only for the county's annual population growth. Table III-3 presents solid waste projections for population growth and economic growth (using the 3.2 percent annual economic growth rate for Shelby County projected by the University of Tennessee). Table III-4 presents solid waste projections adjusted for population growth and economic growth with allowances (reductions) to reflect local recycling programs and other waste reduction measures. These reduction rates were anticipated to be 20 percent in 1994 and 25 percent in 1995 and subsequent years.

The "Guidelines for Preparation of a Municipal Solid Waste Regional Plan" document, prepared by the Tennessee State Planning Office, suggested a table (Table III-5 (as optional) considering regulatory factors that would affect the amount of solid waste requiring disposal in Shelby County in future years. However, this table was not included in Shelby County's solid waste plan because no regulatory provisions have been enacted by the Shelby County Municipal Solid Waste Region Board at this time.

The "Guidelines" document also suggested a table (Table III-6 as optional) considering other special factors affecting local solid waste generation figures. While some special factors (such as possible increases in local landfill disposal rates or increased numbers of visitors to the county) have been mentioned previously in this plan, no reliable projections are available to accurately predict their effects on future waste generation numbers.

In addition, local solid waste officials say it would be difficult, if not impossible, to accurately predict

the amounts of imported/exported waste for Shelby County in future years. These numbers could substantially increase or decrease as out-of-county waste collection contracts are gained or lost by local companies. Therefore, these factors, suggested in the "Guidelines" document for inclusion as Table III-7 (optional), are not included in this plan.

Therefore, Table III-8, "Annual Projections of Solid Waste Requiring Disposal Adjusted for All Applicable Factors", requested for inclusion by the "Guidelines" document, is presented in Shelby County's solid waste plan as Table III-4, "Quantity of Waste Requiring Disposal Adjusted for Population Change, Economic Growth, and Waste Reduction and Recycling"-- since projections for those three factors only are considered reliable.

C. PRELIMINARY SYSTEM DESIGN

For future solid waste management in Shelby County, there will be five principal components employed to handle the county's municipal waste. They are: (1) landfilling, (2) diversion, (3) recycling, (4) composting, and (5) source reduction measures. Incineration is anticipated to be such a small part of Shelby County's total solid waste management system that it will not be considered as a principal component of the county's system.

Beginning in 1995, it is anticipated that landfilling will accommodate no more than 75 percent of the solid waste generated each year in Shelby County. Of the remaining 25 percent, it is anticipated that diversion will accommodate approximately ten percent, recycling eight percent, composting five percent, and source reduction two percent. The principal waste reduction components for Shelby County are presented graphically in a waste flow diagram, Figure XI-1, in Chapter XI.

D. EVALUATION CRITERIA

Recommended components of the future solid waste management system for Shelby County are outlined in the next seven chapters. The components were evaluated using a number of criteria: institutional compatibility; number and size of facilities needed to meet regional needs; regional markets for recovered materials, fuel, or energy; costs to local governments and the community; siting and regulatory requirements; environmental impacts; and public acceptance.

Table III-1
 Per Capita Solid Waste Generation Rates
 Shelby County

| Total Waste Disposed Of in FY 1993 (Estimated) | Projected Population 1993 | Annual Per Capita Generation (TPY) |
|---|---------------------------------|--|
| 1,383,320 | 838,376 | 1.65 |

TPY Tons Per Year.

Table III-2

Quantity of Solid Waste Requiring Disposal
Adjusted for Population Change

Shelby County

| Year | Tons |
|------|-----------|
| 1994 | 1,389,988 |
| 1995 | 1,396,687 |
| 1996 | 1,403,419 |
| 1997 | 1,410,182 |
| 1998 | 1,416,980 |
| 1999 | 1,423,810 |
| 2000 | 1,430,603 |
| 2001 | 1,434,327 |
| 2002 | 1,437,630 |
| 2003 | 1,441,326 |

Table III-3

Quantity of Solid Waste Requiring Disposal
Adjusted for Population Change and Economic Growth *

Shelby County

| Year | Tons |
|------|-----------|
| 1994 | 1,434,468 |
| 1995 | 1,480,371 |
| 1996 | 1,527,743 |
| 1997 | 1,576,631 |
| 1998 | 1,627,083 |
| 1999 | 1,679,150 |
| 2000 | 1,732,883 |
| 2001 | 1,788,335 |
| 2002 | 1,845,562 |
| 2003 | 1,904,620 |

* Annual Economic Growth Rate: .032 (Compounded Annually).

Table III-4

Quantity of Solid Waste Requiring Disposal Adjusted for
Population Change, Economic Growth,
and Waste Reduction and Recycling *

Shelby County

| Year | Tons |
|------|-----------|
| 1994 | 1,147,574 |
| 1995 | 1,110,278 |
| 1996 | 1,145,807 |
| 1997 | 1,182,473 |
| 1998 | 1,220,312 |
| 1999 | 1,259,363 |
| 2000 | 1,299,662 |
| 2001 | 1,341,251 |
| 2002 | 1,384,172 |
| 2003 | 1,428,465 |

* 20 percent waste reduction in 1994, 25 percent waste reduction in 1995 and each year thereafter.

CHAPTER IV. WASTE REDUCTION

A. BASE-YEAR QUANTITY

The estimated population of Shelby County in 1989 was 825,700. The county disposed of approximately 1,362,405 tons of solid waste in 1989 resulting in a 1989 per capita waste disposal rate of 1.65 tons per person.

B. FUTURE WASTE REDUCTIONS

The Solid Waste Management Act of 1991 requires that Shelby County reduce the per capita quantity of solid waste generated in the county by 25 percent. The designated base year for future generation figures is 1989. The reduction goal is set for calendar year 1995 and must be reached by December 31, 1995.

Therefore, based upon (1) the 1989 per capita waste disposal rate for Shelby County (1.65 tons per person), and (2) with an adjustment for the projected population of Shelby County in 1995 (846,477 persons), and (3) with the application of the 25 percent reduction goal-- Shelby County must landfill and incinerate no more than 1,047,515 tons of solid waste in 1995. This represents a reduction of 314,890 tons of waste from the total amount disposed of in 1989.

C. MEETING THE WASTE REDUCTION GOALS

1. Short-term Goals

Goal: Reduce by 25 percent the amount of Shelby County's solid waste being disposed of in Class I landfills.

This goal is established for Calendar Year 1995 and shall be met by December 31, 1995. This goal applies to all waste generated in Shelby County as a whole, in each municipality in the county, and in the unincorporated areas of Shelby County.

An assessment of progress in meeting the 1995 waste reduction goal shall be made by the Shelby County Municipal Solid Waste Region Board at the direction of the State of Tennessee Department of Environment and Conservation.

2. Long-term Goals

Long-term waste reduction goals will be established in 1996-- following an assessment of how well Shelby County and its municipalities met the short-term goal established for 1995. However, for the purposes of this document, it is anticipated that the county as a whole, the individual municipalities, and unincorporated Shelby County will continue to meet a 25 percent reduction goal each year through 2003.

3. Allocation of Waste Reduction Goals

Table IV-3 notes the composition of waste by tons of the types of material disposed of in Shelby County in 1989. The table also lists the anticipated reduction in tons by the various types of material targeted by December 31, 1995. The composition figures for 1989 were calculated by applying national percentages for Shelby County's total waste disposed of that year. The anticipated reduction figures, therefore, are only an estimate of the amount to be reduced-- based upon the 1989 estimated composition figures.

Table IV-4 notes the composition of waste by tons and by percent for several functional sectors (residential, commercial/institutional, non-hazardous industrial, and special) for the county in 1989. The table also notes the anticipated reduction in tons of waste for these sectors targeted for the end of 1995.

Shelby County has set a reduction goal of 20 percent for the amount of solid waste disposed of in the county by December 31, 1994. To meet the 25 percent reduction goal by December 31, 1995, an additional five percent must be reduced during calendar year 1995. It is anticipated that the annual 25 percent reduction goals (as minimums) will remain in effect through 2003. These reduction goal figures are presented in Table IV-5.

4. Waste Reduction Strategies

a. Material Recovery, Reuse, and Recycling

Section G of this chapter offers in detail the strategies of the local municipalities and unincorporated Shelby County for meeting their individual 25 percent reduction goals.

b. Proposed Regulatory Bans

The Shelby County Municipal Solid Waste Region Board has not proposed nor instituted any

regulatory bans at this time.

c. Economic Incentives/Disincentives

Since businesses account for approximately 55 percent of the waste generated in Shelby County, any waste reduction strategies proposed by the county should include local businesses as an integral part of the plan. At this time, the Shelby County Municipal Solid Waste Region Board has proposed no economic incentives/disincentives for local businesses. However, this option remains available for future consideration.

D. ALLOCATION OF RESPONSIBILITIES

The overall responsibility for ensuring that the directives of this plan are carried out rests with Shelby County Government through the auspices of the Shelby County Municipal Solid Waste Region Board. Shelby County must verify that the individual municipalities within the county are in compliance with all general policies set forth in the plan. However, the selection of specific procedures for implementing the solid waste programs and initiatives will remain the prerogative of each municipality in Shelby County. Implementing waste reduction programs and initiatives in unincorporated Shelby County will be the responsibility of Shelby County Government.

If Shelby County fails to meet its 25 percent reduction goal, it may seek a variance from the State of Tennessee. If the county has made a good-faith effort to achieve its goal but fails, it may receive a variance from the state for no more than five years. However, if the county fails to achieve its goal and has not made a good-faith effort to carry out its plan, the county will be subject to sanctions applied by the state. Possible sanctions include being issued a formal warning, losing eligibility for grants from the Solid Waste Management Fund, and being assessed civil penalties. If an individual municipality within the county fails to meet its reduction goals, sanctions may be applied to that (and only that) municipality. If the county and the other municipalities in the county have met their individual reduction goals, sanctions will not be applied to them-- only to the municipality failing to meet its reduction goal.

E. WASTE REDUCTION STRATEGIES FOR INDIVIDUAL MUNICIPALITIES AND UNINCORPORATED SHELBY COUNTY

Outlined below are the individual waste reduction plans developed and submitted by each municipality in Shelby County and by Shelby County Government for unincorporated

Shelby County.

1. Arlington

a. Strategies

The Town of Arlington's plans for achieving the 25 percent municipal solid waste reduction goal are predicated on meeting the following criteria:

- > Identifying the sources and generators of solid waste in Arlington including residential and commercial, industrial, and institutional (CII) generators.
- > Educating the public and business community about waste reduction including recycling and composting.
- > Monitoring the waste reduction process through documentation.

For planning purposes, the first step Arlington must take is to identify the sources and determine the percentages of solid waste being generated by residential, commercial, industrial, and institutional entities. Local solid waste collectors are responsible for collecting solid waste from all sources in Arlington.

Residential recycling was instituted in Arlington in August 1992. Arlington will continue to encourage recycling by promoting environmental education in local schools, encouraging residential customers to continue recycling, and enlisting the support of commercial, industrial, and institutional groups to implement and promote local recycling programs.

The Town of Arlington plans to implement a yard waste composting/mulching program in 1994 to further reduce solid waste going to landfills and meet the 25 percent reduction goal.

b. Staffing

Management, operational, and clerical staff for the town's waste reduction efforts will be provided by local waste management companies through contract with the Town of Arlington.

c. Funding and Budget

Arlington's waste reduction efforts will be funded from monthly service fees and solid waste operating funds transferred from the town's

general budget. Approximately \$60,000 is budgeted for 1994 for solid waste collection and disposal.

d. Implementation Schedule

In 1994, Arlington plans to (1) purchase or rent a tub grinder or chipper, (2) begin a yard waste diversion program, (3) encourage commercial, industrial, and institutional generators to begin recycling programs, and (4) increase public awareness of local recycling efforts. In future years, Arlington plans to expand on these programs.

2. Bartlett

a. Strategies

The City of Bartlett's plans for achieving the 25 percent municipal solid waste reduction goal are predicated on meeting the following criteria:

- > Identify the sources and generators of solid waste in Bartlett including residential, commercial, industrial, and institutional generators.
- > Evaluate alternative processing capabilities.
- > Evaluate alternative collection programs.
- > Select desired process.
- > Budget for implementation.
- > Train collection personnel.
- > Educate the public and business community about waste reduction including recycling and composting.
- > Monitor the process through documentation.

For planning purposes, Bartlett estimates that 75 percent of the city's solid waste is being generated by residential uses with 25 percent being generated by commercial, industrial, and institutional uses. The City of Bartlett Department of Public Works is responsible for collecting all residential solid waste in the city. Local solid waste contractors are responsible for collecting solid waste from CII uses.

To meet the 25 percent reduction goal from the residential sector, Bartlett estimates that 15 percent of the 25 percent reduction goal will be effected by composting, seven percent by recycling, and three percent by source reduction.

For the commercial, industrial, and institutional

sectors in Bartlett, the city estimates that 20 percent of the 25 percent waste reduction goal will be due to recycling with five percent due to source reduction measures.

Bartlett estimates that the city will reach an approximate 14 percent reduction by the end of 1993 (nine percent from the CII sectors, five percent from the residential sector). By the end of 1994, a 19 percent reduction will be reached (12 percent from the CII sectors and seven percent from the residential sector). By the end of 1995, the total 25 percent reduction will have been met-- 15 percent from the residential sector and ten percent from the CII sectors.

For the residential waste reduction program, Bartlett estimates that 85 percent of the total reduction will be from its yard waste diversion (composting/mulching) program, 13 percent from the city's recycling program, and two percent from other reduction efforts. In the recycling program, Bartlett estimates that 65 percent of the reduction will be due to recycling newsprint and cardboard, 20 percent from glass, eight percent from plastics, and seven percent from aluminum.

For CII recycling efforts, Bartlett estimates that 70 percent of the reduction will be from recycling corrugated cardboard, 15 percent from metals, 13 percent from paper, and two percent from other commodities.

b. Staffing

Management, operational, and clerical staff required for the city's waste reduction efforts will be added as needed.

c. Funding and Budget

Bartlett's waste reduction efforts will be funded from monthly service fees and solid waste services operating funds.

Approximately \$75,000 has been budgeted for Fiscal Year 1994 for funding the city's solid waste reduction program. This amount includes salaries for three employees of the mulching program, funds for the city's drop-off recycling center, and hauling fees and labor. Subsequent budgets will reflect increases as needed to meet the city's reduction goals.

d. Implementation Schedule

- 1994 > Purchase/rent tub grinder.
- > Increase public education.
- > Expand yard waste diversion program.
- > Expand Christmas tree and leaf mulching program.
- > Expand drop-off recycling center.
- > Monitor waste stream quantities.

- 1995 > Expand yard waste mulching program.
- > Increase public education.
- > Participate in household hazardous waste program.
- > Continue drop-off recycling center/ consider pilot curbside recycling program.

- 1996 > Continue public education.
- > Expand recycling program.
- > Continue yard waste mulching and leaf composting programs.
- > Establish a city solid waste planning board.

- 1997-2003 > Continue public education.
- > Expand recycling program.
- > Continue yard waste mulching and leaf composting programs.

3. Collierville

a. Strategies

The Town of Collierville collects 100 percent of the residential solid waste and approximately 33 percent of the commercial solid waste generated in the town. Precise figures are not yet available for commercial, industrial, and institutional generation. A study to determine this information is now underway.

In 1993, residential waste in Collierville totaled 11,327 tons. Of this total, 7,087 tons (63 percent) were household wastes with 4,240 tons (37 percent) consisting of yard wastes.

In March 1994, Collierville expanded its pilot curbside recycling program in four neighborhoods to include all single-family residences in the town. Of the total residential solid waste produced in Collierville, approximately 19 percent is being recycled in the curbside program.

All of Collierville's yard waste (37 percent of the total residential waste) is now being composted or diverted to Class III and IV landfills.

b. Staffing

Additional staffing required for Collierville's waste reduction efforts will be added as needed.

c. Funding and Budget

Funding for Collierville's waste reduction programs will be provided by local service fees.

d. Implementation Schedule

In 1995-96, Collierville plans to expand its recycling program to include all apartment dwellers in the town. Possibly, Collierville may expand its recycling program to include commercial, industrial, and institutional operations also. This decision will be based on the results of the CII survey now being conducted.

A city-owned/city-operated composting facility is not feasible at this time but may be considered in the future.

4. Germantown

a. Strategies

The City of Germantown's plans for achieving the 25 percent municipal solid waste reduction goal are predicated on meeting the following criteria:

- > Itemizing solid waste volumes and sources.
- > Prioritizing what is to be collected.
- > Determining how prioritized waste will be collected.
- > Budgeting.
- > Providing alternative recycling programs.
- > Gathering solid waste data from the commercial and institutional sectors.
- > Educating the public and business community about waste reduction, recycling, and composting.
- > Monitoring through documentation the progress of the city's waste reduction efforts.
- > Contracting with private industry for the collection and marketing of recyclable materials.

The City of Germantown plans to continue to contract with private waste management companies for the collection and disposal of residential waste and for the collection and marketing of recyclable materials. The city's current waste contracts extend to Fiscal Year 1996.

Other than small-quantity generators in the commercial sector that receive City of Germantown waste collection services, the majority of commercial and institutional businesses in the city are responsible for disposing or recycling their own solid wastes-- most often, by contracting with private waste haulers. Overall, the commercial and institutional sectors in Germantown contribute a very small amount to the city's solid waste stream. The city estimates that 92 percent of its waste is generated by residential uses with the remaining eight percent generated by commercial and institutional uses.

The city estimates that a 44 percent reduction of residential waste (based on 1989 waste generation estimates) will be achieved by 1994. This figure includes 32 percent by source reduction and other diversion efforts, eight percent by recycling, and four percent by composting and "grasscycling".

The city estimates that commercial and institutional wastes will be reduced by 15 percent by 1994. This figure includes ten percent by recycling and five percent by source reduction.

Germantown estimates that residential waste reduction totaled 40 percent at the end of 1993 and that the city will achieve a 44 percent reduction in 1994 and a 46 percent reduction in 1995. No estimates are available for waste reductions from commercial and institutional uses in the city.

Of its residential recycling program, Germantown estimates that 62 percent of the waste reduction total will be from recycling newsprint, 18 percent from glass, ten percent from steel cans, six percent from aluminum cans, and four percent from plastics. The reduction of commercial and institutional wastes by recyclable material type is not known.

One hundred percent of Germantown's yard waste will be diverted from Class I landfills by composting, "grasscycling", or diversion to Class III and IV landfills.

b. Staffing

Additional management and clerical staff will be added as warranted. Staffing will be dependent on the level of waste services provided.

c. Funding and Budget

Funding sources for Germantown's waste reduction efforts will include monthly service fees and general revenue funds with some supplemental funding from grants and private sources.

The solid waste management budget for Germantown in FY '93 was \$1,566,968. The estimated FY '94 budget is \$1,689,188 with the proposed FY '95 budget projected to be \$1,800,400.

d. Implementation Schedule

- 1994 > Continue curbside recycling program.
- > Increase public education.
- > Expand yard waste diversion.
- > Expand backyard composting program.
- > Strive for a 15 percent reduction in residential waste.
- > Continue recycling awareness campaign and survey.
- > Collect reduction data from the business community.

- 1995 > Continue curbside recycling program.
- > Continue yard waste diversion.
- > Expand backyard composting program.
- > Increase public education.
- > Achieve and document a minimum 25 percent reduction of residential, commercial, and institutional wastes.
- > Participate in household hazardous waste collection program.

- 1996 > Expand number of recyclables in curbside recycling program.

- 1996-2003 > Continue city-wide curbside recycling program.
- > Re-bid the city's private contract(s) for solid waste services including but not limited to household waste collection, household waste disposal, yard waste collection, yard waste disposal, curbside recycling, and marketing of recyclables.
- > Conform to or exceed State of Tennessee

- recycling goals.
- > Budget accordingly.
- > Develop comprehensive education program for all public and private schools.

5. Lakeland

a. Strategies

The City of Lakeland contracts with BFI for residential solid waste collection services. In 1993, 349.7 tons of solid waste were collected by BFI in Lakeland. This figure included 243 tons of household waste and 106.7 tons of yard waste. Contracting for commercial and industrial collection services is the responsibility of individual businesses in Lakeland. Totals for the amount of solid waste collected in the commercial, industrial, and institutional sectors in 1993 is not available.

In 1991, Lakeland began a city-wide curbside recycling program. The program is operated by BFI. In 1993, 37.7 tons of residential household waste were recycled-- approximately 16 percent of the city's total amount of household waste.

Lakeland plans to divert all yard waste to Class IV landfills after September 1994. Yard waste currently represents 30.5 percent of the city's total residential waste. The city plans an educational program to encourage Lakeland residents to compost and use mulching mowers to reduce their yard waste. It is hoped that these efforts will reduce the amount of yard waste now being disposed of by an additional ten percent.

Lakeland is working with the commercial establishments in the city to expand recycling of cardboard.

The city provides local residents a 500-gallon tank for the recovery of used motor oil. The city has an agreement with a local oil company to collect the used oil.

A city-owned and operated composting facility is not feasible at this time although this may be considered in the future.

b. Staffing

The City of Lakeland has no current solid waste

staff positions and does not anticipate any in the future. All solid waste services are contracted with BFI.

c. Funding and Budget

Funding for solid waste services is provided through service fees.

d. Implementation Schedule

- 1994 > Continue curbside recycling program.
> Begin educational program to encourage composting and mulching by residents.
> Continue to encourage commercial establishments to recycle cardboard.
> Continue used oil recovery program.
> Divert all yard waste to Class IV landfills.

6. Memphis

a. Strategies

The City of Memphis' plans for achieving the 25 percent reduction goal are predicated on meeting the following criteria:

- > Determining what is the composition of solid waste in Memphis.
- > Identifying the sources/generators of Memphis' solid waste.
- > Itemizing solid waste by volume.
- > Establishing alternative processing capabilities.
- > Prioritizing what is to be collected.
- > Determining how prioritized waste material will be collected.
- > Budgeting.
- > Training collection personnel.
- > Providing alternative collection programs.
- > Gathering solid waste data from the commercial, industrial, and institutional sectors.
- > Educating the public and business community about waste reduction, recycling, and composting as outlets and services become available.
- > Monitoring through documentation the progress of waste reduction as programs and data become available.

Because the City of Memphis Division of Public Works collects solid waste from the vast majority of single-family and duplex homes in Memphis, the

City of Memphis itself will be considered a single entity for the purposes of developing the city's waste reduction strategies. Thus, the City of Memphis, by volume alone, is the largest single generator of municipal solid waste in the city. To develop its strategies, the city will follow the principles listed above and will prioritize and implement recycling and diversionary programs to achieve the desired reduction. Additionally, long-term planning will be ongoing regarding collection facilities and education.

Other than small-quantity generators in the commercial sector that receive City of Memphis waste collection services, the vast majority of CII businesses in Memphis are responsible for disposing or recycling their own wastes-- usually by contracting with private waste haulers.

Early indications show that large industries and some commercial businesses in Memphis have already reduced their waste stream significantly. With the doubling of landfill disposal fees by BFI in July 1991, many large-quantity generators began looking at other ways to handle their waste. Perhaps the largest reduction in disposal has come from corrugated cardboard being separated and recycled. Source reduction measures may have also contributed to reduction.

For Memphis to accurately address the issue of waste reduction and recycling, it will require the assistance and cooperation of landfill operators, recycling processors, and the management of CII businesses. This will be an ongoing process in which accurate records must be kept.

The City of Memphis Division of Public Works estimates that 55 percent of the city's municipal waste is generated by commercial, industrial, and institutional uses in the city. The remaining 45 percent originates in the residential sector. To achieve the required 25 percent waste reduction goal, Memphis must encourage recycling, composting, and source reduction strategies among CII uses as well as in the residential sector. It will be important for the city to build a program of guidance and education for the business sector.

Memphis estimates that 20 percent of the reduction in the CII sectors will be due to recycling and five percent will be due to source reduction. It is estimated that 16 percent of the reduction in the residential sector will be due to composting, eight percent due to recycling, and one percent

due to source reduction.

The city hopes to reduce its solid waste by 16 percent by the end of 1993 (ten percent from CII uses, six percent from residential), by 20 percent by the end of 1994 (12 percent from CII uses, eight percent from residential), and by 25 percent by the end of 1995 (15 percent from CII uses, ten percent from residential).

Reduction of waste by recycling for CII uses in Memphis is projected to be: 75 percent from recycling corrugated cardboard; 15 percent from recycling metals (steel, aluminum, brass, and copper); eight percent from recycling paper (high, low, and mixed grades); and two percent from recycling other materials.

Reduction of waste by residential uses in Memphis is projected to be: 91 percent from diverting, composting, or mulching yard waste; eight percent from the city's curbside recycling program (65 percent newsprint, 20 percent glass, seven percent aluminum cans, five percent steel cans, and three percent plastics); and one percent from other reductions.

Memphis plans to conduct a waste stream study in 1994 to more precisely determine the city's solid waste composition, volume, and sources-- both in the residential sector and in the CII sector. The city also plans to expand its education program for the public and the business community to promote recycling, composting, and source reduction. Memphis hopes to develop and institute monitoring and documentation procedures to determine the success/failure of local waste reduction programs.

b. Staffing

Memphis plans to hire additional management, clerical, and operational staff as required as its recycling and composting programs expand.

c. Funding and Budget

Memphis plans to fund its waste reduction efforts through monthly service fees, funds from the Bureau of Solid Waste Management, and perhaps other public/private funds. Approximately \$250,000 will be spent in FY '93 on waste reduction efforts. Subsequent annual budgets will likely increase to facilitate the city's efforts

to meet its waste reduction goals.

d. Implementation Schedule

- 1994 > Expand curbside recycling program.
- > Expand composting program at EARTH Complex.
- > Expand yard waste diversion program.
- > Initiate a pilot backyard composting program.
- > Increase public education initiatives.
- > Begin a CII recycling awareness campaign.
- > Develop a study to determine volume, composition, and sources of local waste.
- > Purchase two or more recycling trucks for curbside program.
- > Purchase an industrial grade tub grinder.

- 1995 > Expand curbside recycling, yard waste diversion, and backyard composting programs.
- > Increase public education initiatives.
- > Establish a household hazardous waste collection program.
- > Achieve and document a 25 percent reduction in waste.

- 1996 > Expand number of recyclables in curbside program.
- > Expand recycling program to include multifamily dwellings.
- > Accept bids for processing curbside recyclables.

- 1997-2003 > Achieve city-wide recycling for all residential units.
- > Possibly construct a major materials recovery facility (MRF) in Memphis.
- > Establish a comprehensive education program for all public and private schools in Memphis.
- > Establish a commercial and industrial recycling council to promote recycling among local businesses.
- > Recruit recycling-related industries to Memphis.

7. Millington

a. Strategies

The City of Millington's plans for achieving the 25 percent solid waste reduction goal are predicated on meeting the following criteria:

- > Identify the sources and generators of solid waste in Millington including residential, commercial, industrial, and institutional generators.
- > Evaluate alternative processing capabilities.
- > Evaluate alternative collection programs.
- > Select desired process.
- > Budget for implementation.
- > Train collection personnel.
- > Educate the public and business community about waste reduction including recycling and composting.
- > Monitor the process through documentation.

For planning purposes, Millington estimates that 75 percent of the city's solid waste is being generated by residential uses with 25 percent being generated by commercial, industrial, and institutional uses. The City of Millington Department of Public Works is responsible for collecting all residential solid waste in the city. Local solid waste contractors are responsible for collecting solid waste from CII uses.

To meet the 25 percent reduction goal from the residential sector, Millington estimates that 15 percent of the 25 percent reduction goal will be effected by composting, seven percent by recycling, and three percent by source reduction.

For the commercial, industrial, and institutional sectors in Millington, the city estimates that 20 percent of the 25 percent waste reduction goal will be due to recycling with five percent due to source reduction measures.

Millington estimates that the city will reach an approximate 19 percent reduction by the end of 1994 (12 percent from the CII sectors and seven percent from the residential sector). By the end of 1995, the total 25 percent reduction will have been met-- 15 percent from the residential sector and ten percent from the CII sectors.

For the residential waste reduction program, Millington estimates that 85 percent of the total reduction will be from yard waste diversion (composting/mulching), 13 percent from recycling,

and two percent from other reduction efforts. In the recycling program, Millington estimates that 65 percent of the reduction will be due to recycling newsprint and cardboard, 20 percent from glass, eight percent from plastics, and seven percent from aluminum.

For CII recycling efforts, Millington estimates that 70 percent of the reduction will be from recycling corrugated cardboard, 15 percent from metals, 13 percent from paper, and two percent from other commodities.

b. Staffing

Management, operational, and clerical staff required for the city's waste reduction efforts will be added as needed.

c. Funding and Budget

Millington's waste reduction efforts will be funded from monthly service fees and solid waste services operating funds.

Millington plans to develop a drop-off recycling center as well as a mulching program for city residents. Approximately \$80,000 has been budgeted for Fiscal Year 1994 for funding the city's solid waste reduction program. This amount includes salaries for employees of the mulching program, funds for the city's drop-off recycling center, and hauling fees and labor. Subsequent budgets will reflect increases as needed to meet the city's reduction goals.

d. Implementation Schedule

- 1994 > Increase public education.
- > Expand yard waste diversion program.
- > Expand Christmas tree and leaf mulching program.
- > Expand drop-off recycling center.
- > Monitor waste stream quantities.

- 1995 > Expand yard waste mulching program.
- > Increase public education.
- > Participate in household hazardous waste program.
- > Continue drop-off recycling center/
consider pilot curbside recycling program.

- 1996 > Continue public education.

- > Expand recycling program.
- > Continue yard waste mulching and leaf composting programs.
- > Establish a city solid waste planning board.

1997-

- 2003
- > Continue public education.
 - > Expand recycling program.
 - > Continue yard waste mulching and leaf composting programs.

8. Unincorporated Shelby County

a. Strategies

Shelby County Government's plans for achieving a 25 percent reduction of solid waste are predicated on meeting the following criteria:

- > Determining the composition of solid waste from unincorporated areas of Shelby County.
- > Identifying the sources/generators of solid waste.
- > Itemizing the solid waste by volume.
- > Cosponsoring efforts to establish alternative processing capabilities.
- > Prioritizing what is to be collected.
- > Determining how prioritized waste will be collected.
- > Budgeting.
- > Planning and implementing recycling and waste reduction programs in county-owned/county-operated facilities.
- > Providing alternative collection programs.
- > Gathering solid waste data from the commercial sector concerning waste reduction efforts, recycling, and composting.
- > Monitoring through documentation the progress of waste reduction efforts as programs begin and data become available.

Although the Solid Waste Management Act of 1991 places primary responsibility for compliance with waste reduction goals on county governments, several special factors may affect Shelby County Government's efforts to comply. They include:

- > Shelby County is an urban county with a majority of its citizens residing in incorporated areas. Therefore, major reductions in the county's solid waste must come from the incorporated areas-- particularly, from the city of Memphis.

- > In addition to numerous annexations of unincorporated areas by Shelby County municipalities, rural areas of the county are rapidly being developed-- primarily as single-family subdivisions. This influx of people into the formerly rural areas of the county will affect net gains in the county's waste reduction efforts.
- > New subdivisions produce a different waste composition from older, more-established neighborhoods. Trees and shrubs in recently developed subdivisions are normally young and thus produce less yard waste than other, more mature plants in areas such as Midtown Memphis, East Memphis, and Germantown. Waste reduction efforts in new subdivisions, therefore, will need to focus on the prevention of high-yield, yard waste conditions rather than the diversion of established yard waste yields.
- > Rural areas in Shelby County have traditionally lacked access to professional solid waste collection services. Rural residents have employed a variety of disposal methods including hauling waste directly to landfills, disposing of waste on individual properties, and illegally burning waste. Increased education and greater availability of solid waste collection services likely will increase solid waste volumes reported for unincorporated Shelby County.

Due to these special factors, the reduction of waste in unincorporated areas (though important) is perhaps a secondary emphasis of Shelby County Government. The primary role of Shelby County Government will be to parallel that of the Shelby County Municipal Solid Waste Region Board in serving as a communications hub that encourages and facilitates waste reduction initiatives in the various municipalities in the county.

Consequently, to address waste reduction in unincorporated areas, Shelby County will follow the fundamental principles listed above and will prioritize and implement recycling and other diversion programs to achieve the desired reduction goals. Shelby County will continue to encourage the ongoing efforts of local municipalities to prioritize and implement their own programs.

Long-term planning for solid waste collection

services in the unincorporated areas of the county is ongoing. Shelby County will continue to provide educational programs to support waste reduction in all areas of the county.

Commercial, industrial, and institutional businesses in the county are responsible for disposing or recycling their own wastes-- usually by contracting with private waste haulers. Together, these businesses represent the largest portion of the waste volume in unincorporated Shelby County with an estimated 55 percent of the total volume.

It must first be determined what waste reduction programs the business sector has implemented since 1989. Early indications are that many local industries and some commercial businesses have already reduced their wastes significantly. With the doubling of landfill disposal fees by BFI in July 1991, many large-quantity waste producers immediately began looking for alternative disposal methods. Perhaps the largest reduction in CII waste disposal has come from recycling corrugated cardboard. Source reduction, very likely, is a significant factor in local waste reduction efforts.

For Shelby County Government to accurately address the issue of waste reduction and recycling, the county will need the assistance and cooperation of local landfill operators and all commercial, industrial, and institutional businesses. Data collection will be an ongoing process. Based on this information, Shelby County will build a program of guidance, education, and assistance in solid waste reduction efforts in the business community.

For planning purposes, Shelby County Government estimates that 55 percent of the waste in unincorporated Shelby County originates in the commercial, industrial, and institutional sectors. The remaining 45 percent originates in the residential sector.

The 25 percent reduction of residential waste will be achieved by composting (17 percent), recycling (five percent), and source reduction/prevention efforts (three percent). Ninety-one percent of the total waste reduction will be due to landscape planning or diverting, composting, and mulching yard waste. Eight percent will be due to recycling (approximately four percent in curbside

recycling programs and four percent by residents voluntarily hauling recyclables to commercial recyclers). One percent of the reduction will be due to other reduction initiatives. In the residential recycling program, 65 percent of the reduction will be due to recycling newsprint, 20 percent glass, seven percent aluminum cans, five percent steel cans, and three percent plastics.

The reduction of waste by CII businesses will be achieved by recycling (20 percent) and source reduction efforts (five percent). By material, CII businesses are expected to reduce their waste volumes by recycling corrugated cardboard (75 percent); metals, such as steel, aluminum, brass, and copper (13 percent); paper (ten percent); and other materials (two percent).

The county estimates that in 1993, the waste volume for unincorporated areas was reduced from 1989 levels by 16 percent (ten percent from CII uses and six percent from residential uses). In 1994, the county projects that the waste will be reduced by 19 percent (12 percent from CII and seven percent from residential). In 1995, the county projects that waste will be reduced by 25 percent (15 percent from CII and 10 percent from residential).

b. Staffing

Additional management, clerical, and operational staff will be employed as recycling and educational programs are expanded. Possibly, more office staff and an unknown number of supervisory and operational staff will be needed. Staffing will be dependent on the adjustment of current numbers of personnel and the level of related services.

c. Funding and Budget

Funding for Shelby County's waste reduction efforts will be provided by the county's general fund, the budget of the Bureau of Solid Waste Management, public/private funds, and possibly service fees.

Current waste reduction programs have been handled in-house as adjuncts of regular staff duties without specific additional allocations. However, specific allocations are likely in the future as more programs are implemented to achieve the State of Tennessee's waste reduction goal.

d. Implementation Schedule

- 1994 > Expand curbside recycling through private contracts as feasible.
- > Increase public education.
- > Expand yard waste diversion.
- > Initiate a pilot backyard composting program.
- > Strive for a 15 percent reduction in residential waste volumes.
- > Begin a commercial recycling awareness campaign and survey.
- > Collect waste reduction data from the commercial sector.

- 1995 > Expand curbside recycling through private contracts as feasible.
- > Increase yard waste diversion.
- > Implement low-maintenance lawn education initiative.
- > Expand emphasis on composting.
- > Increase public education.
- > Achieve and document a 25 percent reduction of residential and commercial wastes.
- > Establish procedures for the disposal of household hazardous waste.

- 1996 > Expand recycling opportunities for multifamily dwellings.
- > Expand the number of recyclables collected by residential programs.

- 1997-2003 > Achieve county-wide curbside recycling (if not yet accomplished).
- > Possibly construct new recycling facilities in area to broaden marketing opportunities.
- > Increase recycling activities in accordance with State of Tennessee goals.
- > Update staffing and budget as needed.
- > Update comprehensive education program for public and private schools.
- > Cosponsor with municipalities a commercial and recycling council to promote and increase recycling opportunities.
- > Actively recruit recycling-related industries to Shelby County.

F. COLLECTION OF DATA AND PREPARATION OF ANNUAL PROGRESS REPORTS

Monitoring the progress of the municipal solid waste regional plan through the collection of data and the preparation of annual progress reports will be the responsibility of Shelby County Government by the direction of the Shelby County Municipal Solid Waste Region Board. Shelby County Government will designate the specific agency or agencies charged with these responsibilities.

Table IV-1

Population and Quantity of Waste Disposed of
at Municipal Solid Waste Disposal Facilities and Incinerators,
1989

Shelby County

1989
Population
(Estimated)

1989
Total Waste Disposed
in Tons
(Estimated)

825,700

1,362,405

Table IV-2

Estimated Quantities of Waste Removed or Diverted
from the Waste Stream

Shelby County

| Year | Previous Reductions | Recovered/ Recycled | Diverted to Alternative Disposal | Economic Incentives | Other | Total |
|--------------------|------------------------|------------------------|--|------------------------|---------|-----------|
| 1985 to 1989 | Unknown * | | | | | |
| 1990 | Unknown * | | | | | |
| 1991 | Unknown * | | | | | |
| 1992 | Unknown * | | | | | |
| 1993 | Unknown * | | | | | |
| 1994 | | 83,399 | 166,799 | 0 | 27,800 | 277,998 |
| 1995 | | 111,735 | 209,503 | 0 | 27,934 | 349,172 |
| Subtotal | | 195,134 | 376,302 | 0 | 55,734 | 627,170 |
| 1996 | | 112,274 | 210,513 | 0 | 28,068 | 350,855 |
| 1997 | | 112,815 | 211,527 | 0 | 28,204 | 352,546 |
| 1998 | | 113,358 | 212,547 | 0 | 28,340 | 354,245 |
| 1999 | | 113,905 | 213,572 | 0 | 28,476 | 355,953 |
| 2000 | | 114,448 | 214,590 | 0 | 28,612 | 357,650 |
| 2001 | | 114,746 | 215,149 | 0 | 28,687 | 358,582 |
| 2002 | | 115,010 | 215,645 | 0 | 28,753 | 359,408 |
| 2003 | | 115,306 | 216,199 | 0 | 28,827 | 360,332 |
| Total | | 1,106,996 | 2,086,044 | 0 | 283,701 | 3,476,741 |

* Although considerable waste reductions likely occurred during these years (particularly after July 1991), the amount of reduction cannot be documented.

NOTE: 1994 totals represent a 20 percent reduction. Totals for 1995 and subsequent years represent 25 percent reductions.

Table IV-3

Reduction of the Waste Stream by Materials, 1995

Shelby County

| Category | 1989 Calculated Regional Tons | 1995 Calculated Regional Tons | 25 Percent Waste Reduction |
|----------------------------------|-------------------------------------|-------------------------------------|----------------------------------|
| Paper/Paperboard | 544,962 | 558,675 | 139,669 |
| Glass | 95,368 | 97,768 | 24,442 |
| Ferrous Metals | 88,556 | 90,785 | 22,696 |
| Aluminum | 19,074 | 19,554 | 4,888 |
| Other Non-ferrous Metals | 8,174 | 8,380 | 2,095 |
| Plastics | 108,992 | 111,735 | 27,934 |
| Rubber/Leather | 34,060 | 34,917 | 8,729 |
| Textiles | 28,611 | 29,330 | 7,333 |
| Wood | 49,047 | 50,281 | 12,570 |
| Food Waste | 100,818 | 103,355 | 25,839 |
| Yard Waste | 239,783 | 245,817 | 61,454 |
| Miscellaneous Inorganic Waste | 20,436 | 20,950 | 5,238 |
| Other | 23,161 | 23,744 | 5,936 |

Table IV-4
 Reduction of Waste Stream by Sector, 1995
 Shelby County

| Sector | Percent of Total | 1989 Estimated Regional Tons | 1995 Projected Regional Tons | 25 Percent Waste Reduction |
|------------------------------|------------------------|---------------------------------------|---------------------------------------|----------------------------------|
| Residential | .35 | 476,842 | 488,840 | 122,210 |
| Commercial/ Institutional | .30 | 408,722 | 419,006 | 104,752 |
| Non-hazardous Industrial | .25 | 340,601 | 349,172 | 87,293 |
| Special | .10 | 136,241 | 139,669 | 34,917 |

Table IV-5

Quantity of Solid Waste Requiring Disposal
 (Adjusted for Population Change)
 With Waste Reduction Goals

Shelby County

| Year | Solid Waste Projected | Waste Reduction Percent | Waste Reduction Total |
|------|-----------------------|-------------------------|-----------------------|
| 1994 | 1,389,988 | .20 | 277,998 |
| 1995 | 1,396,687 | .25 | 349,172 |
| 1996 | 1,403,419 | .25 | 350,855 |
| 1997 | 1,410,182 | .25 | 352,546 |
| 1998 | 1,416,980 | .25 | 354,245 |
| 1999 | 1,423,810 | .25 | 355,953 |
| 2000 | 1,430,603 | .25 | 357,651 |
| 2001 | 1,434,327 | .25 | 358,582 |
| 2002 | 1,437,630 | .25 | 359,408 |
| 2003 | 1,441,326 | .25 | 360,332 |

CHAPTER V. WASTE COLLECTION AND TRANSPORTATION

A. EXISTING REGIONAL COLLECTION SYSTEM

Each of the seven municipalities in Shelby County now provides waste collection services for their residents-- either through a system operated by the municipality itself or through contract with BFI or Waste Management. By all accounts, these collection systems/companies are providing first-quality services and are more than adequately meeting the needs of citizens in incorporated areas.

However, Shelby County Government does not offer a solid waste collection system for citizens living in unincorporated areas of the county. In these areas, it is up to the individual householder (or multifamily community) to contract with private collection companies for services. Shelby County Government has no requirement that householders contract with any waste collection company for the collection of household waste. Householders are free to dispose of their wastes in any legal manner.

B. REGIONAL NEEDS

The region's greatest solid waste collection need is to assure that adequate waste collection services are offered to all households in Shelby County-- particularly, in the unincorporated sections of Shelby County.

Other waste collection needs in Shelby County will be met by the individual collection departments of the municipalities or by their solid waste collection contractors.

C. WASTE COLLECTION/TRANSPORTATION GOAL

Goal: Assure that first-quality solid waste collection and transportation services are available to all residents and businesses in Shelby County.

D. MEETING THE NEEDS

1. Service Areas

All collection/transportation services in the incorporated areas in Shelby County provide high-quality services for their subscribers/customers and

are expected to continue to provide the same in the future. Whatever additional/expanded services in Shelby County are required due to future growth-- through natural increases in the population, through annexations, or through expansion of local business activities-- are expected to be met by the municipal collection departments or their solid waste contractors.

2. Collection Facilities and Vehicles

No additional transfer stations; nor intermediate processing facilities, convenience centers, or alternative collection systems; are planned by the municipalities or private collection companies in Shelby County at this time. Collection vehicles will be purchased as needed by the municipalities and private waste haulers.

3. Integration with Recycling and Problem Waste Collection Programs

The Shelby County waste collection system is fully integrated with local recycling programs. Community recycling programs in Germantown and Lakeland are operated by BFI. In Arlington, the recycling program is operated by Waste Management. Waste collection services and recycling programs in Bartlett, Collierville, and Memphis are operated jointly by their public works departments.

The initiation of a problem waste collection program for Shelby County is addressed in Chapter X.

4. Staffing Needs

Management, operational, and clerical staff required by municipal collection systems and private collection companies will be added as needed.

5. Capital and Annual Operating Budgets

Future capital and annual operating budgets for municipal and private collection companies are not available. However, all collection departments/ companies in Shelby County have indicated that they will address any future capital and annual operating budgets demands as required to maintain first-quality collection services for residents of Shelby County.

Funding for municipal waste collection services will continue to be derived from solid waste collection fees, other fees, general fund transfers, and other local sources.

6. Implementation Schedules

Since no new facilities for solid waste collection services in Shelby County have been proposed, an implementation schedule has not been included. Any planned expansions of waste collection services in general for the municipal governments are included in Section E of Chapter IV in the "Implementation Schedule" sections in each city's waste reduction plan.

E. FUTURE SOLID WASTE COLLECTION SERVICES FOR UNINCORPORATED SHELBY COUNTY

Shelby County Government recently has received commitments from both BFI and Waste Management to offer solid waste collection and recycling services to all sections of unincorporated Shelby County. (Copies of the letters from BFI and Waste Management pertaining to this are included in Appendix F.) With these arrangements, collection services will now be available to any household in unincorporated Shelby County agreeing to pay for the services offered.

F. COLLECTION OF DATA AND PREPARATION OF ANNUAL PROGRESS REPORTS

The collection of data and the preparation of annual reports required by the State of Tennessee will be the responsibility of the agency/agencies designated by Shelby County Government. Funding from the State of Tennessee will be sought by Shelby County to cover the costs of collecting data and preparing the annual reports.

G. PLAN UPDATES

Plan updates will be prepared by an agency of Shelby County Government. Updates will be prepared as directed by the State of Tennessee.

CHAPTER VI. RECYCLING

A. REGIONAL NEEDS

Although there are numerous recycling programs now operating in Shelby County, the great majority of households in Shelby County still do not have access to curbside recycling programs. It is estimated that approximately 32,500 households in Shelby County now are participating in curbside recycling services. The remaining 271,000 households (or 89 percent) have access to no recycling services or to limited recycling services only-- those being provided by drop-off recycling programs offered by civic organizations or private interests (or in the case of Bartlett, by a joint project by the city and private interests).

In addition, many commercial, industrial, and institutional operations in Shelby County have not established recycling programs.

B. VALUE TO THE COMMUNITY

Government-operated recycling programs, both curbside and drop-off, usually represent sizable investments for local governments. Costs for recycling may vary from program to program but usually include salaries for management and operational personnel, purchase of recycling vehicles and collection bins, hauling/transportation fees, promotional expenses, and sometimes contractual, commodity marketing, and shipping expenses. Because prices for recyclables in the marketplace are very low, virtually no community can expect to cover the costs of establishing and operating a recycling program with the proceeds from the sale of recyclables. The greatest value of recycling programs to local governments is the lowering of solid waste disposal costs by reducing the amount of waste going to landfills and incinerators. It is these savings that help make recycling programs cost-effective ventures for local governments.

Recycling programs also offer opportunities for communities to enhance civic pride, demonstrate concern for the environment, and encourage wiser and more productive uses for resources.

C. RECOMMENDED ACTIONS

1. Recycling Goals and Objectives

- Goal: Increase recycling opportunities for residents and businesses in Shelby County.
- Objective: Emphasize recycling of yard wastes in the residential sector; paper products in the commercial and institutional sectors; and paper, wood, plastic, and other materials as warranted in commercial, industrial, and institutional sectors.
- Objective: Create new recycling opportunities for residents of single-family and multifamily dwellings, for students, and for employees of businesses, government offices, and schools.
- Objective: Emphasize convenience and voluntary participation in recycling programs.
- Objective: Provide informational, educational, and promotional material and programs to facilitate high levels of participation in recycling programs and to achieve reduction in the generation of waste.

2. Strategies for Expanding Recycling Programs

It is recommended that the City of Memphis expand its recycling program to eventually include all households served now (or in the future) by the city's solid waste collection department. To help offset the costs of adding recycling collection services, regular waste collection services could be reduced from the current two collections per week to one waste collection service and one recycling collection service each week.

It is recommended that the waste collection firms that serve unincorporated Shelby County be encouraged to offer recycling services to all single-family households in the unincorporated areas of the county.

It is recommended that each of the cities in Shelby County (other than Memphis) eventually provide curbside recycling collection services to all single-family households within their respective corporate limits

and/or provide attended, drop-off collection centers for all households within their limits.

It is recommended that Shelby County Government and the

governments of Memphis and the other municipalities in the county encourage private waste haulers now providing collection services for multifamily housing units and businesses in their areas of jurisdiction to provide recycling services for these households and businesses as well.

It is recommended that local governments encourage individual businesses to establish recycling plans and programs for their employees.

It is recommended that all local government offices establish in-house recycling programs.

It is recommended that Memphis expand its local schools recycling partnership program to include all schools, both public and private, within the city of Memphis. It is recommended that an in-school recycling program be developed and instituted for all schools located in municipalities other than Memphis and in unincorporated sections of the county.

Most residential recycling programs in Shelby County collect aluminum cans; clear, green, and brown glass; newspapers; and HDPE and PET plastics. It is recommended that all future residential recycling programs, both newly established and expanded, include these materials as the basic group of recyclables collected. Operators of the various recycling programs are encouraged to collect, on a trial basis, other materials such as metal cans, cardboard, or other commodities to determine the feasibility of adding these items to the list of basic recyclables.

3. Description of Planned Recycling Programs

a. Type of System

The recycling services designed for single-family households in Shelby County should be developed by the individual municipalities in the county.

The system designed for local single-family residences should consist primarily of curbside recycling programs. However, some municipalities may elect to be served by drop-off collection centers rather than curbside programs.

Multifamily households should have access to recycling programs offered by private waste haulers and/or local governments.

Recycling programs for businesses should be offered by local waste haulers. The design of in-

house recycling programs by and for individual businesses should be encouraged by local governments.

Recycling programs for government offices and local schools should be designed and operated by the individual local governments with the support of the city and county school boards.

b. Size of Proposed Programs

It is a goal of this plan that eventually all 327,796 households in Shelby County will have access to curbside or drop-off recycling services. Recycling programs for all local businesses should be encouraged but not mandated. All government offices and schools should have access to recycling services developed specifically for their needs.

c. Estimated Quantity of Materials Diverted from Landfills

Shelby County, as well as all counties in the state, will be required to divert at least 25 percent of its municipal waste from landfills during Calendar Year 1995. The 25 percent reduction goal represents a diversion of approximately 314,890 tons of municipal waste from the amount generated in the county in 1989.

d. Approximate Service Area

It is recommended that all single-family and multifamily households within Shelby County eventually have access to recycling services.

4. Description and Location of New Collection Services

All municipalities in Shelby County are encouraged to offer curbside or drop-off center recycling services for their communities. It is recommended that private waste haulers serving residential areas in unincorporated Shelby County be encouraged to offer curbside recycling programs, if possible, to all single-family households as part of their standard collection services.

Private companies also should be encouraged to establish buy-back centers or drop-off convenience centers in areas where curbside programs are not available.

5. Description and Location of Regional Processing System

All facilities owned or operated by Shelby County's numerous recycling processors should be considered integral parts of Shelby County's regional processing system.

6. Cooperation in Market Activities

It is assumed that most local recycling programs initially will use BFI's Memphis Recyclery in North Memphis or one of several other private recycling firms (such as Dixie Recycling, H. Blockman, Memphis Waste Paper, Smurfit Recycling, etc.) operating in the Memphis area to accept their recyclables. Marketing the collected recycled goods should be the responsibility of the recycling processors although local governments should assist the processors in marketing their goods whenever possible.

7. Interaction with the Office of Cooperative Marketing

The municipalities in Shelby County should seek the advice and assistance of the State of Tennessee Office of Cooperative Marketing (OCM) whenever needed and should participate in collective marketing programs sponsored by the OCM if possible.

8. Creation/Expansion of Markets

Each of the eight governments in Shelby County should establish specific policies to encourage the purchase and use of recycled or recovered materials by local government offices and operations. Currently, only the City of Germantown has a policy that encourages the use of recycled materials. The establishment of such policies would send a positive message to local businesses that Shelby County and its municipalities are serious in their support of recycling and are at the forefront in local efforts to purchase, procure, and use recycled materials.

The Memphis Area Chamber of Commerce has discussed the development of a regional waste exchange but no formal action has been taken. It is recommended that the chamber pursue this idea.

The chamber should also be instrumental in developing economic incentives for the creation of local businesses that manufacture new products from recovered materials. Local governments should also cooperate with the Chamber of Commerce to attract new recycling-related businesses to Shelby County.

9. Education Programs

Local agencies such as the Shelby County Environmental Improvement Commission, the Memphis City Beautiful Commission, the Recycling Office of the Memphis Division of Public Works, and the staffs of the environmental/city beautiful commissions and public works departments of the smaller Shelby County municipalities have the responsibility to educate local citizens about source reduction and recycling and encourage participation in such programs. These groups should continue and expand their efforts and seek the support of each other to promote all local education programs.

10. Staffing Plan

Because each municipality (and Shelby County Government for unincorporated Shelby County) is responsible for developing recycling programs for their own communities, providing the proper staff will be the responsibility of each individual government. It is recommended that each government designate a recycling coordinator for their community. Other recycling staff positions required by local governments should be determined by each government individually and provided accordingly.

11. Budget

Each local government will be responsible for developing its own recycling program budget. While projected recycling program budgets for the individual governments are not available at this time, all governments have agreed to provide funds for their recycling programs as required.

12. Funding Plan

Sources for funding local recycling programs may include contributions from the general funds of the various municipalities, collection fees and other fees, recycling program proceeds, recycling rebates from the State of Tennessee, the Roadside Litter Grant Program, and other public and private funds.

13. Annual Progress Reports

Annual progress reports to the state on regional recycling efforts and the use of recovered materials should be prepared by an agency designated by Shelby County Government. Specific information required for the reports should be determined through consultation with the staff of the State of Tennessee Department of

Environment and Conservation.

Although some local municipalities operate their own collection services and some contract with private haulers for collection, the responsibility for collecting data for each municipality remains with each municipal government. Data collection should be the responsibility of the public works departments of each city or other department as designated by the municipality.

Data collected by local governments should be obtained from the various public works departments, waste haulers/processors, and local businesses operating recycling programs. A standardized reporting form for these groups has been developed by the Shelby County Municipal Solid Waste Region Board.

D. COORDINATION WITH PRIVATE AND NON-PROFIT SECTOR PROGRAMS

The Shelby County Municipal Solid Waste Region Board should oversee the coordination of government-sponsored recycling programs with private and non-profit sector programs through a designated agency of Shelby County Government. The agency's staff should handle the day-to-day responsibilities of coordination.

E. IMPLEMENTATION SCHEDULE

Future implementation schedules for recycling programs in the individual municipalities are presented in the waste reduction plans outlined in Chapter IV.

F. ALLOCATION OF RESPONSIBILITIES

The overall responsibility for assuring that all recycling initiatives by the individual municipalities in Shelby County are in conformance with the Shelby County Solid Waste Plan rests with Shelby County Government through the Shelby County Municipal Solid Waste Region Board. The board should verify that all recycling programs and initiatives are in place and operating by January 1, 1995, to enable Shelby County and its municipalities to attain their 25 percent reduction goals by December 31, 1995.

However, the implementation of recycling activities for each municipality will be the responsibility of the individual municipal governments and that of Shelby County Government for unincorporated Shelby County.

G. LOCATIONS OF FACILITIES

Figure XI-2 indicates the service areas of all existing and proposed community recycling programs.

CHAPTER VII. COMPOSTING, SOLID WASTE PROCESSING,
WASTE-TO-ENERGY, AND INCINERATION CAPACITIES

A. REGIONAL NEEDS

Shelby County does not have a comprehensive composting program designed to serve the needs of all its citizens. Two composting facilities with limited services are now operating in Shelby County and a third facility is planned.

Shelby County has one large, regional solid waste processing facility. BFI's Memphis Recyclery is located in North Memphis. Several other local processors (such as Dixie Recycling, H. Blockman, Memphis Waste Paper, Smurfit Recycling, and others) also offer waste processing facilities.

The only waste-to-energy program in the county is the pilot project operated by TR Systems at the Allen Fossil Fuel Plant. The Allen plant "burns" the chips for a fuel additive.

B. GOALS

Goal: Increase composting/mulching opportunities for residents and businesses in Shelby County.

Goal: Encourage the development of solid waste processing and waste-to-energy programs and facilities in Shelby County by private industry.

Goal: Encourage the development and expansion of markets for recycled and composted products.

C. PLANS FOR FACILITIES

1. Composting Facilities

The largest composting facility now operating in the county is the pilot project at the EARTH Complex facility managed by the City of Memphis Division of Public Works. The program accepts yard wastes, mostly grass clippings and leaves, collected by the Memphis Light, Gas, and Water Division and the Memphis Park Commission. The facility does not accept yard wastes from other municipalities nor does it allow individual citizens to dispose of yard wastes there. Memphis has

plans to turn the pilot program into a permanent program with the eventual goal of diverting all of the city's yard wastes from Class I landfills.

The City of Bartlett grinds grass clippings, tree limbs, stumps, Christmas trees, and wooden debris and stockpiles the chips for use as mulch. The mulch is provided to city residents free of charge at a city-owned facility. Bartlett plans to purchase additional equipment and an adjacent tract of land for expansion of the facility.

BFI has plans to eventually develop a composting facility at its North Shelby Landfill. This facility will have a capacity of 9,075 tons per year.

2. Solid Waste Processing Facilities

BFI opened its \$1.5 million Memphis Recyclery in 1991 to serve the Memphis metropolitan area. Design capacity of the facility is approximately 100 tons of waste per day. The Memphis Recyclery currently accepts newspapers, various grades of paper, aluminum cans, steel cans, cardboard, glass, and HDPE and PET plastics.

Several other companies in Memphis and Shelby County also provide waste processing facilities for the public. Among the larger processors are Dixie Recycling, H. Blockman, Memphis Waste Paper, and Smurfit Recycling.

3. Waste-to-Energy Facilities

TR Systems is testing the "burning" of chipped waste tires to produce a fuel additive at the Allen Fossil Fuel Plant in Southwest Memphis. TR Systems estimates that hundreds of thousands of waste tires could be processed annually if the trial program is successful and is approved for full-time operation.

4. Incinerators

In Shelby County, there are no incinerators designed specifically for the disposal of municipal solid waste. However, several small incinerators dispose of medical waste, chipped brush and yard waste, and animal carcasses.

D. FUTURE DEVELOPMENT OF FACILITIES

The following section describes the steps the region will take in developing or expanding the facilities and programs

mentioned above.

1. EARTH Complex

Memphis' composting facility is located in Southwest Memphis on a six-acre site at the EARTH Complex. The operation uses windrows to compost organic yard wastes (grass clippings, leaves, and wooden debris). The yard wastes are mixed with wastewater sludge from the city's nearby T.E. Maxson South Wastewater Treatment Plant. The facility's waste stream is now limited to yard wastes collected by City of Memphis crews.

When the composting program begins full operation, Memphis estimates that as much as 18 to 20 percent of the city's current solid waste stream will be diverted from Class I landfills. The objective of the composting program is to eventually process all of the city's organic yard wastes. It is estimated that as much as 7,000 cubic yards of compost can be processed at any one time.

The yard wastes will be stockpiled at the EARTH Complex and processed with a tub grinder. The windrows will be periodically turned by a windrow turner. The windrows will be placed on asphalt pads with runoff diverted to the Maxson wastewater plant. Residuals to be disposed of are projected to be no more than five percent of the total amount of compost processed. The residuals will be transported to a Class I landfill.

Prospective markets for the compost material include the City of Memphis' uses internally, local plant nurseries, and other selected retail outlets.

The permitting agency for the facility will be the Tennessee Department of Environment and Conservation Division of Solid Waste Management.

Capital costs for the composting facility are estimated to be between \$1.5 million and \$2 million. Staffing for the facility will come from current employees of the Memphis Division of Public Works.

Projected budgets or revenues for the program have not yet been developed.

2. Bartlett Mulching Facility

The Bartlett Mulching Facility is located at 6222 Old Brownsville Road in Bartlett. The facility grinds grass clippings, tree limbs, stumps, Christmas trees, and wooden construction debris to produce a mulch for area residents. The objective is to divert as much

organic waste as possible from being landfilled.

Bartlett is planning to purchase a new, six-acre site west of the existing site to expand the mulching operation. Capital costs to purchase the land and equipment have been estimated at \$300,000 or more. The site will be permitted through the State of Tennessee and constructed and staffed by City of Bartlett employees. The facility will employ one equipment operator and two laborers.

Few residuals are expected from the operation. Whatever residuals there are will be landfilled.

An operation and maintenance budget for the facility has not been developed at this time.

3. BFI North Shelby Landfill Composting Facility

Information regarding future plans for this facility is not available at this time.

4. BFI Recyclery

Information regarding future plans for this facility is not available at this time.

5. TR Systems/Allen Fossil Fuel Plant Waste Tire Program

Because the Allen tire program is a pilot project, no future facility development plans have been included here. If the tire program is approved and funded for full-time operation in the future, more detailed information will be provided in a future update of this plan.

E. LOCATIONS OF FACILITIES

Figure XI-2 indicates the locations of all existing and planned composting, solid waste processing, waste-to-energy, and incineration facilities.

CHAPTER VIII. DISPOSAL CAPACITY

A. FUTURE CLASS I LANDFILLS

In future years, it is projected that no more than 75 percent of the solid waste generated each year in Shelby County will be disposed of in landfills or incinerated. This figure represents the portion of Shelby County's solid waste that will not be diverted, recycled, composted, or otherwise processed or reduced.

Shelby County's solid waste will continue to be landfilled at the two existing landfills in Shelby County-- BFI North Shelby Landfill and BFI South Shelby Landfill-- and at the Knox Landfill near Houston, Mississippi. In the future, a portion of the county's waste may also be disposed of at the planned EARTH Complex Landfill or a proposed landfill near Gallaway, Tennessee. The remaining or projected capacities of the landfills existing or planned for Shelby County (BFI-North Shelby, BFI-South Shelby, and EARTH Complex) are presented in Table II-11. Figure XI-2 indicates the locations of the three Class I landfills.

B. REGIONAL DEMAND VERSUS REGIONAL SUPPLY

Table VIII-1 presents the projected tons of Shelby County's waste that will require landfill disposal in the years 1993 through 2003 and the supply of landfill space in Shelby County (existing and planned capacities) for those years. Table VIII-1 indicates that Shelby County will have a surplus of landfill space each year through 2003.

C. PROTECTING EXCESS CAPACITY

Because Shelby County is expected have excess capacity in its landfills for years to come, the "protection" of its excess landfill capacity is not seen as a major concern by most local government officials. However, in 1993, Shelby County was receiving for disposal a relatively small amount of solid waste (60,827 tons) that originated outside its borders. Because the amount of waste imported to Shelby County currently is small, it is not anticipated that imported waste will pose a serious threat to the future capacities of Shelby County's landfills. However, if the amount of imported waste increases dramatically in the

future, this could have a significant impact on Shelby

County's landfills.

With the approval of a regional solid waste plan, the Shelby County Municipal Solid Waste Region Board has the authority to control the amount of waste being imported into Shelby County. However, there are no plans to exercise this authority at this time.

Because it is anticipated that Shelby County will have excess landfill space through the end of the planning period of this document (through 2003), no plans for replacement capacity or expanded capacity, are being formulated at this time. The anticipated update of Shelby County's solid waste plan in 1998 may address this issue at that time.

D. DISPOSAL GOALS

Goal: Assure that first-quality solid waste disposal services are available to all residents and businesses in Shelby County.

Goal: Assure that landfills in Shelby County have adequate capacities in future years to meet the county's future disposal needs.

E. PLANNED LANDFILLS

The only landfill planned for development in Shelby County at this time is the EARTH Complex Landfill located at the Frank C. Pidgeon Industrial Park in southwestern Shelby County.

This landfill will be a Class I facility consisting of approximately 285 acres. Access will be from the north along the proposed Riverport Road connecting to the existing Plant Road and then south along an existing access road. In April 1994, the State of Tennessee gave its approval for the City of Memphis to develop the EARTH Complex Landfill.

Specific information on the landfill's capital costs, financing plan, staffing and training needs, operation and maintenance plan, budget, and implementation schedule is not available at this time. No specific timetable has been set for opening the facility. However, for the purposes of this planning document, it has been assumed that the EARTH Complex Landfill will be open and ready to accept waste some time in 1996.

Table VIII-1

Projected Demand and Supply and Identification of Potential Shortfalls or Surpluses in Disposal Capacity

Shelby County

| Year | Demand: Tons of Waste Requiring Disposal * | Supply: Existing and Planned Capacity | Surplus (+) |
|------|---|--|-------------|
| 1993 | 1,383,320 | 18,809,856 | 17,426,536 |
| 1994 | 1,389,988 | 17,426,536 | 16,036,548 |
| 1995 | 1,396,687 | 16,036,548 | 14,639,861 |
| 1996 | 1,403,419 | 19,215,861 | 17,812,442 |
| 1997 | 1,410,182 | 17,812,442 | 16,402,260 |
| 1998 | 1,416,980 | 16,402,260 | 14,985,280 |
| 1999 | 1,423,810 | 14,985,280 | 13,561,470 |
| 2000 | 1,430,603 | 13,561,470 | 12,130,867 |
| 2001 | 1,434,327 | 12,130,867 | 10,696,540 |
| 2002 | 1,437,630 | 10,696,540 | 9,258,910 |
| 2003 | 1,441,326 | 9,258,910 | 7,817,584 |

* Adjusted only for population growth and assuming no waste reduction.

Table VIII-2
 Projected Net Disposal Capacity
 Shelby County

| Year | Tons (+/-) |
|------|--------------|
| 1993 | +17,426,536 |
| 1994 | 16,036,548 |
| 1995 | 14,639,861 |
| 1996 | 17,812,442 * |
| 1997 | 16,402,260 |
| 1998 | 14,985,280 |
| 1999 | 13,561,470 |
| 2000 | 12,130,867 |
| 2001 | 10,696,540 |
| 2002 | 9,258,910 |
| 2003 | 7,817,584 |

* Projected opening of EARTH Complex Landfill.

CHAPTER IX. PUBLIC INFORMATION AND EDUCATION

A. REGIONAL NEEDS

Public information and education services in Shelby County for solid waste management and other environmental issues are currently the responsibilities of several local agencies. Among them are the Shelby County Environmental Improvement Commission; the Memphis City Beautiful Commission; the Recycling Office of Memphis Division of Public Works; and the city beautiful commissions, environmental commissions, and public works departments of the smaller municipalities. These offices provide a wide range of educational information on local environmental topics and encourage citizen participation in local environmental programs.

The greatest educational needs are for (1) a reassessment of existing solid waste management educational programs and (2) the development and implementation of new programs to help citizens better understand solid waste issues, management options and costs, and the values of recycling, composting, and waste reduction.

B. MEETING THE NEEDS

1. Education Goals and Objectives

Goal: Increase environmental education programs and information services for citizens and businesses in Shelby County.

Objective: Focus educational efforts on reducing paper waste from the commercial sector and yard waste from the residential sector.

2. Target Groups and Audiences

Local educational agencies should consider all citizens of Shelby County as their audiences. However, they should look specifically to (1) government employees, (2) students, (3) business owners and employees, as well as (4) the general public, as the principally defined groups.

3. Information To Be Provided

a. Government Employees

The educational agencies should assist in implementing in-house recycling programs for all local government offices. Information should be provided to encourage participation among employees and train section leaders and employees who will promote the programs.

The educational agencies should help establish incentive programs in cooperation with their local purchasing departments to purchase and procure recycled content products for use in daily governmental activities as well as in construction projects.

b. Students

Local agencies should continue to promote the existing environmental education programs in grades K through 6 and work to expand the programs in grades 7 through 12.

The educational agencies should initiate in-house recycling programs in local schools with the goal of having all schools participating by 1995.

Local agencies should encourage recycling programs and environmental curricula development in area schools, colleges, and universities.

c. Business Owners and Employees

The educational agencies should continue to support the Memphis Area Chamber of Commerce's efforts to promote recycling among member businesses and should continue to support local waste collection companies' programs to reduce waste going to landfills.

d. General Public

The agencies should continue to utilize the local media to educate the public about the values of recycling, composting, and waste reduction.

Local educational agencies should continue to participate in community-wide events offering opportunities to advance environmental education.

4. Methods To Be Utilized

a. Government Employees

- > Develop printed guidelines and other supporting material to promote government employee in-

house recycling programs.

- > Offer awards of merit for quality participation in recycling programs.
- > Expand existing programs.

b. Students

- > Utilize existing and new environmental curricula in schools.
- > Promote environmental issues in schools.

c. Business Owners and Employees

- > Develop workshops, conferences, and informational material for employees of local businesses to promote environmental issues.
- > Establish a recognition and award system for businesses supporting recycling initiatives.

d. General Public

- > Develop workshops, conferences, and informational material for local citizens.
- > Use the local media to promote environmental initiatives.
- > Distribute environmental newsletters.
- > Participate in/promote/sponsor local events such as the Good Earth Festival, composting education programs of the Memphis Botanic Garden, recycling education programs at the Children's Museum of Memphis, local Christmas tree recycling programs, and other local events and programs.
- > Establish a speakers bureau to serve the general public.

5. Staff and Budget Needs

Each individual education agency will be responsible for environmental education within its respective area of jurisdiction.

It is recommended that each local government in Shelby County designate a recycling coordinator/information officer for its community. Other recycling information positions required by local governments should be

determined by each government and provided accordingly.

6. Funding Plan

Funding for the various information positions authorized by the municipal governments in Shelby County should come from the general funds of each community, recycling grants offered by the State of Tennessee, or other appropriate sources.

7. Evaluation and Reporting

The Shelby County Municipal Solid Waste Region Board will review annually the efforts and progress of all local educational programs.

C. IMPLEMENTATION SCHEDULE

- | | |
|---------------|--|
| 1994 | > Reassess existing educational programs. |
| | > Identify additional funding sources for new programs/staff. |
| | > Develop additional staffing positions (if necessary). |
| | > Begin in-house recycling programs for local governments. |
| | > Create incentive programs for local government purchase of supplies with recycled content. |
| 1995 | > Implement in-house recycling programs for all local schools. |
| | > Develop speakers bureau. |
| 1996 | > Evaluate new programs. |
| 1997 | > Modify/terminate/continue/expand new programs. |
| 1998- 2003 | > Continue monitoring programs. |

CHAPTER X. PROBLEM WASTES

A. HOUSEHOLD HAZARDOUS WASTES

Household hazardous wastes consist of such items as household cleaners, paints, pesticides and other household poisons, and similar products. If these materials are poured down a drain or thrown in the garbage and landfilled or burned, toxic residues could contaminate groundwater or the air. Therefore, proper disposal of HHW is important.

1. Goal

Goal: Assure that residents of Shelby County have access to collection and disposal services for household hazardous waste and other problem wastes.

2. Current Handling and Disposal Practices

Shelby County currently has no organized program to collect and dispose of HHW. Most of the HHW is now disposed of at the two landfills in the county.

3. State Provisions Regarding the Establishment of Urban Household Hazardous Waste Collection Sites

The Solid Waste Management Act of 1991 (Tennessee Code Annotated Sections 68-211-828 and 68-211-829) outlines the State of Tennessee's provisions for establishing permanent HHW collection sites in the four major cities in Tennessee and providing mobile HHW collection services to other residents of the state. The act reads

68-211-828: "From funds available from the solid waste management fund, the state planning office shall award competitive grants for collection of household hazardous waste at a permanent site to municipalities with a population of one hundred thousand (100,000) or more in counties with a population of two hundred eighty-seven thousand seven hundred (287,700) or more, according to the 1980 Federal Census, or any subsequent Federal Census...."

68-211-829: "From funds available from the solid waste management fund, the department (the Department of Environment and Conservation) shall

provide, directly or by contract, mobile collection units to provide collection of household hazardous wastes on designated days in each county...."

The Tennessee Department of Environment and Conservation Division of Solid Waste Assistance, through correspondence directed to county and municipal officials in Shelby County, indicates that its interpretation of sections 68-211-828 and 68-211-829 is that the mobile sweeps program is not available to Shelby County. Upon review of Section 68-211-829, it is very clear that the State of Tennessee will provide mobile collection units for each county in Tennessee. Consequently, a request has been made by Shelby County to provide mobile sweeps to unincorporated portions of Shelby County as well as the municipalities located outside the city of Memphis.

The State of Tennessee, under the authority of Section 68-211-828, has made available grants for initiating permanent household hazardous waste collection sites for the four metropolitan cities. Through previous correspondence, the State of Tennessee has communicated to City of Memphis officials that the City of Memphis would be responsible for serving the entire county if awarded such a grant.

The City of Memphis has reviewed the act with respect to this interpretation by the State of Tennessee. Memphis officials believe the act is very clear and leaves no room for such interpretation. The City of Memphis has no intention of providing a permanent household hazardous waste collection service for the entire population of Shelby County. Furthermore, it is the city's intention to not pursue the one-time-only, \$500,000 grant for household hazardous waste collection-- but rather participate in the mobile sweep program for Shelby County as clearly provided for in Section 68-211-829.

Correspondence related to this appears in Appendix F.

B. OTHER PROBLEM WASTES

1. Waste Tires

Tires discarded in landfills are bulky, consume large amounts of landfill space, and often work to the surface of a closed landfill disturbing its final cover. Illegal tire dumps are unsightly and can be hazardous. Discarded tires can provide a place for mosquitoes and vermin to breed. When scrap tires burn,

the flames are hard to extinguish and can fill the air with toxic pollutants.

According to the Tennessee Department of Revenue, 551,105 new tires were sold in Memphis and Shelby County in 1993. However, since Memphis and Shelby County serves as a retail/wholesale trade center for West Tennessee, North Mississippi, East Arkansas, and Southeast Missouri, it can be assumed that a certain percentage of the new tires sold in Shelby County in 1993 were to residents of areas outside Shelby County. As these tires wear out, it is very likely that the owners will dispose of their tires in their home counties-- rather than returning the tires to Shelby County for disposal.

It is estimated that the local discard rate for used tires is approximately one tire per person per year. With Shelby County's 1993 population estimated at 838,376 persons, it is assumed that approximately 800,000-plus used tires were discarded by Shelby County residents and businesses in 1993.

Currently, waste tires are still being accepted at both landfills in Shelby County although an extra tipping fee is assessed for each whole tire landfilled. However, after December 31, 1994, whole tires will no longer be accepted for disposal at landfills in Tennessee; only shredded or chipped tires will be landfilled.

Shelby County currently has two tire shredding/chipping sites. One is owned and operated by the City of Memphis Division of Public Works. The tire shredder is located at 1514 North Bellevue in North Memphis. This operation provides year-round services for residential and commercial customers and serves as an official tire shredder for the State of Tennessee. Five employees provide staff for the shredder. In Fiscal Year 1992, a total of 157,567 waste tires were shredded in the operation. The tires are disposed of in the Class I landfills in Shelby County.

The second shredding operation is operated by TR Systems at the Allen Fossil Fuel Plant, 2574 Plant Road, in Southwest Memphis. TR Systems chips the tires. The chips are then transported to the Allen plant where they are burned as a fuel additive. In the pilot program, TR Systems has accepted waste tires from Shelby County, other counties in Tennessee, and from locations in Mississippi and Arkansas. Because the Allen tire program is experimental, no exact figures are available for the number of tires chipped and burned since the beginning of the pilot program. These figures will be available in the future if the program

is expanded to a full-time operation.

The Pollution Control Section of the Memphis and Shelby County Health Department inventoried landfills and dump sites (tire dump sites as well as others) in Shelby County in 1991. The Pollution Control Section located 25 illegal dump sites and one unpermitted (illegal) landfill in the county.

The State of Tennessee will provide grants to counties to identify and remove scrap tire dumps. Each county will be eligible to receive a \$10,000 grant. It is recommended that Shelby County apply for a grant to address this problem.

2. Waste Oil and Other Used Automotive Fluids

There is no officially organized program in Shelby County to collect and dispose of waste oil and other used automotive fluids. However, a number of local businesses now accept waste oil for disposal. These businesses advertise their disposal services through listings in The Commercial Appeal and the Yellow Pages of the Greater Memphis Telephone Directory. A list of local companies accepting waste oil is presented in Table II-12.

The current system of collecting waste oil in Shelby County by the private sector is the only system available to local residents. Although the service is valuable, it likely collects only a small portion of the waste oil generated in Shelby County. No estimates are available for the amount of waste oil recovered annually in Shelby County.

It is recommended that waste oil collection be a part of the mobile HHW collection service sponsored by the state for Shelby County residents.

3. Lead-acid Batteries

There is no concerted effort or officially sanctioned program in Shelby County to collect lead-acid batteries. However, retailers in Tennessee are now required to accept used batteries for trade-in.

It is recommended that a lead-acid battery collection program be included in the mobile household hazardous waste collection service for Shelby County.

4. Litter

The anti-litter campaign in Memphis is led by the

Memphis City Beautiful Commission. MCBC sponsors the Glad "Bag-a-thon", a promotional campaign that encourages a city-wide clean-up effort in the spring. In 1993, 7,500 persons representing more than 100 groups and organizations participated. Approximately 4,300 bags of litter were collected. MCBC is able to keep tabs on litter-reduction efforts in Memphis by use of a photometric index developed by Keep America Beautiful. The photometric index uses random sampling to determine an increase or decrease in litter. In 1993, the index indicated that Memphis had reduced its litter by 56 percent from 1992.

MCBC also sponsors two recognition programs for reducing litter-- the Yard-of-the-Month program for residences and the Beautiful Business Award program for area businesses.

The commission also operates a 24-hour telephone hotline for motorists to report littering and illegal dumping. If motorists are able to report the license tag number for offenders, MCBC sends a letter, along with a free litter bag, to discourage littering and dumping in the future.

Several of the smaller municipalities in Shelby County also have city beautiful commissions or environmental commissions that sponsor anti-litter education programs and clean-up campaigns in their communities similar to the programs of the MCBC.

The anti-litter agencies in Shelby County have established excellent records in cooperating and coordinating their efforts with the municipal solid waste management departments in each municipality.

CHAPTER XI. IMPLEMENTATION: SCHEDULE, STAFFING, AND FUNDING

A. SYSTEM DEFINITION

1. Recapitulation of Shelby County's Integrated Waste Management System

The estimated population of Shelby County in 1989 was 825,700. The county's population is projected to increase to 846,477 in 1995 and 873,531 in 2003. Employment in Shelby County is expected to increase at a slow-to-moderate rate through 2003.

In 1989, Shelby County generated approximately 1,362,405 tons of municipal solid waste (about 1.65 tons per person). It is projected that the amount of solid waste generated in Shelby County in 1995 will be 1,396,687 tons and 1,441,326 tons in 2003. Shelby County as a whole and each of its municipalities are committed to achieving the 25 percent solid waste reduction goal mandated by the State of Tennessee for 1995. Therefore, in 1995, the county must landfill no more than 1,047,515 tons (or 75 percent) of the projected generation figure and must otherwise recycle, compost, mulch, divert, or reduce the remaining 349,172 tons (25 percent).

Local municipal governments and Shelby County Government for unincorporated Shelby County have developed a variety of strategies for reducing solid wastes in their areas of jurisdiction. Reduction percentages for the strategies vary from jurisdiction to jurisdiction. However, for Shelby County as a whole, the 25 percent reduction goal is expected to be met by diversion (ten percent), recycling (eight percent), composting/mulching (five percent), and source reduction (two percent).

The Shelby County Municipal Solid Waste Region Board has developed a series of goals to guide the implementation of Shelby County's Solid Waste Plan. They are:

- > Reduce by 25 percent the amount of Shelby County's solid waste being disposed of in Class I landfills.
- > Assure that first-quality solid waste collection and transportation services are available.
- > Increase recycling opportunities.
- > Increase composting/mulching opportunities.

- > Encourage the development of solid waste processing and waste-to-energy programs and facilities by private industry.
- > Encourage the development and expansion of markets for recycled and composted products.
- > Assure that first-quality solid waste disposal services are available.
- > Assure that landfills in Shelby County have adequate capacities in future years to meet the county's future disposal needs.
- > Increase environmental education programs and information services.
- > Assure that residents of Shelby County have access to collection and disposal services for household hazardous waste and other problem wastes.

Each municipality in Shelby County will continue to operate its own solid waste collection system or contract with a waste collection company for services. BFI and Waste Management have agreed to offer collection services to all residents of unincorporated Shelby County.

Municipalities in Shelby County will continue to use the two BFI landfills located in Shelby County for disposal of their solid wastes. Some solid waste produced in Shelby County will be disposed of at Waste Management's Knox Landfill near Houston, Mississippi.

The City of Memphis plans to proceed with the development of the EARTH Complex Landfill in Southwest Memphis with its opening targeted for 1996.

The City of Memphis has requested that the State of Tennessee provide residents of Memphis with HHW collection and disposal services through the state's mobile collection program. The Shelby County Municipal Solid Waste Region Board has requested that the State of Tennessee also offer the mobile collection service to other municipalities in Shelby County and residents of unincorporated Shelby County.

Local public information and education programs are expected to receive continued support from local governments and stand at the forefront in helping local governments meet their waste reduction goals.

Implementation of the waste reduction plans for each municipality will be the responsibility of each municipal government. Shelby County Government will direct the implementation of the waste reduction plan for unincorporated Shelby County. The Shelby County Municipal Solid Waste Region Board will monitor local waste reduction efforts for compliance with the

provisions of the Shelby County Solid Waste Plan.

2. Waste Flow Diagram

The proposed waste flow system for Shelby County is depicted in Figure XI-1. Major components of the system include landfilling, diversion, recycling, composting/mulching, and source reduction measures. Figure XI-1 presents components of the system as projected for Calendar Year 1995.

3. Composite Map

A composite map of the future regional solid waste system is presented in Figure XI-2. The map, entitled "Future Composite Solid Waste Management System for the Shelby County Region", includes both existing and planned/proposed elements in several categories: solid waste collection services, community recycling programs, composting/mulching programs and facilities, Class I landfills, construction/demolition landfills, waste-to-energy programs/incinerators, transfer stations, major facilities for the processing of recyclables, educational programs, and miscellaneous programs and facilities. Many of the elements are site specific and are indicated so on the map. However, some programs serving a city or general area are indicated by being listed adjacent to the name of the municipality. A key guide follows the map. Some future programs and facilities not yet approved but under consideration are indicated with the notation "(?)" following their listing in the key guide. The sites for several proposed facilities have not been selected. These are indicated with the notation "(Not Sited)".

4. Institutional Structure

Shelby County Government bears the ultimate responsibility for carrying out the provisions of the Shelby County Municipal Solid Waste Regional Plan. However, the governments of the individual municipalities in the county bear the responsibility for carrying out the provisions of the plan as applied to their own communities.

Implementing the plan for Shelby County Government will be the responsibility of the Shelby County Municipal Solid Waste Region Board.

B. STATUTORY AND REGULATORY DEADLINES

Listed below are the major statutory and regulatory

deadlines of future significance to counties in Tennessee.

- 7/1/94 > Submit regional solid waste plan to State of Tennessee.
- 1/1/95 > Provide at least one site for the collection and storage of unshredded waste tires, lead-acid batteries, and used oil.
- 1/1/95 > Assure that a county-wide collection and disposal system is in place.
- 3/1/95 > Submit annual progress report to state.
- 12/1/95 > Meet the 25 percent waste reduction goal.
- 1/1/96 > Provide one or more sites for the collection of recyclables.

C. COMPOSITE IMPLEMENTATION SCHEDULE FOR MAJOR SYSTEM MILESTONES

Listed below is the implementation schedule for major solid waste system milestones for Shelby County as a whole.

- 1994 > Expand local recycling and composting programs.
> Expand local public information and education programs.
> Achieve a 20 percent reduction in the amount of solid waste being landfilled or incinerated.
- 1995 > Continue to expand recycling and composting programs.
> Continue to expand local public information and education programs.
> Establish a permanent household hazardous waste collection service for Memphis and Shelby County.
> Assure solid waste services are available to all residents of unincorporated Shelby County.
> Achieve and document a 25 percent reduction in the amount of solid waste being landfilled or incinerated.
- 1996 > Develop and open EARTH Complex Landfill.
- 1997-2003 > Offer recycling and composting services to all residents of Shelby County.

D. STAFFING AND TRAINING REQUIREMENTS

Each local government will be responsible for staffing and

training their own personnel or for contracting with solid waste management companies to provide the required personnel to maintain and expand solid waste services.

Due to the complexities of Shelby County's current solid waste management system (seven local jurisdictions providing waste management services and/or contracting with private waste collection companies, two large-scale waste collection companies, several smaller waste collection companies, a private operator of Class I landfills in the county, numerous recycling and composting/mulching programs, five major and many minor processors of recyclables, numerous educational programs for citizens and public and private schools, etc.), a precise accounting by system element of all current, authorized solid waste management personnel in Shelby County is not available. Likewise, it is not feasible to prepare a ten-year, county-wide staffing plan (by system element and year), with target dates for filling new positions and projecting training and certification needs.

E. BUDGET

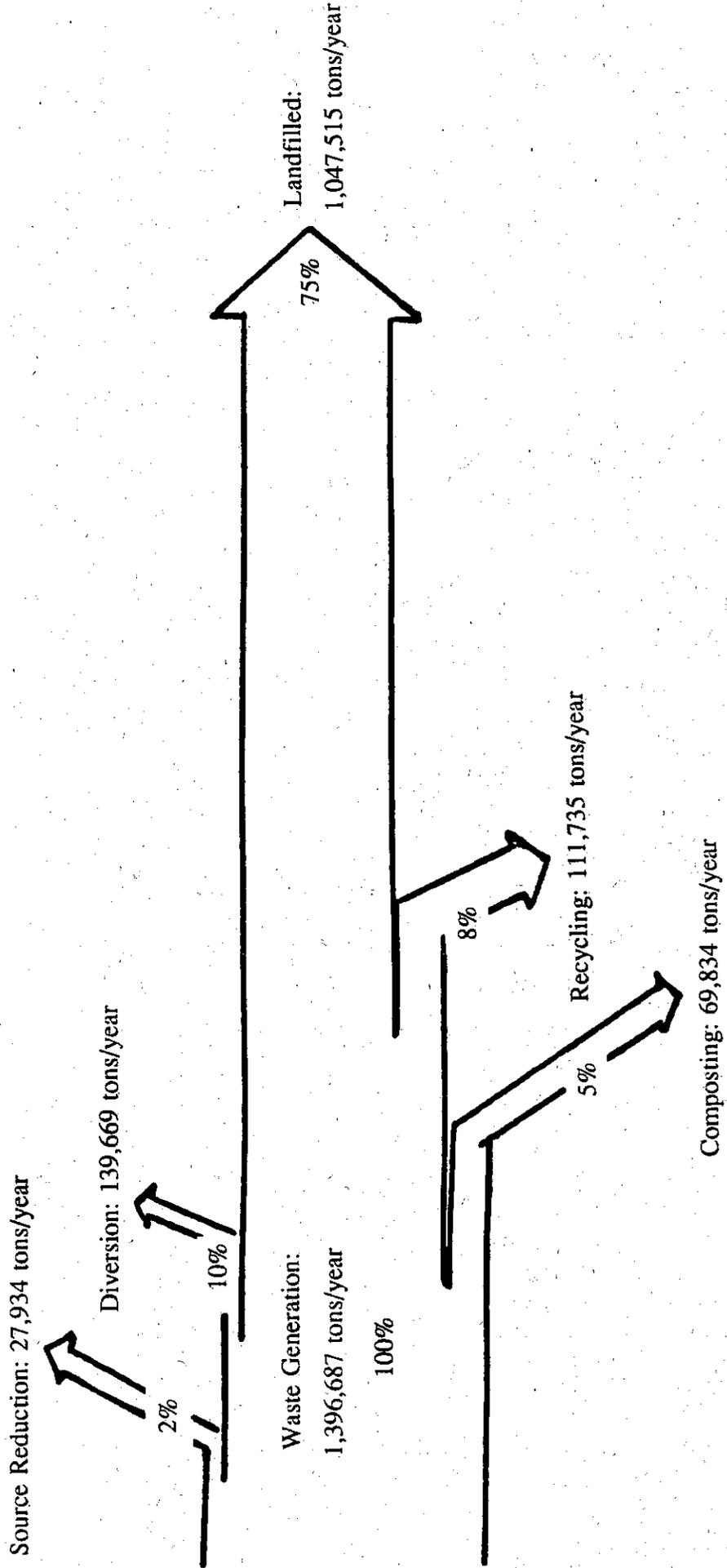
Each local government will be responsible for providing the revenues needed to assure first-quality solid waste services for their constituents. Funding sources include collection fees, other solid waste management fees, transfers from general funds, grants, etc.

As noted in Section D above, the complexities of Shelby County's solid waste management system preclude the preparation of capital and annual operation and maintenance budgets for each system element. Capital projects will be developed and funded by the individual municipalities. Local governments have several options in funding capital projects. These include bond issues, loans, grants, or other funding sources. Developing funding schedules for capital projects will remain the prerogative of each individual government.

Private waste management companies will be responsible for generating the resources needed to make improvements in privately owned facilities.

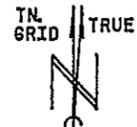
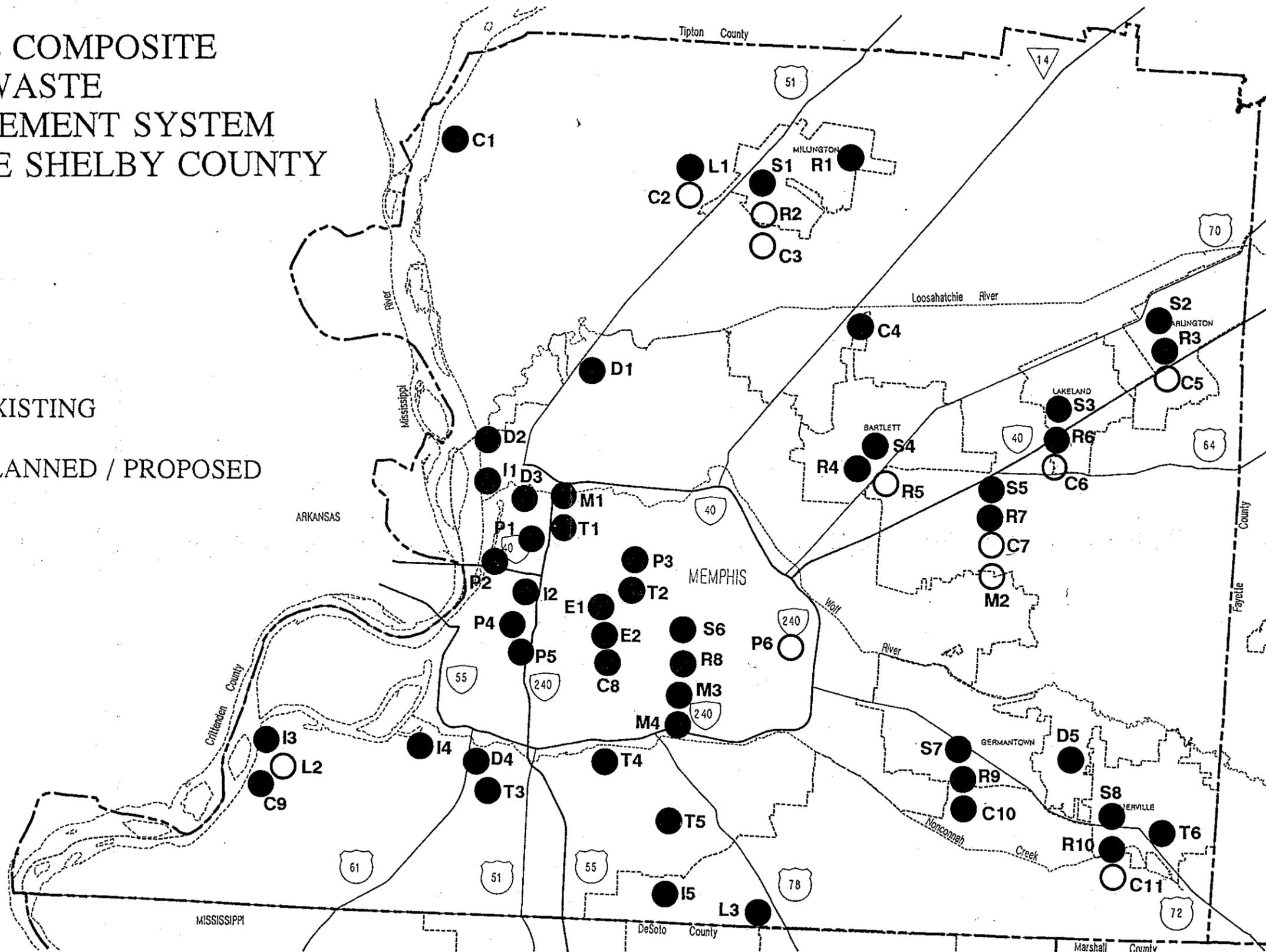
FIGURE XI-1

WASTE FLOW DIAGRAM FOR THE SHELBY COUNTY REGION



FUTURE COMPOSITE SOLID WASTE MANAGEMENT SYSTEM FOR THE SHELBY COUNTY REGION

- EXISTING
- PLANNED / PROPOSED



SHELBY COUNTY MUNICIPAL SOLID WASTE REGIONAL PLAN

Memphis and Shelby County
Division of Planning and Development
Geographic Information System

Scale: 1" = 18,057'

Date: 05/20/94

FIGURE XI-2

KEY TO FIGURE XI-2

Solid Waste Collection Services

- S 1 City of Millington
- S 2 Town of Arlington
- S 3 City of Lakeland
- S 4 City of Bartlett
- S 5 Private Subscription Services for Residents of Unincorporated Shelby County and Commercial, Industrial, and Institutional Businesses Throughout the County (BFI, Waste Management, Others)
- S 6 City of Memphis
- S 7 City of Germantown
- S 8 Town of Collierville

Community Recycling Programs

- R 1 Memphis Naval Air Station at Millington
- R 2 Millington Drop-off Center (or Curbside (?))
- R 3 Arlington
- R 4 Bartlett Drop-off Center (?)
- R 5 Bartlett Curbside (?)
- R 6 Lakeland
- R 7 Private Subscription Services for Unincorporated Shelby County
- R 8 Memphis
- R 9 Germantown
- R10 Collierville

Composting/Mulching Programs and Facilities

- C 1 Shelby County-Shelby Forest Christmas Tree Project
- C 2 BFI Composting Facility
- C 3 Millington
- C 4 Bartlett
- C 5 Arlington
- C 6 Lakeland (?)
- C 7 Shelby County
- C 8 Memphis "Chipping of the Green" Christmas Tree Project
- C 9 Memphis EARTH Complex
- C10 Germantown
- C11 Collierville (?)

Class I Landfills

L 1 BFI-North Shelby
L 2 EARTH Complex
L 3 BFI-South Shelby

Class III and IV Landfills (Construction/Demolition Landfills)

D 1 Biggs
D 2 J.T. Woods
D 3 Chandler Wrecking
D 4 Memphis Wrecking
D 5 Norman Brown

Waste-to-Energy Programs/Incinerators

I 1 Memphis Small Animal Incinerator
I 2 Mid-South Regional Blood Center Incinerator
I 3 TR Systems/Allen Fossil Fuel Plant Waste Tire Program
I 4 BFI Health Management Incinerator
I 5 Wood Processing Incinerator

Transfer Stations

T 1 Bellevue Boulevard (Memphis)
T 2 Scott Street (Memphis)
T 3 Brooks Road (Memphis)
T 4 Democrat Road (Memphis)
T 5 Hatcher Circle (Waste Management)
T 6 South Street (Collierville)

Major Facilities for the Processing of Recyclables

P 1 Memphis Recyclery
P 2 H. Blockman
P 3 Dixie Recycling
P 4 Memphis Waste Paper
P 5 Smurfit Recycling
P 6 Memphis Materials Recovery Facility (?) (Not Sited)

Educational Programs

E 1 City of Memphis Board of Education
E 2 Shelby County Board of Education

Miscellaneous Programs and Facilities

- M 1 Memphis Tire Shredder
- M 2 Memphis and Shelby County Household Hazardous Waste
Collection Program (?)
- M 3 Memphis City Schools Recycling Program
- M 4 Memphis "Rebook" Telephone Recycling Program

CHAPTER XII. ALLOCATION OF IMPLEMENTATION RESPONSIBILITIES:
PLAN ADOPTION AND SUBMISSION

A. PLAN ADOPTION

The Shelby County Municipal Solid Waste Regional Plan was formally adopted by resolution of the Shelby County Municipal Solid Waste Region Board on June 13, 1994. A letter verifying this, signed by the chairman of the Shelby County Board, is included in Appendix E of this document.

The plan was formally accepted by the Shelby County Board of County Commissioners on June 20, 1994. A copy of this resolution, signed by the Mayor of Shelby County, is included in Appendix E of this document.

B. ADOPTION BY LOCAL SOLID WASTE AUTHORITY

Shelby County chose not to create a solid waste authority for the region.

C. REVIEW BY LOCAL PLANNING AGENCY

This plan was submitted for review and approval to the Memphis and Shelby County Division of Planning and Development (DPD). DPD serves as the official plans review agency for Memphis and Shelby County. A letter from the director of the division stating that the plan was reviewed and approved is included in Appendix E of this document.

D. SUBMISSION OF PLAN

Ten copies of the Shelby County Municipal Solid Waste Regional Plan were submitted to the Tennessee Department of Environment and Conservation Division of Solid Waste Assistance on June 30, 1994.

CHAPTER XIII. FLOW CONTROL AND PERMIT APPLICATION REVIEW

A. FLOW CONTROL MEASURES

The Solid Waste Management Act of 1991 authorizes regions with approved plans to exercise two types of flow control: out-of-region control and intra-region control.

1. Out-of-Region Flow Control

Out-of-region bans are permitted to allow a region to protect the capacities of its solid waste management facilities. An out-of-region ban must apply to all waste generated outside the region's boundaries or the ban may be invalid under the Interstate Commerce Clause of the U.S. Constitution. The Solid Waste Management Act of 1991 does exclude certain existing waste source arrangements from the exercise of flow control under a "grandfather" clause and an impairment-of-contract clause.

2. Intra-region Flow Control

Intra-region flow control is permitted to allow a region to address public health and safety and transportation management concerns in a coordinated manner. The Solid Waste Management Act of 1991 also permits a region to guarantee the waste flow as a revenue stream for financing bonds for municipal solid waste management facilities.

3. Decisions of the Board

The Shelby County Solid Waste Region Board has elected not to authorize flow controls on out-of-region or intra-region waste at this time. The board retains the right to exercise this authority in the future.

B. PERMIT APPLICATION REVIEW

The act also permits a municipal solid waste planning region with an approved plan to review plans for new solid waste disposal facilities or incinerators to determine whether the proposed facilities are consistent with the regional plan.

The Shelby County Board has not yet developed permit

application review procedures but will address this subject
in the future.

PART III

APPENDICES

APPENDIX A. LEGAL DOCUMENTATION AND ORGANIZATION OF THE REGION, AND COMPLIANCE WITH FINANCIAL ACCOUNTING REQUIREMENTS

I. LEGAL DOCUMENTATION AND ORGANIZATION

1. Resolution Establishing the Region and Board

A certified copy of the Shelby County resolution establishing the Shelby County Municipal Solid Waste Region and the Shelby County Municipal Solid Waste Region Board is included in Appendix A.

2. Description of the Board

A list of solid waste board members noting jurisdictions represented and terms of office is included in Table A-1. No official appointment letters nor records of confirmation of board members by the various legislative bodies in Shelby County are available at this time.

A list of the current officers of the Shelby County Board is included in Table A-2.

3. Solid Waste Authority

Shelby County elected not to form a solid waste authority.

4. Technical Advisory Committee

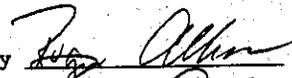
Members of the Shelby County Municipal Solid Waste Region Technical Advisory Committee are listed in Table A-3. A summary of the committee's activities and role follows Table A-3.

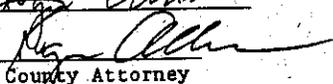
II. COMPLIANCE WITH FINANCIAL ACCOUNTING REQUIREMENTS

To assure that all municipal governments in Shelby County and Shelby County Government are complying with the financial accounting requirements of the Solid Waste Management Act of 1991, letters signed by the mayors or other designated officials of the municipalities and Shelby County Government are included in Appendix A.

Item # 25

Commissioner Sisson

Prepared by 

Approved by 

County Attorney

A RESOLUTION CREATING SHELBY COUNTY'S MUNICIPAL
SOLID WASTE PLANNING REGION AND ESTABLISHING A
MUNICIPAL SOLID WASTE REGION BOARD TO ADMINISTER
THE ACTIVITIES OF THIS REGION

WHEREAS, The adoption of the Subtitle D landfill regulations by the United States Environmental Protection Agency and companion regulations adopted by the Tennessee Solid Waste Control Board will impact on both the cost and method of disposal of municipal solid waste; and

WHEREAS, At the urging and support of a coalition of local government, environmental, commercial, and industrial leaders, the 97th Tennessee General Assembly enacted T.C.A. 68-211-801 et seq. titled "Solid Waste Management Act of 1991"; and

WHEREAS, With the view that better planning for solid waste will help control the additional costs that will be imposed by the new landfill regulations, help protect the environment, provide an improved solid waste management system, better utilize our natural resources, and promote the education of the citizens of Tennessee in the areas of solid waste management including the need for and desirability of reduction and minimization of solid waste, local governments in Tennessee supported and work for the passage of this Act; and

WHEREAS, One of the stated public policies of this Act is to institute and maintain a comprehensive, integrated, statewide program for solid waste management; and

WHEREAS, As per T.C.A. 68-211-811, the nine development districts in the State of Tennessee have completed a district needs assessment which are inventories of the solid waste systems in Tennessee; and

WHEREAS, Shelby County's Board of County Commissioners has given consideration to the needs assessment prepared by the Memphis Area Association of Governments 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 region plans which among other requirements must identify how each region will reduce its solid waste disposal per capita by twenty five per cent (25%) by December 31, 1995, and a planned capacity assurance of its disposal for a ten (10) year period; and

WHEREAS, The development of a municipal solid waste regional plan that results in the most cost effective and efficient management of solid waste is in the best interest of the citizens of Shelby County.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF SHELBY COUNTY, TENNESSEE, Acting pursuant to T.C.A. 68-211-801 et seq., that there is hereby established a Municipal Solid Waste Region for and by Shelby County, Tennessee; and

BE IT FURTHER RESOLVED, That pursuant to T.C.A. 68-211-813 (a)(2), that the Board of County Commissioners of Shelby County, Tennessee finds and determines that Shelby County shall be and shall constitute a single county municipal solid waste region due to the following: This one county planning region is identified and recommended in the District Solid Waste Needs Assessment prepared by the Memphis Area Association of Governments; and

BE IT FURTHER RESOLVED, That pursuant to T.C.A. 68-211-813(b)(1), a Municipal Solid Waste Region Board is hereby established to administer the activities of this Region; and

BE IT FURTHER RESOLVED, That this Municipal Solid Waste Region Board shall be comprised of thirteen members; and

BE IT FURTHER RESOLVED, That pursuant to T.C.A. 68-211-813(b)(1) the two Shelby County Board members shall be appointed by the County Mayor and approved by the Shelby County Board of County Commissioners and, due to the fact that Arlington collects or provides disposal services through its own initiative or by contract, the Town of Arlington shall have a Board member appointed by the Mayor of Arlington and approved by the Board of Aldermen of Arlington, and due to the fact that Bartlett collects or provides disposal services through its own initiative or by contract, the City of Bartlett shall have a Board member appointed by the Mayor of Bartlett and approved by the Board of Aldermen of Bartlett, and due to the fact that Collierville collects or provides disposal services through its own initiative or by contract, the Town of Collierville shall have a Board member appointed by the Mayor of Collierville and approved by the Board of Aldermen of Collierville, and due to the fact that Germantown collects or provides disposal services through its own initiative or by contract, the City of Germantown shall have a Board member appointed by the Mayor of Germantown and approved by the Board of Aldermen of Germantown, and due to the fact that Lakeland collects or provides disposal services through its own initiative or by contract, the City of Lakeland shall have a Board member appointed by the Mayor of Lakeland and approved by the Board of Commissioners of Lakeland, and due to the fact that Memphis collects or provides disposal services through its own initiative or by contract, the City of Memphis shall have five Board members appointed by the Mayor of Memphis and approved by the City Council of Memphis, and due to the fact that Millington collects or provides disposal services through its own initiative or by contract, the City of Millington shall have a Board member appointed by the Mayor of Millington and approved by the Board of Aldermen of Millington; and

BE IT FURTHER RESOLVED, That members of the Board of the Municipal Solid Waste Region shall serve a six (6) year term except that one member appointed by the County Mayor shall have a four (4) year term, that one member appointed by the County Mayor shall have a six (6) year term, that one member appointed by the Mayors of Arlington, Germantown, Memphis, and Millington shall have two year terms, that one member appointed by the Mayors

of Bartlett, and Lakeland and two members appointed by the Mayor of Memphis shall have four year terms, that one member appointed by the Mayor of Collierville and two members appointed by the Mayor of Memphis shall have six year terms; and

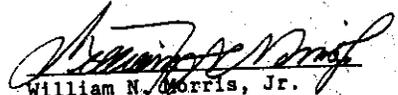
BE IT FURTHER RESOLVED, That this Municipal Solid Waste Region Board shall have all the powers and duties granted by the T.C.A. 68-211-813 et seq. and in addition, in the performance of its duty to produce a municipal solid waste region plan, it shall be empowered to utilize existing Shelby County governmental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

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

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

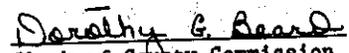
BE IT FURTHER RESOLVED, That Shelby County shall receive, disburse, and act as the fiscal agent for the administration of the funds of the Municipal Solid Waste Region and the Region's Board; and

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


William N. Morris, Jr.
County Mayor

Date Dec. 14, 1992

ATTEST:


Dorothy G. Beard
Clerk of County Commission

ADOPTED December 7, 1992

Table A-1

Members of the
Shelby County Municipal Solid Waste Region Board

| Member | Jurisdiction Represented |
|--|-----------------------------|
| Mr. Andy Ashford 125 North Main Street, Room 628 Memphis, Tennessee 38103 901-576-6868 To May 1995 | Memphis |
| Mr. Brandon Barker 6690 Chester Street Arlington, Tennessee 38002 901-867-2618 or 901-367-2063 To May 1995 | Arlington |
| Mr. Sam Beach 7700 Southern Avenue Germantown, Tennessee 38138 901-757-7352 To May 1995 | Germantown |
| Mr. Wilbur Betty 167 Washington Street Collierville, Tennessee 38017 901-853-3215 To May 1999 | Collierville |
| Ms. Karen Blanks 2680 Pershing Avenue Memphis, Tennessee 38112 901-320-3200 To May 1997 | Memphis |
| Mr. Mark Brantley 3840 Homewood Road Memphis, Tennessee 38118 901-794-3800 To May 1999 | Shelby County |

Mr. Jack Huffman
4701 Biloxi Street
Millington, Tennessee 38053
901-872-2229
To May 1995

Millington

Mr. Carl Johnson
125 North Main Street, Room 308
Memphis, Tennessee 38103
901-576-6559
To May 1997

Memphis

Mr. Dale Jones
10001 Highway 70
Lakeland, Tennessee 38002
901-372-3563
To May 1997

Lakeland

Mr. William Kilp
3585 Altruria Road
Bartlett, Tennessee 38134
901-385-5570
To May 1997

Bartlett

Mr. Benny Lendermon
125 North Main Street, Room 608
Memphis, Tennessee 38103
901-576-7109
To May 1999

Memphis

Mr. Paul Patterson
125 North Main Street, Room 628
Memphis, Tennessee 38103
901-576-6851
To May 1999

Memphis

Mr. T. A. Taylor
2062 Blakewood Place
Memphis, Tennessee 38106
901-942-3092
To May 1997

Shelby County

Table A-2

Officers of the
Shelby County Municipal Solid Waste Region Board

| Name | Position | Representing |
|---------------------|---------------|--------------|
| Mr. Benny Lendermon | Chairman | Memphis |
| Mr. Sam Beach | Vice-chairman | Germantown |
| Mr. Andy Ashford | Secretary | Memphis |

Table A-3

Members of the
Shelby County Municipal Solid Waste Region
Technical Advisory Committee

| Member | Agency/Company/Group Represented |
|-----------------------|--|
| Mr. Steve Andrews | Memphis Area Association of Governments |
| Mr. Hamp Dobbins | Shelby County Environmental Improvement Commission |
| Mr. Carter Gray | Memphis and Shelby County Health Department |
| Ms. Connie Hess | Hess Environmental Services |
| Mr. Albert Hutchinson | Citizens of Millington |
| Ms. Helyn Keith | Shelby County Environmental Affairs Office |
| Mr. Erwin Mitchell | Waste Management of Tennessee-Memphis |
| Mr. Dexter Muller | Memphis and Shelby County Division of Planning and Development |
| Mr. David Newsom | Shelby County Landfill |
| Mr. Jeff Reece | Memphis and Shelby County Division of Planning and Development |
| Mr. Bill Pete Tucker | Shelby County Mayor's Office |
| Mr. Mike Vinson | Citizens of Bartlett |

Structure and Role of the Shelby County
Municipal Solid Waste Region Technical Advisory Committee

A list of the members of the Shelby County Municipal Solid Waste Region Technical Advisory Committee appears in Table A-3. The members of the committee were approved by the Shelby County Municipal Solid Waste Region Board at their January 13, 1994, meeting.

The purpose of the committee is to assist the board in the preparation of Shelby County's solid waste plan and to provide further technical advice and assistance as requested by the board.

Members of the committee attended and participated in meetings of the board; provided specialized information needed for the final plan; developed, wrote, reviewed, and edited the final plan report; and provided legal advice to the board. Three subcommittees of the Technical Advisory Committee were formed to achieve specific goals: a Planning Subcommittee gathered financial and recycling information from the individual municipalities, a Waste Generation Subcommittee assisted the board with the development of the per capita waste generation figure used in the plan, and a Plan Review Subcommittee reviewed and edited the draft copy of the solid waste plan.

Because the members of the Technical Advisory Committee represent many constituencies of the Shelby County community at large, it is believed that committee members will continue to provide valuable assistance in supporting, promoting, and implementing the tenets of the solid waste plan.

TOWN OF ARLINGTON

5854 AIRLINE ROAD
ARLINGTON, TENNESSEE 38002-0507
901-867-2620

MAYOR
Maurice Gaines

VICE MAYOR
George Branch



ALDERMEN
R. L. Achelpohl
Brandon Barker
Allen Simpson
Gary Taylor
Mike Triplett

June 17, 1993

Division of Planning and Development
125 North Main Street Mall, Suite 468
Memphis, Tennessee 38112
Attn: Jeff Reece

RE: Financial Accounting Compliance Letter

Dear Mr. Reece:

This letter is to respond to the request of the Shelby County Solid Waste Planning Committee concerning compliance with T.C.A. 68-31-874(a) requirements for financial accounting. I, hereby, certify that the Town of Arlington has complied with these requirements by establishing a special revenue fund entitled "Solid Waste/Sanitation Fund.

If any further information is needed, please feel free to contact our office.

Sincerely,

Maurice Gaines
Mayor

dbw



City of Bartlett

Bobby K. Flaherty, Mayor

March 25, 1994

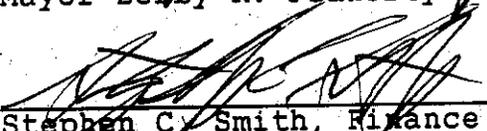
Jeff Reece, Principal Planner
Memphis and Shelby County Division of Planning & Development
125 North Main Street
Memphis, TN 38103

Dear Mr. Reece,

This letter is being written as certification that the City of Bartlett is in compliance with the State of Tennessee Solid Waste Management Act of 1991 with regard to the financial accounting requirements. The City of Bartlett has set up a separate fund entitled Solid Waste in the 1992-1993 fiscal year. This fund was audited by Deloitte and Touche for the 1992-1993 fiscal year and has been submitted to the Tennessee State Department of Audit and will be subject to annual independent audits in the future. If further information is needed, please let me know.

Sincerely,


Mayor Bobby K. Flaherty


Stephen C. Smith, Finance Director

SCS: smy

H.W. Cox, Jr., Mayor

H. Tom Brooks, Vice Mayor
Tommy A. Lott, Alderman
John E. Meeks, Register
Sidney E. Turnipseed, Alderman
George T. Walker, Alderman



Steven H. Schertel
City Administrator

Mary Lee Burley
City Clerk

Town of Collierville
COLLIERVILLE, TENNESSEE 38017

June 23, 1993

Mr. Jeff Reece
Division of Planning and Development
125 North Main Street Mall, Suite 468
Memphis, Tennessee 38112

Dear Mr. Reece:

In compliance with the provisions of the Solid Waste Management Act of 1991 and the financial accounting requirements of T. C. A. 68-31-874(a), the Town of Collierville accounts for the solid wastes management system in a special revenue fund. The name of that fund is the Sanitation Fund.

Please consider this letter as certification of that special revenue fund.

If you need further information, please feel free to contact me.

Sincerely,

Herman W. Cox, Jr.
Mayor

cc: Wilbur Betty, Director of Public Works
Jane Bevill, Comptroller

Germantown

MAYOR
CHARLES SALVAGGIO

ALDERMAN
SHARON GOLDSWORTHY
LISA L. PARKER
DR. ROBERT L. PARRISH, JR.
GARY PRUITT
JERRY TUBB

CITY ADMINISTRATOR
PATRICK J. LAWTON

1930 SOUTH GERMANTOWN ROAD
POST OFFICE BOX 38809
GERMANTOWN, TENNESSEE 38183-0809
(901) 757-7200

May 31, 1994

Mr. Jeff Reece
Division of Planning and Development
125 North Main Street, Suite 468
Memphis, Tennessee 38112

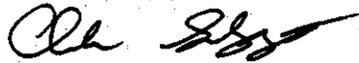
Dear Mr. Reece:

The City of Germantown is in compliance with the provisions of the Solid Waste Management Act of 1991 and the financial accounting requirements of T.C.A. 68-31-874(a), as amended. Germantown accounts for the solid waste management system in a special revenue fund designated as the Sanitation Fund.

Please consider this letter as certification of the required special revenue fund.

If you need further information, do not hesitate to contact me.

Sincerely,



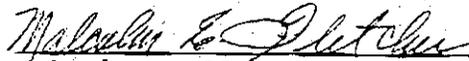
Charles Salvaggio, Mayor

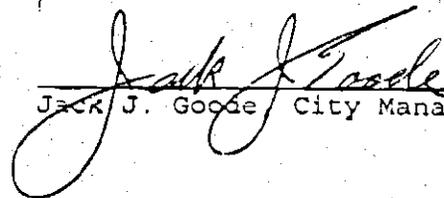
CS/mc

cc: Samuel L. Beach, Director, Environmental Services

Certification of Compliance T.C.A. 68-31-874(a) as amended.

We have conferred with Robert Doll, Jr. CPA (1992/1993 auditor for City) and have been assured that the City of Lakeland is in compliance with T.C.A. 68-31-874(a) as amended. We are so certifying this compliance to the best of our knowledge and belief. Fund name is to be "City of Lakeland Solid Waste Fund".


Malcolm E. Fletcher, Mayor


Jack J. Goode, City Manager 6/3/94



Inter-Office Memorandum

To: Dexter Muller, Director, Office of Planning and Development
From: Monice Hagler, City Attorney 
Date: August 10, 1993
Subject: **FINANCIAL ACCOUNTING COMPLIANCE**

This letter certifies that the City of Memphis, as required by the Solid Waste Management Act of 1991, has and is currently complying with the Financial Accounting Requirements of T.C.A. 68-31-874(a), as amended.

For your information, the City of Memphis has established a special revenue fund. The number and name of this fund is as follows:

FUND: #204
NAME: SOLID WASTE MANAGEMENT FUND

Therefore, please feel free to include this letter as a part of the Shelby County Region Solid Waste Plan.

ELY:MH:jd

cc: Benny Lendermon, Director, Public Works Division
Paul Patterson, Administrator, Solid Waste Management

City of Millington

Board of Aldermen
L. L. CARTER
R. L. HODGES
J. A. HUTCHESON
H. D. MONCIER
R. A. NEIGHBORS
B. E. PERCER, JR.
D. H. WAGES

POST OFFICE BOX 247
Millington, Tennessee 38083
(901) 872-2211

July 20, 1993

Mr. Jeff Reece
Division of Planning and Development
125 North Main Street Mall, Suite 468
Memphis, Tennessee 38112

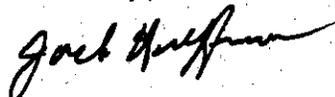
Dear Mr. Reece:

In compliance with the provisions of the Solid Waste Management Act of 1991, and the financial accounting requirements of T. C. A. 68-31-874 (a), the City of Millington accounts for the solid wastes management system from the General Funds.

Please consider this letter as certification of the special revenue fund.

If you need further information, please feel free to contact me.

Sincerely,



Jack Huffman, Director
Public Works



Shelby County Government

William N. Morris, Jr., Mayor

April 26, 1994

TO WHOM IT MAY CONCERN:

This is to certify that Shelby County has in effect accounting policies, procedures and systems which comply with its charter and with the financial accounting requirements of the Solid Waste Management Act of 1991 as included in T.C.A. 68-211-874. All funds of Shelby County are included in an annual audit in accordance with law.

Sincerely,

Henry Marmon, Director
Administration and Finance

William N. Morris, Jr.
Mayor

992/26

A-19

APPENDIX B. DOCUMENTATION FOR ADJUSTMENTS TO THE
BASE-YEAR GENERATION

1. ADJUSTMENT OF 1989 GENERATION DATA

A copy of the Shelby County Municipal Solid Waste Region Board's letter to the State of Tennessee requesting an adjustment of the 1989 base year waste generation figures for Shelby County is included in Appendix B. Supporting documentation is included with the letter. A copy of the reply from the Director of the Tennessee Department of Environment and Conservation Division of Solid Waste Assistance approving the adjustment request follows in Appendix B.

2. "NO COLLECTION" VARIANCE

The "No Collection" Variance does not apply to Shelby County.

3. PREVIOUS WASTE REDUCTIONS (1985-1989)

In this plan, Shelby County claimed no previous waste reduction credits for the period 1985-1989.

City of Memphis



TENNESSEE

DR. W. W. HERENTON - Mayor
DAVID F. HANSEN - Chief Administrative Officer
DIVISION OF PUBLIC WORKS
BENNY O. LENDERMON - Director

March 24, 1994

Ms. Geniel Dillehay
Solid Waste Assistance Division
Tennessee Department of Environment and Conservation
14th Floor, L & C Tower
401 Church Street
Nashville, Tennessee 37243-0455

Dear Ms. Dillehay:

The amount of solid waste being collected, hauled and disposed both in and out of Shelby County has proven to be extremely difficult to track due to a complexity of generators, haulers and disposal facilities operating in the immediate three-state area. Consequently, the Regional Solid Waste Board had to establish a way to identify the various elements, communicate with those involved and record the data before properly addressing many of the requirements for the Solid Waste Plan.

Following a thorough review of the solid waste generation of Shelby County, it has been determined by the Regional Solid Waste board that a 1989 base year volume adjustment is needed. Research by the Board indicates that the waste volume for Shelby County would be more than 1.35 tons per capita in the UT Report and less than the 1.73 tons per capita in the District Needs Assessment. We base our determination on available landfill, recycling and diversion records which indicate that 1.65 tons per capita would be a more accurate representation for Shelby County.

According to the UT Report, "Managing Our Waste: Solid Waste Planning in Tennessee", the annual waste generation of Shelby County in 1989 was 1,122,563 tons or 1.35 tons per capita. By comparison, the District Needs Assessment indicated that the amount of waste collected for disposal in 1991 in Shelby County was 1,434,034 tons or 1.73 tons per capita. Therefore, in order to arrive at the 1989 base volume amount using the District Needs assessment per capita, we simply multiplied 1.73 tons with the 1989 population which would indicate 1,428,461 tons was disposed in 1989. The difference between the two base year figures is 305,898 tons which the Board felt warranted further

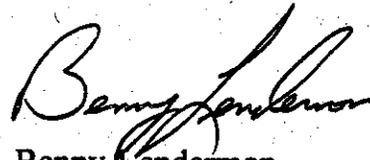
review. We began our study by contacting Jack Barkenbus, the Solid Waste Project Director with UT. Mr. Barkenbus stated that the UT Report was based on surveys across the State and not necessarily using specific landfill figures for Shelby County. Therefore, according to Mr. Barkenbus, the base year calculations were derived from estimates and rural versus urban assumptions. While we respect the method and sources of the UT Report, we felt that a more quantified justification was contained in the District Needs Assessment. However, based on current tracking of wastes in Shelby County, we found that the District Needs Assessment per capita generation was most likely too high.

Further research indicated that the District Needs Assessment's solid waste volume was somewhat inflated due to projections based on too many landfill work days. After subsequent adjustments and comparisons to current disposal, diversion and recycling volumes, it indicated that 1.65 tons per capita is the most accurate. For these reasons, we respectfully ask the State of Tennessee for this base year variance.

Should there be any questions or comments, please contact me or Andy Ashford, Board Secretary, at (901) 576-6868. Due to the impending deadline for submitting our solid waste plan, we would appreciate your answer as soon as possible.

Again, thank you for your consideration in this important regional matter and we look forward to receiving your response.

Sincerely,



Benny Lendermon,
Chairman
Shelby County Regional Solid Waste Board

BL:jd

cc: Board Members

SHELBY COUNTY REGION

REQUEST FOR BASE YEAR ADJUSTMENT

The Shelby County Regional Solid Waste Board bases its request for a base year adjustment on the following data, compiled over the last several months. The objective of our research was to determine an accurate solid waste volume for Shelby County and to either verify the UT figures or those of the District Needs Assessment. Therefore, we felt that in order to make this determination, we should take a step by step approach.

A. STEP 1 - ESTABLISHING WHAT WE KNOW AS FACTUAL

1. UT Report - 1,122,563 tons in 1989 = 1.35 per capita
 - Based on estimates and urban vs rural generation assumptions.
2. District Needs Assessment - 1,428,461 tons in 1989 - 1.73 per capita
 - Based on landfill volumes utilizing projection, however, probably too high due to too many landfill work days and the lack of specific annual tonnage totals.
3. Current Disposal - 1,052,637 tons in 1993
 - Based on actual landfill and hauling data (see attached).
4. Shelby County's true per capita is probably between those of UT (1.35) and the District Needs Assessment (1.73). There is a difference of 305,898 tons between the two reports which indicated that further research was needed.

B. STEP 2 - UNKNOWN FACTORS

1. Since Solid Waste flows were not tracked in 1989 and landfill records were in cubic yards, it would be difficult to get a verifiable tonnage.
2. As a group, the Board agrees that volumes dropped significantly after July 1991 when Class I landfill rates doubled. It is the Board's opinion, as well as that of the Class I landfill operator's that most of the waste was diverted to Class III or IV landfills or simply source reduced. Accordingly, since this diverted volume cannot be traced in 1991, we can only depend on the judgment of the Class I landfill operator who stated that volume dropped approximately 30% after July of 1991.

C. **STEP 3 - DETERMINING AN ACCURATE PER CAPITA**

1. Start with what we know is reasonably accurate and calculate back to 1989 using UT's population figure, which the Board agrees is acceptable.

2. Calculated as follows:

| | |
|------------------------------------|------------------------------|
| 1993 Class I landfills | 1,052,637 tons (accurate) |
| Recycled at Commercial Recyclers | 112,149 tons (accurate) |
| Diverted To Class III & IV | 200,000 tons (approx) |
| Source reduction or just not there | 20,000 tons (approx) |
| | <hr/> |
| | 1,384,786 tons 1993 |

3. To arrive at a 1993 per capita tonnage using the above volume:

- Divide the total generation of 1993 by the population projection for 1993 from the UT Report = 1.65 tons per capita.
- $1,384,786$ (1993 tons) \div $838,376$ (1993 population) = 1.65 tons per capita

4. To arrive at a 1989 per capita tonnage using the above 1993 per capita

- Using the 1.65 tons per capita for 1993 simply multiply this figure with the 1989 population since the per capita must be constant throughout.
- 1.65 times $825,700$ (1989 population) = $1,362,405$ tons for 1989.

1993

TRACKING CLASS I LANDFILL SOLID WASTE IN AND OUT OF SHELBY COUNTY

| | | | |
|----|--|-----|----------------------|
| A. | BFI's 2 landfills recieved | | 998,677 tons |
| | BFI out of state waste | (-) | 54,404 tons |
| | WMX out of state waste | (-) | <u>137 tons</u> |
| | Waste Generated from Shelby Co. | | 944,136 total tons |
| B. | Waste Management's Transfer Station | | 108,091 tons |
| | WMX out of state waste | (-) | <u>6,286 tons</u> |
| | Transferred to Mississippi | | 101,805 total tons |
| C. | ECO waste generated in Shelby County which was disposed out of state | | 6,696 total tons |
| D. | To get an accurate volume of solid waste which was generated in Shelby County add totals from (A) (B) (C). | (A) | 944,136 tons |
| | | (B) | 101,805 tons |
| | | (C) | <u>6,696 tons</u> |
| | Shelby County | | 1,052,637 total tons |

1993
SOLID WASTE HAULERS
REPORT

| | (A) | (B) | (C) | (D) |
|------------------|--|--------------------------------|--|--|
| | OUT-OF- STATE/COUNTY ROL/REL/OTHER | OUT-OF- STATE/COUNTY FEL | OUT-OF- STATE/ COUNTY TO WMX STATION | SHELBY CO. TO OUT-OF- STATE/COUNTY |
| BFI | 27,279 | 27,125 | -0- | - |
| WASTE MANAGEMENT | 24 | 113 | 6,286 | 108,091 |
| ECO | -0- | -0- | -0- | 6,696 |
| SAFETY LIGHTS | -0- | -0- | -0- | -0- |
| TOTAL (TONS) | 27,303 | 28,238 | 6,286 | 114,787 |
| | | | | - 6,286 (C) FROM |
| | | | | 108,501 OUT-OF- STATE |

1993 COMMERCIAL RECYCLERS REPORT
(TONS)

1993

| | |
|---------------------------------------|----------------------|
| BFI Recyclery | 36,578 |
| Lazarov | 100 |
| Dixie | 5,500 |
| H. Blockman | 4,500 |
| Ben Mogy & Son | 18.72 |
| F. Perlman & Co. & others they own | 2,110 |
| Mempis Waste Paper Co. | 24,000 |
| Smurfit Recycling | 36,000 |
| PC Applications | .50 |
| Pad Warehouse | 340 |
| Amer. Lazer | 2.50 |
| Greener Environmental | Mailed 3/22 |
| Airways Iron | No Response |
| Alum. Can & Alloy | No Response |
| Alum. Can Recy. | No Response |
| ALOCA | No Repsonse |
| Recycling America | Mailed - No Response |

112,149.72 total tons

**MUNICIPAL SOLID WASTE
1993
WASTE WHICH IS THE RESPONSIBILITY OF THE MUNICIPAL GOVERNMENTS**

| | <u>CLASS I</u> | <u>CLASS III AND IV</u> | <u>RECYCLED</u> | <u>TOTAL</u> | <u>REDUC- TION %</u> |
|--------------|-----------------|-----------------------------|-----------------|-------------------|------------------------------|
| Arlington | 195.11 | -0- | 56.52 | (215.63) | 26 |
| Bartlett | 19,116 | -0- | 2,855 | (21,971.00) | 12 |
| Collierville | 7,087.05 | 3,135.25 | 2,023 | (12,245.30) | 42 |
| Germantown | 10,643 | 7,638.68 | 2,089.71 | (20,371.39) | 47 |
| Lakeland | 312 | -0- | 37.7 | (349.70) | 10 |
| Memphis | 315,963 | 25,817 | 4,612 | (346,392) | 8 |
| Millington | 9,552.73 | -0- | 3,000 | (12,552.73) | 23 |
| NAS Memphis | <u>4,500.00</u> | <u>-0-</u> | <u>592.00</u> | <u>(5,092.00)</u> | 11 |
| | 367,332.89 | 36,590.93 | 15,265.94 | 419,189.75 | |



Memphis Area Association of Governments

157 Poplar Avenue • Room B-150 • Memphis, Tennessee 38103 • Phone (901) 576-4610

March 23, 1994

**Mrs. Genell H. Dillehay, Deputy Director
TN Department of Environment & Conservation
Division of Solid Waste Assistance
L & C Tower, 14th Floor
401 Church Street
Nashville, TN 37243-0001**

Dear Genell:

It was nice seeing you at the TN Development District Annual Meeting, March 1st. This letter is written in support of the Shelby County Solid Waste Planning Region board's request for an adjustment in the 1989 base year disposal amount and rate.

After numerous discussions and several meetings with Andy Ashford (Secretary-Shelby County Solid Waste Planning Region and City of Memphis-Recycling Coordinator), the Shelby County Solid Waste Planning Region Board, and the subcommittee formed to study the base year amount, I concur with Shelby County's request for a base year adjustment.

The 1989 estimate using a state average rate, for urban areas, of 1.34 tons per person per year is not as reliable for Shelby County, as estimates based on the experiences of the local landfill operators and solid waste haulers. The Needs Assessment disposal figure, of 1,434,034 tons, was based on estimated average daily tonnage times the number of days the landfills were open. The landfill operator's daily average tonnage was estimated for the first six months of 1991, and based on actual measured weights after scales were operational, after July 1, 1991. In recent discussions with the landfill operator, the number of days used to calculate the total tonnage is closer to 5.5 days instead of the 6.5 days used in the Needs Assessment. However, the rate from the Needs Assessment of 1.727 tons per person per year is probably still very close, because of Class III & IV materials and unmanaged wastes, for which, I was unable to get disposal records or estimates.

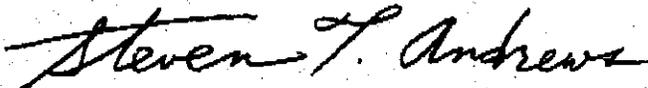
Geneil Dillehay
Page 2

Andy's disposal amounts are actual weights from the landfills, for the entire year (1993), minus weights hauled in from out of the County and State. The solid waste collected in Shelby County and disposed of out of state, plus the weight of materials recycled are added to the total. Conservative estimates of the amount of materials sent to Class III & IV Landfills, and for source reduction were added to the total waste generated by Shelby County. The estimates for Class III & IV materials and source reduction are based on the experience of the landfill operators and have been reduced to be conservative.

The level of cooperation Memphis and Shelby County have received, and the quality of records being kept, have improved since the data was collected for the Needs Assessment. Actual weights of materials, the improved participation and the quality of reports, from the people in solid waste management, give a more complete and accurate picture of the amount of solid waste generated in Shelby County, than a state average rate. The 1.6 tons per person per year rate is reasonable since it falls between the 1989 study and the 1991 Needs Assessment. The adjusted rate is more accurate and relevant, for Shelby County, since it is based more on facts and the local conditions than the 1989 estimate. 1.45

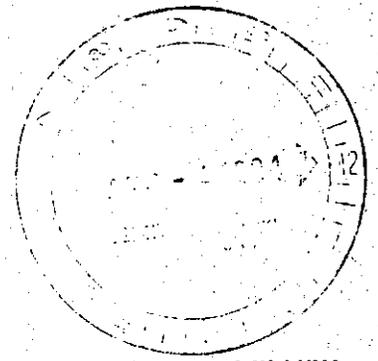
If you have any questions, please call. I look forward to our next meeting.

Sincerely yours,



Steven T. Andrews, E.I.T.
Engineer/Planner

STA:sta



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243-0435

NED McWHERTER
GOVERNOR

J. W. LUNA
COMMISSIONER

March 29, 1994

Mr. Benny Lendermon
Director, Division of Public Works
City of Memphis
125 N. Main St., Room 628
Memphis, TN 38103-2091

Dear Mr. Lendermon:

We have received and reviewed your request for a base year adjustment of Shelby County's annual per capita disposal rate from 1.36 tons (the rate calculated from the 1989 U.T. survey) to 1.65 tons (the figure which was determined through review of current actual hauling data and approximated source reduction data). It appears that you have a valid concern for correction of your base year data. Therefore, Shelby County's base year data is approved to reflect an annual per capita disposal rate of 1.65 tons.

Should you require any further assistance on this or other matters, please do not hesitate to contact us.

Sincerely,

Paul Evan Davis
Director, Division of Solid Waste Assistance

APPENDIX C. PUBLIC PARTICIPATION ACTIVITIES

1. MEETINGS OF THE SHELBY COUNTY BOARD

All meetings of the Shelby County Municipal Solid Waste Region Board are open to the public. Notices of each board meeting are prepared by the secretary of the board and are forwarded to all city halls in the county and to the Shelby County Administration Building. Minutes of each meeting are maintained by the secretary and copies of the minutes are available from him. A number of citizens representing a wide variety of public, private, and personal interests have attended board meetings.

Articles regarding the development of the county's solid waste plan have appeared in the Memphis metropolitan area's daily newspaper, The Commercial Appeal, and in County Lines, a newsletter for employees of Shelby County Government.

2. PUBLIC HEARING

a. Summary

A public hearing for the Shelby County Municipal Solid Waste Regional Plan was held June 6, 1994, at Agricenter International. Twenty-five people attended the public hearing. A copy of the hearing's public notice and minutes of the hearing are included in Appendix C.

b. Attendance List

A list of attendees of the public hearing follows the minutes.

THE COMMERCIAL APPEAL

MEMPHIS, SUNDAY, MAY 22, 1994

Legal
Notices

526

**NOTICE OF PUBLIC
HEARING**

The Shelby County Regional Solid Waste Board will hold a Public Hearing on Monday, June 6, 1994, regarding the Final Draft of The Shelby County Regional Solid Waste Plan. The Public Hearing will be held at 2:00 P.M., in the Lower Level Meeting Room of The Agricenter International, at 7777 Walnut Grove, at which time comments regarding the plan will be received. Beginning May 25, 1994, copies of The Solid Waste Plan will be available for public review during normal business hours at The City Halls of each Shelby County Municipality, The Shelby County Office Building at 160 North Main, Room 600, Memphis City Hall, 125 North Main, Room 628, and The Main Public Library at 1850 Peabody. The public is invited to submit written comments and questions to: **ANDY ASHFORD, BOARD SECRETARY, 125 N. MAIN, ROOM 628, MEMPHIS, TENNESSEE, 38103, (901) 576-6861 TILL 4:30 P.M. JUNE 6, 1994.**

SHELBY COUNTY REGIONAL SOLID WASTE PLANNING BOARD

JUNE 6, 1994 PUBLIC HEARING

MINUTES

- * Board Chairman Lendermon presided.
- * Board members introduced.
- * Attendees were asked to sign attendance log (see attached).
- * Jeff Reece (Office of Planning and Development) gave an overview of the region's Solid Waste Plan Draft. A handout was distributed to attendees of the plan's executive summary (see attached).
- * Chairman Lendermon stated that no written questions or comments were received by the Board prior to the meeting and thus asked those attending the hearing for questions and/or comments.
- * Question: (Frank Dominioni with TVA) How does the 25% reduction affect projects such as the current TVA incinerator efforts?

Answer: (Lendermon/Helyn Keith) Incineration does not count toward the 25% reduction; however, we (Board) support the TVA concept and program. (Reece) In the plan, this is addressed in the Waste-To-Energy section. (Keith) This plan will not jeopardize TVA's project.

- * Question: (Jim Cherry w/CH2M Hill) What are some of the examples of the 10% diversion?

Answer: (Reece) Basically, diverting (yardwaste) from Class I landfills in most cases to Class III and IV. (Lendermon)

Explained that this diversion can be counted as part of our 25% reduction.

* Question: (Frank Dominioni w/TVA) Is there anything in the plan which would prevent material from going out of the state?

Answer: (Lendermon) No. Nothing would affect waste going in or out of region. The only time it would be an issue is if landfill capacity becomes a problem.

(Ashford) Explained that waste going out must be documented as waste being generated from Shelby County and was disposed in a Class I type facility.

* Comment/Question: (John Smith w/Federal Express) He did not see how we (Board) were going to market this as a positive move, that this was going to be nothing but bureaucratic and a cost to industry. Where are the benefits in this program for industry and households? Suggested the establishment of a recycling board to serve as a sort of exchange. Are there going to be any types of tax credits or positive approach in order to get everyone to participate or is this simply regulatory?

Answer: (Lendermon) Explained relationship of landfill capacity to the needs of the region and it is up to the various municipalities to develop their own plans because the Board will not dictate how they will comply. Because each municipality's plan is different, industry's involvement would be dependent on that community's involvement with industry. This document does not address in as much detail as you are referring to. We will be asking for industries involvement accordingly. There is no tax credits currently available (Hamp Dobbins w/Shelby County) explained how the Shelby County Schools had a recycling program and its results.

Answer continued: (Andy Ashford, Board Secretary) Explained the new State of Tennessee laws pertaining to the deregulation of transportation of recyclable within Tennessee. Also, a bill which failed last session to allow for tax credits on the purchase of recycling related equipment. Also, it is somewhat premature to have all of the programs or goals ready for implementation at this time since this plan does not go into that kind of detail. Also, (Mike Stookesberry w/UT-CTAS) explained that the Center for Industrial Services can possibly help in some marketing situations.

- * Question: (Tom Brown w/Cleo) Can he use some of his (Cleo's) materials in the base year?

Answer: (Lendermon) No - (see later answer by Ashford).

- * Question: (Brown) Is there some possibly future involvement of industry with this Board.

Answer: (Lendermon) Yes. There is a current technical Advisory Board to the main Board which you and others may serve on.

- * Comments: (Helyn Keith) Explained that this plan is intentionally not technical at this stage however, industry's involvement will be important and needed in the future.

- * Comments: (Ashford) Explained how per capita was developed and industry's role in achieving the reduction goal. Also asked for diversion or recycling amounts from 1985 forward to count toward this goal, as well as materials which also may be going direct from industry to sources outside the State. Additionally, a survey will be developed for industry by Board member Karen Blanks and myself, with enlisted help from other interested parties to ascertain industry's efforts toward waste reduction.

* Comments: (Reece) There will be annual updates to the plan submitted to the State.

* Question: (Dominioni) What about this year's ice storm and yard waste reduction?

Answer: (Lendermon) We met our 25% reduction for this year easily.

* Question: (Carl Johnson w/City of Memphis and Board Member) Is the list of recyclers in the plan comprehensive and can others be added?

Answer: (Ashford) We can add anyone at anytime.

* Comments/Question: (John Smith) Would it be helpful if all the environmental regulatory organizations pool their surveys in order to accomplish their objectives rather than having several individual surveys? This could all be put in database.

Answer: (Ashford) Yes, it would be good and perhaps easier for everyone however, we are just beginning to develop so in time, it could happen. It will be necessary for the region and the State to have your input to possibly make that sort of change.

* Comments: (Steve Andrew - MAAG) comments inaudible for the minutes.

* Comments: (Mike Stookesberry) All we are doing now is compiling in order to achieve a starting point and concept. Later, as we progress, the real issues of how we will meet the requirements or needs will become more practical and particular concerns addressed.

* Adjournment.

PUBLIC HEARING
SHELBY COUNTY SOLID WASTE REGION

JUNE 6, 1994

ATTENDANCE LOG

| NAME | MAILING ADDRESS | ZIP |
|----------------------|--|-------|
| Andy Ashford | City of Memphis 125 N. Main Rm 628 Memphis | 38103 |
| Greg Zwoig | DUPONT 2571 FITE RA, MEMPHIS, TN 38127 | 38127 |
| Helyn Keith | Shelby County Gov. Rm 946, 160 N. Main St. | 38103 |
| SAREN BLANKS | DIESEL RECON 2680 PRESHING AVE 38112 | 38112 |
| CARL JOHNSON | 125 N. M.D America Mall | 38103 |
| PAUL N. BOURASSA | BLUE MOON, INC. 2097 GLENALDEN DR. W. GERMANTOWN | 38139 |
| Jim Cheary | CEM HILL 785 Crossover Lane Memphis | 38117 |
| BOB BLANZ | 4217 Hill 785 Crossover Ste 101 | 38117 |
| JA Smith | PO Box 727-1870 Mps 38194 Federal Express | 38194 |
| Paul Pittman | City of Memphis, 125 N. Main Rm 628 | 38103 |
| Hamp Dobbins, Jr. | Shelby County 100 N Main #1343 | 38103 |
| Frank Dominion / TUA | 2574 Plant Rd Memphis | 38109 |
| Wendy Bratton | Cleo Inc 4025 Viscount Mphs | 38118 |
| Tom Brown | 4025 Vient Mps CLEO IWE | 38118 |
| WILBUR BETT | 101 WALKING ST COLLIERVILLE TN | 38017 |
| SAM L. BEACH | 7700 SOUTHERN GERMANTOWN | 38139 |
| Michael Spooksberry | UT CTAS P.O. Box 100, 179 CLEMENT HALL UTM, MARTIN, TN 38238 | |
| Steven T. Andrews | MAAG 157 Poplar Av. Rm B150 Memphis, TN 38103 | |
| Dr A Middle | 12216 S. A Jones 38028 Crestwood | 38028 |
| MARK GREGORY | 10455 MONROE RD. ARLINGTON, TN. 38002 | 38002 |
| SEAN ALDRIDGE | 10455 MONROE RD ARLINGTON, TN | 38002 |

APPENDIX D. IMPORTS AND EXPORTS

In 1993, BFI and Waste Management were importing relatively small amounts of waste (54,541 tons) into Shelby County for disposal in BFI's Class I landfills. Waste Management also imported 6,286 tons of waste produced outside Shelby County to its transfer station in Shelby County. This waste subsequently was disposed of at the Waste Management landfill near Houston, Mississippi. Also in 1993, ECO Services disposed of 6,696 tons of waste produced in Shelby County at out-of-county landfills.

These importation/exportation arrangements are considered private contracts between the collection companies and other governments and businesses outside Shelby County. None of the local governments in Shelby County nor the Shelby County Municipal Solid Waste Region Board have entered into contracts concerning the importation/exportation of wastes into/from Shelby County.

The State of Tennessee asks that "a resolution adopted by the administrative board of the receiving region agreeing to accept waste from the exporting region" and "a fully executed interlocal agreement" be included in Appendix D. Since no resolutions nor interlocal agreements have been executed by local governments or the Shelby County Board, none is included here.

Contracts and other legal documentation describing the importation/exportation agreements of BFI, Waste Management, and ECO Services are considered private and have not been requested for inclusion here.

APPENDIX E. ACCEPTANCE RESOLUTIONS OF PUBLIC BODIES AND
REVIEW BY APPROPRIATE MUNICIPAL OR REGIONAL
PLANNING COMMISSION

1. RESOLUTION OF THE SHELBY COUNTY MUNICIPAL SOLID WASTE REGION
BOARD

The Shelby County Municipal Solid Waste Regional Plan was formally adopted by resolution of the Shelby County Municipal Solid Waste Region Board on June 13, 1994. A letter verifying this is included in Appendix E.

2. RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS OF SHELBY
COUNTY

The Shelby County Solid Waste Plan was formally accepted by the Board of County Commissioners on June 20, 1994. A copy of the resolution is included in Appendix E.

3. REVIEW BY LOCAL PLANNING AGENCY

In Shelby County, the Memphis and Shelby County Division of Planning and Development serves as the official plans review agency for the county. The Shelby County Solid Waste Plan was reviewed by the director and staff of DPD and found to be supportive of and in conformance with the "Memphis 2000 Policy Plan", the comprehensive plan for Memphis and Shelby County. A letter from DPD's director stating this is included in Appendix E.

June 16, 1994

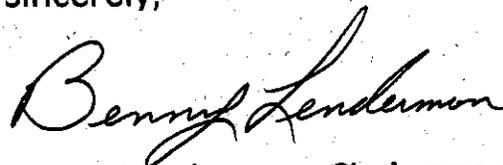
Mr. Paul Evan Davis
Solid Waste Assistance Division
Tennessee Department of Environment and Conservation
14th Floor, L & C Tower
401 Church Street
Nashville, Tennessee 37243-0455

Dear Mr. Davis:

The Shelby County Regional Solid Waste Planning Board has duly reviewed the following Solid Waste Plan and agree upon its content. Accordingly, the plan was formally adopted by resolution of the Board's membership at the June 13, 1994 meeting.

I hereby attest to the plan's adoption and submit to you this document.

Sincerely,



Benny Lendermon, Chairman
Shelby County Regional Solid
Waste Planning Board

BL:jd

Item # 23

Prepared by Helen Keith

Commissioner Sisson

Approved by Donna E. Webb
County Attorney

RESOLUTION TO GRANT ACCEPTANCE OF THE
SHELBY COUNTY MUNICIPAL SOLID WASTE
REGIONAL PLAN

WHEREAS, The Tennessee Solid Waste Management Act of 1991 requires that municipal solid waste regions be established throughout the state to institute and maintain a comprehensive, integrated program for solid waste management; and

WHEREAS, The County of Shelby, including the municipalities therein, has been established as a one county region for the purpose of implementing the Tennessee Solid Waste Management Act of 1991; and

WHEREAS, Each Region is charged with establishing a board to administer the activities of the Region, and with developing a plan for a ten-year disposal capacity and for achieving a twenty-five percent (25%) waste reduction goal; and

WHEREAS, The Shelby County Regional Solid Waste Board has prepared a Shelby County Municipal Solid Waste Regional Plan hereinafter the Plan, for the Shelby County Region which will help protect the environment, provide an improved solid waste management system, better utilize our natural resources, and promote the education of the citizens of Shelby County in the area of solid waste management, including the need for and desirability of reduction and minimization of solid waste; and

WHEREAS, The State of Tennessee has requested that the Shelby County Commission indicate its support of the Plan by accepting the Plan's provisions.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF SHELBY COUNTY, TENNESSEE, That the Commission hereby accepts the provisions of the Shelby County Municipal Solid Waste Regional Plan.

William N. Morris, Jr.
William N. Morris, Jr.
County Mayor

Date 6-27-94

ATTEST:

Donalby G. Beard
Clerk of County Commission

ADOPTED June 20, 1994

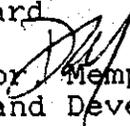


Memphis and Shelby County Division of Planning and Development

CITY HALL 125 NORTH MAIN STREET MEMPHIS, TENNESSEE 38103 - 2084 (901) 576 - 7197

MEMORANDUM

TO: Benny Lendermon, Chairman, Shelby County Municipal
Solid Waste Region Board

FROM: Dexter Muller, Director,  Memphis and Shelby County
Division of Planning and Development

SUBJECT: Planning Agency Review of the Shelby County Solid
Waste Plan

DATE: June 8, 1994

At your request, the Memphis and Shelby County Division of Planning and Development has reviewed the draft final document of the Shelby County Municipal Solid Waste Regional Plan. The division's staff has found the plan to be in agreement with and supportive of the policies of the Memphis 2000 Policy Plan, the comprehensive plan for Memphis and Shelby County.

We recommend that the plan be approved by the Solid Waste Board.

APPENDIX F. COMMITMENTS BY LOCAL SOLID WASTE COLLECTION
 COMPANIES TO SERVE RESIDENTS OF UNINCORPORATED
 SHELBY COUNTY

Correspondence from Browning-Ferris Industries/BFI Waste Systems and Waste Management of Tennessee-Memphis regarding their commitments to offer solid waste collection services to all households in unincorporated Shelby County is included in Appendix F.



BROWNING-FERRIS INDUSTRIES
Memphis

MARK BRANTLEY
Division Manager

April 15, 1994

David Newsom
6489 Mullins Station
Memphis, Tennessee 38134

Dear Mr. Newsom:

BFI now provides, to anyone in the unincorporated areas of Shelby County, garbage service and recycling services to anyone who is willing to pay for the service. We now are covering the entire Shelby County area and will continue to provide this to the County residents.

Sincerely,

Mark Brantley
Mark Brantley

Waste Management of Tennessee-Memphis
a WMI Service Center
3750 Hatcher Circle P.O. Box 181222
Memphis, Tennessee 38118
901/362-8950



A Waste Management Company

April 21, 1994

To Whom It May Concern:

In consideration of the State of Tennessee's goal of providing a solid waste collection service for the entire Shelby County Region, please be advised that Waste Management of Tennessee-Memphis includes all of Shelby County in its market for solid waste collection or recycling.

Yours truly,
WASTE MANAGEMENT OF TENNESSEE-MEMPHIS

Erwin Mitchell
Division President

EM:psw

APPENDIX G. HOUSEHOLD HAZARDOUS WASTE COLLECTION SERVICES
CORRESPONDENCE

Correspondence regarding the establishment of a household hazardous waste collection program for residents of Memphis and Shelby County is included in Appendix G.

City of Memphis

TENNESSEE

DR. W. W. HERENTON - Mayor
DAVID F. HANSEN - Chief Administrative Officer

DIVISION OF PUBLIC WORKS
BENNY LENDERMON - Director

Solid Waste Management

November 1, 1993

Mr. Paul Evan Davis
Tennessee Department of Environment and Conservation
Division of Solid Waste Assistance
401 Church Street
14th Floor, L & C Tower
Nashville, Tennessee 37243-0455

Dear Mr. Davis:

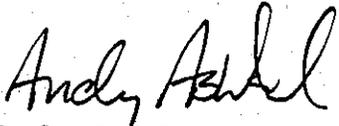
In a recent meeting of the Shelby County Regional Solid Waste Board, the topic of household hazardous waste was addressed at length. From our discussion, it became evident that the Board needed further guidance on this issue. Therefore, at the request of the Board and per our conversation of Friday, October 29th, I ask that the Department of Environment and Conservation clarify its position and interpretation of the law as it pertains to who should be recipient of grant funds and who is to provide services.

It is the opinion of the Board that Statute T.C.A. 68-211-829 indicates that the State, at its expense, will provide a mobile household hazardous waste collection service in each county, outside the four cities (reference Fact Sheet #8 attached). Based on this interpretation, the City of Memphis, as recipient of a \$500,000.00 grant, would be responsible for a permanent site and service for Memphis only while areas in Shelby County outside Memphis would receive mobile collection services provided by the State. If Shelby County is not eligible for mobile services, then please explain why not, and then, how do the areas outside Memphis handle their household hazardous waste needs?

This Board realizes the obvious need for responsible household hazardous waste management and stands ready to take the appropriate actions, however, we would appreciate a clarification from the State before addressing this issue further. As I mentioned in our earlier conversation, our next Board meeting is scheduled for November 18th at 2:00 p.m. You are invited to attend this meeting if you wish or a written response is respectfully requested.

Again, thank you for your assistance in this important regional solid waste matter. If there are any questions or comments, please do not hesitate to call me at (901) 576-6868.

Sincerely,



Andy Ashford, Secretary
Shelby County Regional Solid Waste Board

AA:jd

cc: Benny Lendermon, Chairman
Sam Beach, Vice Chairman
Board Members
File



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
401 Church Street
Nashville, Tennessee 37243

November 17, 1993

Mr. Andy Ashford, Secretary
Shelby County Regional Solid Waste Board
125 North Main Street, Rm. 628
Memphis, TN 38103-2090

Dear Andy:

I am writing pursuant to your letter dated November 1, 1993, asking for clarification of the City of Memphis's role in carrying out the requirements of the Tennessee Code Annotated, Section 68-211-828 (regarding household hazardous waste collection).

The intent of this section of the Solid Waste Management Act of 1991 is to provide permanent household hazardous waste collection facilities to serve over 35% of the state's population who live in Shelby, Davidson, Hamilton, and Knox Counties. Nashville, Knoxville, Chattanooga, and Memphis are the major population centers within these counties and are the eligible grant applicants. However, it is the intention of the legislation that the household hazardous waste services should be equally accessible to all residents of these counties.

The issue of how to fund the operating costs of such a facility may be resolved by the use of user fees allowed under TCA 68-211-835 (g). This fee may be charged to all citizens who use the facility regardless of their place of residence.

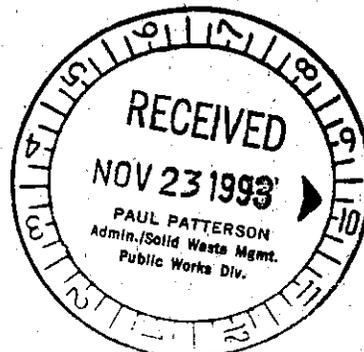
I hope this has been helpful. Please let me know, if I can be of further assistance.

Sincerely,

A handwritten signature in black ink that reads "Paul Evan Davis".

Paul Evan Davis, Director
Division of Solid Waste Assistance

PED:dhm





Shelby County Government

William N. Morris, Jr., Mayor

COPY

February 17, 1994

Mr. Paul E. Davis, Director
Division of Solid Waste Assistance
TN Department of Environment and Conservation
L & C Tower, 14th Floor
401 Church Street
Nashville, TN 37243-0455

RE: Mobile Household Hazardous Waste Collection

Dear Mr. Davis:

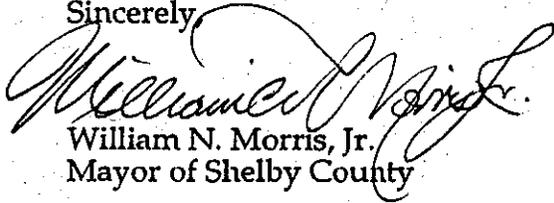
On behalf of Shelby County Government and with the support of the Shelby County Regional Solid Waste Board, we request the operation of a mobile household hazardous waste collection day for Shelby County in accordance with the Tennessee Solid Waste Management Act of 1991, hereinafter the Act.

We have reviewed the position of the Department of Environment and Conservation as stated in your letter of November 17, 1993, that it is the intention of the Act that the permanent collection centers in the metropolitan areas be equally accessible to all residents of the metropolitan counties. We have also reviewed the Act. The clear and unambiguous language in the Act has no such provision, and in fact states, "... the department shall provide, directly or by contract, mobile collection units to provide collection of household hazardous wastes on designated days in each county.", (emphasis added). No interpretation is necessary. If the legislature had intended the Act to say what you imply it could have easily done so.

The City of Memphis agrees with us and has taken the position that it is not required by the Act to provide a permanent collection center available to areas outside its corporate limits. Your stance on this issue is penalizing the other municipalities located in Shelby County and the residents of the unincorporated area of Shelby County for the coincidence of being located in a county where there is a major municipality.

Therefore, we are going forward with our plans for a mobile collection day as provided by the Act. We wish to have our collection day in late May. We have tentative sites available and have organized a public education program. We can also meet the other prerequisites for this event. We request that you have someone contact us immediately to set a date so that we can begin our final planning. With your cooperation and the plan we have designated this event can be a successful prototype for other events across the state.

Sincerely,

A handwritten signature in cursive script, appearing to read "William N. Morris, Jr.", written in dark ink over a light background.

William N. Morris, Jr.
Mayor of Shelby County

/and



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

401 Church Street
Nashville, Tennessee 37243

April 28, 1994

The Honorable William N. Morris, Jr.
Mayor of Shelby County
Suite 850
160 N. Market Street
Memphis, TN 38103



Dear Mayor Morris:

I'm responding to your letter which I received on March 22, 1994 regarding household hazardous waste collection in Shelby County. The Solid Waste Management Act of 1991 directs the Department to award grants to the cities in each of the four major metropolitan counties to establish a permanent site for such collection. This past August we solicited each municipality to apply for these grants. We had two grants available at \$500,000 each. To date, only the City of Nashville has applied while the City of Memphis had indicated they were not interested at this time.

In November of 1993, I wrote Mr. Andy Ashford with the Shelby County Regional Solid Waste Board to say that the intent of the 1991 act was to serve all of Shelby County. In addition, the intent of the legislation was to provide equal access to all residents of your county. In talking with key members of the "Governor's Solid Waste Roundtable", it was made clear to the representatives from the four metropolitan areas that the purpose of the grants was to provide all county residents with access to the city's permanent collection site(s).

In determining what to do next, I would suggest that all affected governments in Shelby County meet and develop a viable grant application for the available funds. This should lead toward a cooperative effort by all units of government to successfully implement a Household Hazardous Waste Program that meets everyone's needs. We would be willing to assist your application process once you have agreed to jointly pursue such funding.

I hope this has been helpful. I also wish you success in completing your region's ten-year solid waste plan. Please let me know if I can be of any further assistance.

Sincerely,

A handwritten signature in cursive script that reads "Paul Evan Davis".

Paul Evan Davis
Director
Division of Solid Waste Assistance

