

RECEIVED JUL 05 1994

FINAL DRAFT  
JUNE 9, 1994

MUNICIPAL SOLID WASTE  
REGIONAL PLAN  
FOR  
HARDEMAN COUNTY  
SOLID WASTE PLANNING REGION

PREPARED BY:

GRACE AND ASSOCIATES, INC.  
2969 ELMORE PARK ROAD  
BARTLETT, TENNESSEE 38134

1994



## TABLE OF CONTENTS

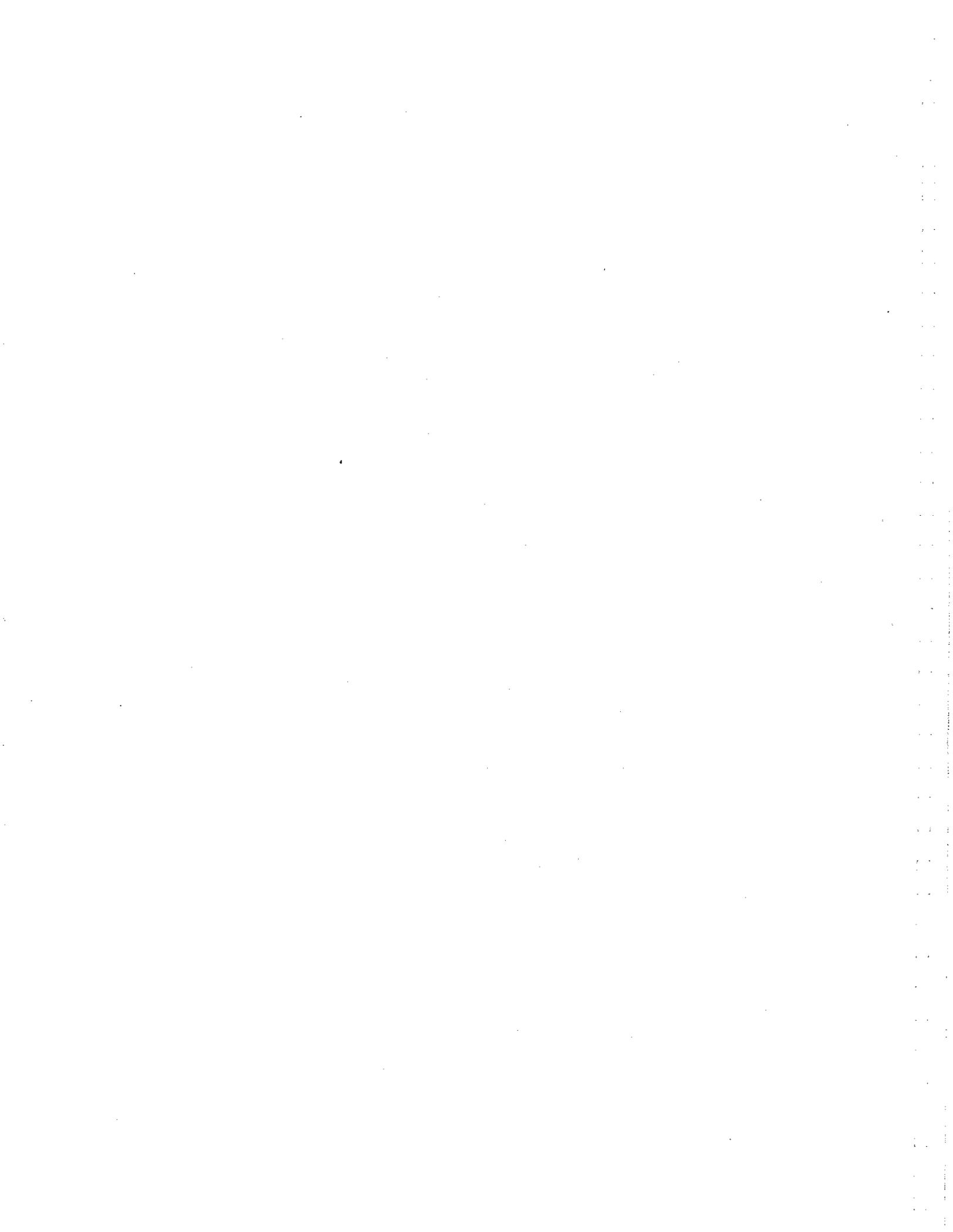
### Part I - EXECUTIVE SUMMARY

### Part II - REGIONAL MUNICIPAL SOLID WASTE MANAGEMENT PLAN

<u>Chapter</u>	<u>Page</u>
CHAPTER I - DESCRIPTION OF THE MUNICIPAL SOLID WASTE REGION	I-1 - I-10
CHAPTER II - ANALYSIS OF THE CURRENT SOLID WASTE MANAGEMENT SYSTEM FOR THE REGION	II-1 - II-9
CHAPTER III - GROWTH TRENDS, WASTE PROJECTIONS AND PRELIMINARY SYSTEM STRUCTURE	III-1 - III-8
CHAPTER IV - WASTE REDUCTION	IV-1 - IV-5
CHAPTER V - WASTE COLLECTION AND TRANSPORTATION	V-1 - V-7
CHAPTER VI - RECYCLING AND SOURCE REDUCTION	VI-1 - VI-4
CHAPTER VII - COMPOSTING, SOLID WASTE PROCESSING WASTE-TO-ENERGY AND INCINERATION CAPACITY	VII-1
CHAPTER VIII - DISPOSAL	VIII-1 - VIII-4
CHAPTER IX - PUBLIC INFORMATION AND EDUCATION	IX-1 - IX-5
CHAPTER X - PROBLEM WASTES	X-1 - X-5
CHAPTER XI - IMPLEMENTATION: SCHEDULING, STAFFING AND FUNDING	XI-1 - XI-5
CHAPTER XII - ALLOCATION OF IMPLEMENTATION RESPONSIBILITIES: PLAN ADOPTION AND SUBMISSION	XII-1
CHAPTER XIII - FLOW CONTROL AND PERMIT APPLICATION REVIEW	XIII-1

### Part III - APPENDICES

APPENDIX A - LEGAL DOCUMENTATION AND ORGANIZATION OF THE REGION	
APPENDIX B - DOCUMENTATION FOR ADJUSTING THE BASE YEAR GENERATION	
APPENDIX C - PUBLIC PARTICIPATION ACTIVITIES	
APPENDIX D - EXPORTS AND IMPORTS	
APPENDIX E - REVIEW BY APPROPRIATE MUNICIPAL OR REGIONAL PLANNING COMMISSION	
APPENDIX F - SAMPLE WEIGHING PROGRAM, VARIOUS COST ESTIMATES, MISC.	



**PART I**  
**EXECUTIVE SUMMARY**



## EXECUTIVE SUMMARY

### General Information

The Municipal Solid Waste Regional Plan for the Hardeman County Solid Waste Planning Region was prepared in accordance with the State of Tennessee, Solid Waste Management Act of 1991. State guidelines for preparation of regional plans were used to insure uniformity and compliance with State requirements.

The Region, as it is referred to in this Plan, was formed as a single county region due to a number of considerations such as solitary control over solid waste planning, geographic location, transportation routes, landfill availability, solid waste volumes, and various other aspects of political and economic concern. A Solid Waste Planning Region Board representing both the County and municipal governments with solid waste collection services was formed to coordinate the planning efforts. The engineering consulting firm of Grace and Associates, Inc. of Bartlett, Tennessee was contracted to prepare the Plan under the guidance of the Regional Board.

### Regional Needs and Goals

The existing solid waste management services in the Region will be upgraded to meet the requirements of the State. Of equal or greater importance will be the consideration to provide needed and reasonable solid waste services to all residents in the Region. The Regional goals are as follows:

- \* To provide solid waste collection services to all residents, businesses, industries and institutions which are presently served by the existing green-box system in rural areas,
- \* To ensure that the Region has long term access to a Class I landfill for final disposal of solid waste at a reasonable cost,
- \* To reduce the amount of Regional solid waste disposed of in Class I landfills by 25% prior to 1996,
- \* To properly manage problem waste materials such as waste tires, waste oil, waste batteries, and household hazardous waste,
- \* To educate and inform the general public, businesses, industries and institutions about the Plan and about solid waste issues pertinent to each individual in the County. Special emphasis will be placed on solid waste reduction and recycling.

## Key Elements of the Regional Plan

Collection - A formal bid for County-wide door-to-door collection of household solid waste will be taken during the late summer of 1995. The collection bid will include all residents which are presently served by the green-box system and also any businesses, industries or municipalities which choose to be included in the bid.

Class I Disposal - The Bolivar/Hardeman County Class I landfill will continue to operate throughout the 10 year planning period. At this time there is a large capacity of Class I landfill disposal space in the facility. Should the cost of operating the facility become too great during the planning period, consideration will be given to contracting with a private Class I landfill outside the County. There is ample Class I landfill capacity in the West Tennessee area (both existing and planned) for many years into the future.

Class III/IV Disposal - Unused land at the Bolivar/Hardeman County landfill site will be permitted and operated as a Class III/IV landfill for the disposal of brush, land clearing waste, construction debris and demolition material. Materials taken to a Class III/IV landfill will be credited toward the 25% reduction goal.

Problem Wastes - The Region will continue to provide a waste tire collection facility at the existing Class I landfill. Plans are also being made to stage a household hazardous waste collection event during the early summer of 1995. This event will be held on an annual or semi-annual basis. A waste battery collection area will be provided near the entrance to the existing Class I landfill, although individuals will be encouraged to drop off used batteries with local retailers when new batteries are purchased. Waste oil is presently being accepted from any resident of the County at the Sasser Oil Company of Bolivar (an Exxon distributor). The agreement with this facility will continue to serve as the Regional waste oil management program.

Recycling and Waste reduction - The Hardeman County Developmental Services Center Recycling Facility in Bolivar has been in operation since 1988-1989 with increasing success. The Regional plan involves supporting and utilizing this facility for its recycling efforts. In addition, the County-wide door-to-door solid waste collection system will offer residential recycling opportunities. Business and industrial waste reduction and recycling will be strongly encouraged and an organized effort to obtain waste reduction information from businesses and industries will be initiated.

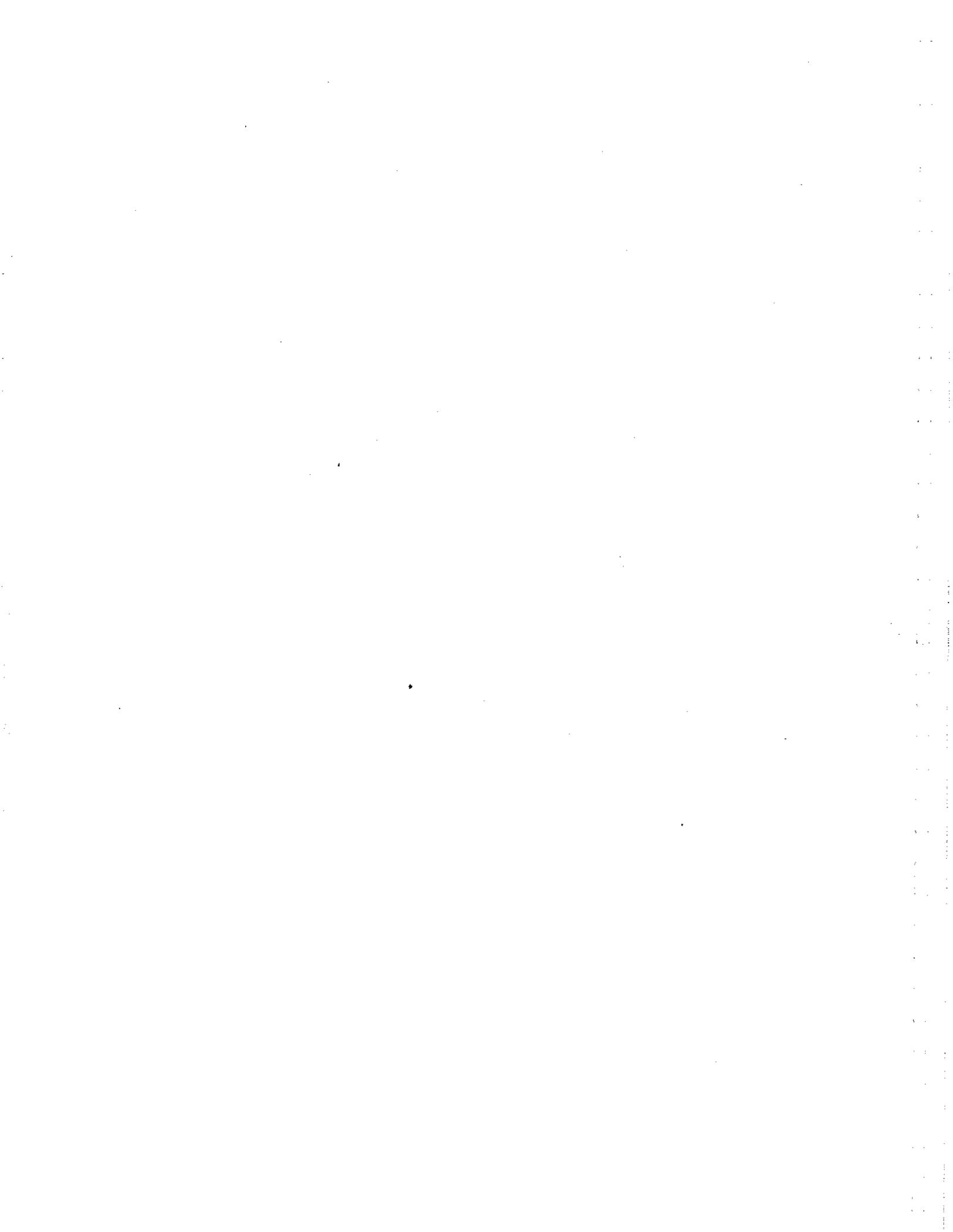
Public Education and Education - The Solid Waste Planning Region Board along with an Educational Advisory Committee will begin to formulate programs for bringing solid waste information and education to various sectors of the Regional community. A strong emphasis will be placed on bringing solid waste information and education to school children, civic organizations and clubs, scouts, churches, etc. in an effort to reach as much of the community as possible.

#### Implementation Schedule and Funding

See Chapter XI.

#### Responsibilities

The ultimate responsibility for implementation of the Plan lies with the County government. The Regional Board is responsible for Plan development, updates, modifications, and documentation. Each municipality which continues to operate a solid waste collection system will be responsible for documenting all of its solid waste management practices to the Regional Board. In addition, each of these municipalities will be responsible for developing and documenting efforts and achievements toward the 25% reduction goal, public information and education, and problem waste management.



PART II

REGIONAL MUNICIPAL  
SOLID WASTE MANAGEMENT PLAN



CHAPTER I  
DESCRIPTION OF THE  
MUNICIPAL SOLID WASTE REGION

A. GENERAL DESCRIPTION

The Hardeman County Solid Waste Planning Region is a rectangular shaped area of 668 square miles in southwest Tennessee. The Region is bounded on the west by Fayette County, on the north by Haywood County and Madison County, on the east by Chester County and McNairy County and on the south by the State of Mississippi. See Map I-1.

The Region is characterized by a rolling terrain which forms portions of the headwater drainage basins to the Hatchie River. The Hatchie River flows generally from the southeast corner of the county to the northwest corner and drains roughly 90 percent of the entire county. An adequate transportation system is in place and comprised of approximately 118 miles of primary highway, 32 miles of state highway and 670 miles of various county roads. The four corners of the Region are connected by State highways and U. S. Highway 64 crosses from east to west in the north-central portion. Railroad service is available along the southern border of the Region roughly paralleling State Highway 57. There is one commercial/general aviation airport located outside the City of Bolivar.

Agricultural activity remains a very significant part of the Region's economy while the commercial/industrial base is relatively strong but experiencing growth at a slow pace. There are nine incorporated towns in the Region: Bolivar, Grand Junction, Hickory Valley, Hornsby, Middleton, Saulsbury, Silerton, Toone and Whiteville.

B. RATIONALE FOR REGION FORMATION

The Hardeman County Solid Waste Planning Region is comprised of only one county - Hardeman. There were other possible alternatives and/or opportunities for joining a multi-county planning region. These included joining with Fayette County or associating with Chester and Madison Counties in a three county region. The following list outlines some of the advantages and disadvantages for multi-county regionalization. Hardeman County officials decided that there were more advantages to remaining a single county planning region.

ADVANTAGES

1. Multi-county regions are strongly encouraged by the Tennessee Solid Waste Management Act of 1991.
2. Large, regional landfills will be cheaper to operate, and planning for these regional landfills will most likely be better with a multi-county regional approach.

3. Planning for compliance with the recycling and educational requirements of the Waste Management Act will probably be better with help from other counties (particularly Madison County).

4. Cash incentives are given to counties in multi-county regions, e.g., each county in a 4-county region receives about \$10,000 extra state money for planning purposes than would be received if the county were a single-county region.

5. Multi-county regionalization is a first step towards multi-county landfills, which should result in lower operating costs for everyone, and should result in fewer environmental problems. It will likely be too costly for single-county landfills to comply with the latest environmental standards.

#### DISADVANTAGES

1. Individual counties will lose some control over their own solid waste.

2. Multi-county regionalization is obviously a first step towards multi-county landfills, which may present many problems for the receiving county.

3. Regions can be changed in the future; however, considering current state sentiments, it would probably be easier for a single-county region to join an existing region, than for a member of a multi-county region to split and form a single-county region.

4. Single-county regions evidently do not limit waste disposal options for themselves, since there can be multi-county landfills without having multi-county regions.

5. In a multi-county region, a management authority would probably dictate waste management. This authority would consist of a board consisting of one member for each county, and one member for each municipality within the county. Under this system, the municipalities could override the wishes of the county. However, in single-county region, there may not be a need to establish a management authority; therefore, the county could retain control of waste policies.

#### C. INSTITUTIONAL STRUCTURE

As required by State regulations, the Hardeman County Solid Waste Planning Region established a Regional Solid Waste Board which represents the county and municipalities. The Board is ultimately responsible for development of this Municipal Solid Waste Regional Plan and for coordination of all planning efforts with various local government agencies, businesses, industry and the community. The Board members and their representation are listed below.

County Representatives:

L. J. Cheairs  
Joe Cole  
Gene Howell  
Viscen C. Morrow  
Steve Young

Term:

1-year  
1-year  
1-year  
1-year  
1-year

Municipal Representatives:

Richard Ayers  
Milton Basden  
Mike Bodiford  
Terry Burkhead  
R. Wade Castellaw  
Jack Cooper  
Bobby Doyle  
Joe Shearin  
Johnny Smith  
Cecil Wilson

5-years  
3-years  
3-years  
5-years  
5-years  
3-years  
5-years  
3-years  
5-years  
3-years

Ex-Officio Members:

Don W. Clifft  
Charles Frost  
Jimmy Sain

The following board members were nominated and elected as officers.

Board Officers:

Chairman - Joe Shearin  
Vice-Chairman - Gene Howell  
Secretary - Viscen C. Morrow

The Board decided to form a Public Information and Education Advisory Committee and an Industrial Advisory Committee to help establish and direct the Region's solid waste planning in these specific areas and to involve the public in solid waste management decisions. The members for these committees will be selected when the Plan is approved by the State. The list of members and the mission statement for each committee will be submitted to the State at that time.

D. DEMOGRAPHIC CHARACTERISTICS

The Region's 1990 population was estimated to be 23,377. As a whole the region has a relatively low population density. As mentioned previously, there are nine incorporated towns in the region. Bolivar is by far the largest town and the County Seat of Hardeman County with a 1990 population of 5,969. Whiteville is the second largest town with a 1990 population of 1,050. Over 62 percent of the Region's total population resides in unincorporated areas making it a predominately rural region. The Region's 1993 population projection and population density is shown in Table I-1.

TABLE I-1

POPULATION AND DENSITY  
1993

<u>Area*</u> <u>(Sq. Miles)</u>	<u>1993*</u> <u>Population</u>	<u>Avg. Density</u> <u>Population/Sq.Mi.</u>
668	23,218	34.76

\*Solid Waste Needs Assessment; Hardeman County

Three of the nine incorporated towns in the Region have a municipal solid waste collection system in place for residents. Two other towns contract with private companies for household collection. These are the only towns referenced in this plan with specific data from the Solid Waste Needs Assessment for Hardeman County. Table I-2 provides a break-down of the Regional population by urban and rural areas. Only the population of Bolivar is considered to be urban.

TABLE I-2

DISTRIBUTION OF THE TOTAL POPULATION  
BY URBAN AND RURAL AREAS, 1990\*

<u>Urban</u> <u>Population</u>	<u>%</u>	<u>Rural</u> <u>Population</u>	<u>%</u>
5,969	25.5	17,408	74.5

\*Solid Waste Needs Assessment; Hardeman County

The distribution of the population by sex and age is typical of the pattern in rural counties. Females, by virtue of their longer life span, predominate the 65 and over category by approximately 59 to 41 percent. Males hold a slightly higher percentage in the 17 and under ages (51.4 to 48.6 percent). Between the ages of 18 and 64 females outnumber males by approximately 52 to 48 percent. This distribution in the working

age population may reflect the pattern of young men leaving the rural areas for better job opportunities in urban areas such as Shelby County and Madison County. Table I-3 gives the population distribution for the Region.

TABLE I-3

DISTRIBUTION OF THE TOTAL REGIONAL POPULATION  
BY SEX AND AGE, 1990\*

<u>Age</u>	<u>Total</u>	<u>Male</u>	<u>%</u>	<u>Female</u>	<u>%</u>
0-4	1,772	922	52.0	850	48.0
5-17	4,849	2,481	51.2	2,368	48.8
18-44	9,048	4,432	49.0	4,616	51.0
45-64	4,369	2,045	46.8	2,324	53.2
65 +	<u>3,339</u>	<u>1,359</u>	40.7	<u>1,980</u>	59.3
Total	23,377	11,239	48.1	12,138	51.9

\*Solid Waste Needs Assessments; Hardeman County

The educational achievement level of adults (over 25 years) in the Region indicates just under half have a high school degree, with approximately 16 percent holding degrees beyond the high school level. Achievement levels also indicate that over one third of the adult population have less than a 9th grade education. Campaigns to educate the public and encourage recycling must be developed to address these widely varying target groups.

TABLE I-4

EDUCATIONAL ACHIEVEMENT  
OF ADULTS OVER 25 YEARS OLD\*

	<u>Number</u>	<u>%</u>
Less than 9th Grade	3,192	34.27
High School Degree	4,622	49.63
Associate Degree	394	4.23
College Degree	729	7.83
Post Graduate/Professional (>4)	<u>376</u>	4.04
Regional Total	9,313	

\*Solid Waste Needs Assessment; Hardeman County

The majority of all housing in the Region is classified as single family-detached or mobile home/trailer. Over 72 percent of the population occupies single family-detached housing while over 15 percent reside in mobile home/trailer housing. This type of housing in a mostly rural region will tend to increase the cost of solid waste collection if a door-to-door system is used. The distribution of the Regional population by housing type, occupancy and ownership is shown in Table I-5.

TABLE I-5

HOUSING TYPE AND OCCUPANCY CHARACTERISTICS\*

	<u>Total Persons</u>	<u>Occupied</u>	<u>Owner</u>	<u>Rented</u>
<b>Single Family</b>				
1, Detached	16,935	16,935	13,396	3,539
1, Attached	254	254	130	124
<b>Multi-Family</b>				
2	458	458	55	403
3-4	193	193	22	171
5-9	133	133	29	104
10-19	285	285	0	285
20-49	0	0	0	0
50 or more	0	0	0	0
Mobile Home/ Trailer	3,620	3,620	2,780	840
Other	<u>711</u>	<u>711</u>	<u>452</u>	<u>259</u>
Total	22,589	22,589	16,864	5,725

\*Solid Waste Needs Assessment; Hardeman County.

The institutional population of the Region is 788

Population projections for the ten year planning period must be used to scale the solid waste plan developed for the Region. The University of Tennessee and Division of Information Services, TDH, have developed the projections used for this Plan. Table I-6 presents the Regional population projection for the planning period.

TABLE I-6

REGION POPULATION PROJECTIONS  
1994-2003\*

<u>Year</u>	<u>Population Projection</u>
1994	23,165
1995	23,113
1996	23,061
1997	23,008
1998	22,956
1999	22,904
2000	22,853
2001	22,778
2002	22,704
2003	22,630

\*UT Department of Sociology and the Division of Information Resources, TDH. February 6, 1992 Revision.

The population in the Region will likely hold steady over the next few years. However, the population is moving out of incorporated towns into the surrounding areas. Any solid waste planning must take this movement into account in order to adequately serve the growing rural population. Any substantial population or industrial growth over the next 10 years will most likely occur in the northern half of the County along U. S. Highway 64 and along the Madison County and Chester County borders.

## E. ECONOMIC ACTIVITY

With an average per capita annual income of under \$12,000 and almost one quarter of the total population below the established poverty line, it is apparent that the Region has very substantial economic concerns. General economic data for the Region is provided in Table I-7.

TABLE I-7

## ECONOMIC INFORMATION, 1990\*

Population	23,377
MSA County (yes/no)	no**
Total Employment	10,059
Total Earnings	273,826,000
Per Capita Income	11,713
% Population Below Poverty Line	23.3

\*Solid Waste Needs Assessment; Hardeman County

\*\*Region is contiguous to the Jackson MSA

Employment in the Region well distributed between industrial, commercial and government related positions. The type of employment in the Region helps to indicate the magnitude and composition of per capita solid waste generation. The distribution of employment for the Region's population is provided in Tables I-8 and I-9 respectively.

TABLE I-8

% OF TOTAL EMPLOYMENT  
(NON-AGRICULTURAL)\*

<u>Sector</u>	<u>Employment</u>	<u>%</u>
Manufacturing	2,840	30.7
Construction	424	4.6
Trade	1,847	20.0
Finance	382	4.1
Service	1,539	16.6
Government	2,105	22.8
Transportation/ Public Utilities	<u>106</u>	1.2
Total	9,243	

\*Solid Waste Needs Assessment; Hardeman County

TABLE I-9

AGRICULTURAL EMPLOYMENT\*

<u>Total County Employment</u>	<u>Agricultural Employment</u>	<u>%</u>
10,059	816	8.1

\*Solid Waste Needs Assessment; Hardeman County

The commercial and industrial solid waste generators normally account for nearly two thirds of the total waste generation in a particular area. The Hardeman County Region has a sizeable number of commercial businesses and industries considering its rural nature. Table I-10 gives the total number of commercial and industrial solid waste generators with 10 or more employees.

TABLE I-10

MAJOR COMMERCIAL & INDUSTRIAL  
NON-HAZARDOUS SOLID WASTE GENERATORS

<u>Screening Criteria</u>	<u>Number of* Generators</u>	<u>Estimated Waste Quantity</u>
All generators with 10 or more employees	77	See Chapter II

\*Solid Waste Needs Assessment; Hardeman County

Large institutions and health care facilities can also generate a substantial portion of the waste stream. The Region does not have any large institutions, but it does have four larger health care facilities as indicated in Tables I-11 and I-12 respectively. School waste generation is discussed further in Chapter II along with the health care facilities in Table I-12.

TABLE I-11

INSTITUTIONS  
(HOUSING > 100 PERSONS)\*

NONE

\*Solid Waste Needs Assessment; Hardeman County

TABLE I-12

HEALTH CARE FACILITIES  
(MORE THEN 50 BEDS)\*

<u>No. of Facilities</u>	<u>No. of Beds</u>	<u>Infectious Waste Management</u>	<u>Estimated Waste Quantity</u>
4	620	N/A**	Not Available

\*Solid Waste Needs Assessment; Hardeman County

\*\*Outside of Region, Method and location not available

The Region makes use of the typical sources of local revenue to fund or subsidize solid waste systems. Tables I-13 and I-14 provide a general overview of the sources of local revenue with some specific solid waste system funding sources included.

TABLE I-13

## SOURCES OF LOCAL REVENUE\*

<u>Source</u>	<u>Yes/No</u>
Property Tax	Yes
Local Sales Tax	Yes
Waste Collection Fee	Yes <sup>1</sup>
User Fee/Tipping Fee	Yes <sup>2</sup>
Other	No

\*Solid Waste Needs Assessment; Hardeman County

<sup>1</sup>Cities of Bolivar, Hornsby and Whiteville only.<sup>2</sup>County only.

TABLE I-14

## COUNTY REVENUE SUMMARY\*

<u>Revenue Source</u>	<u>1991 Total</u>
Appraised Property Value	\$273,826,000
Property Tax Revenue	2,679,000
Sales Subject to Sales Tax	102,574,031
Sales Tax Revenue	1,815,405
Wheel Tax Revenue	351,682

\*Solid Waste Needs Assessment; Hardeman County

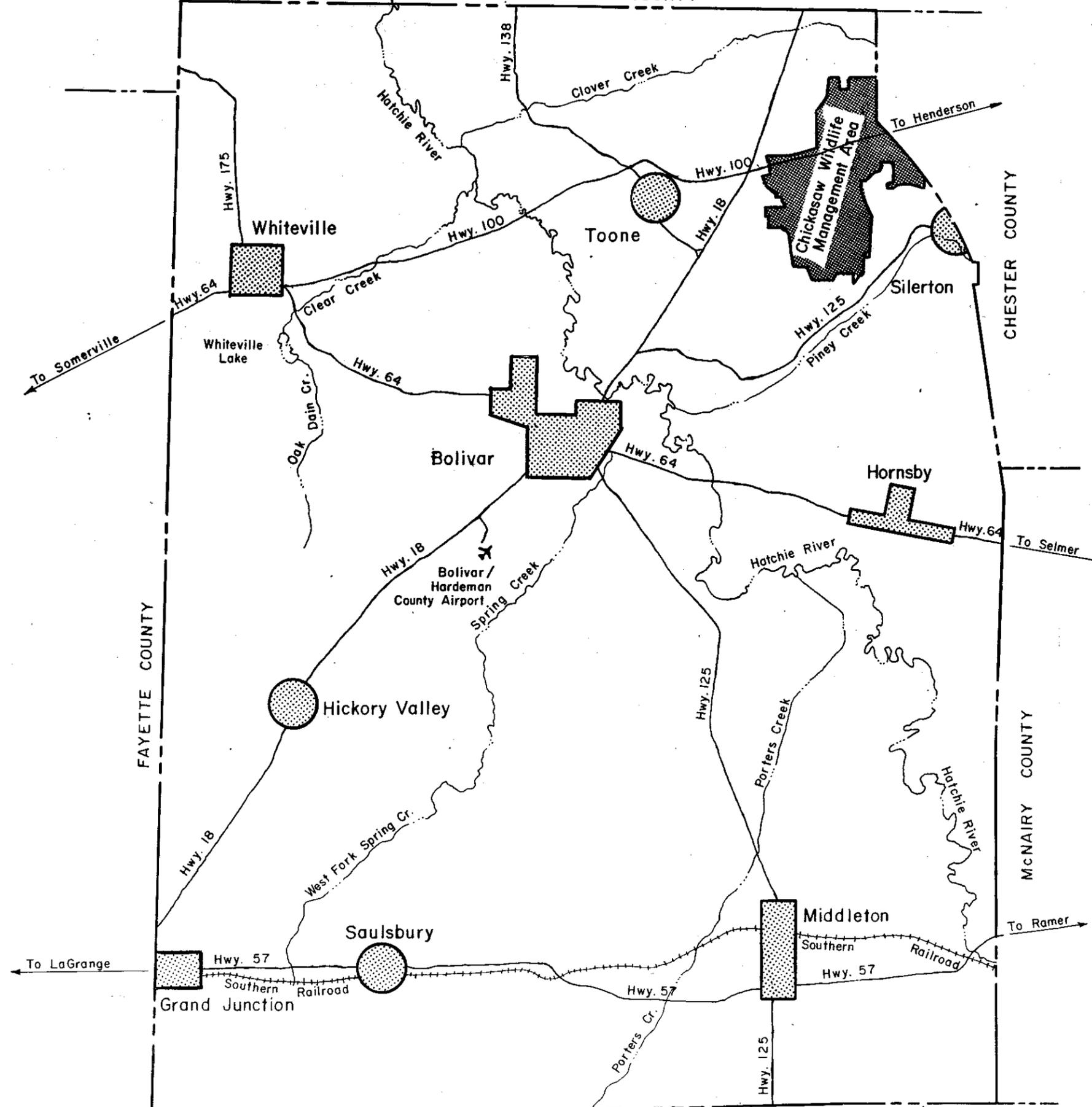
HAYWOOD COUNTY

MADISON COUNTY

Map No. I-1



Not to Scale



# Hardeman County Solid Waste Planning Region

FAYETTE COUNTY

CHESTER COUNTY

McNAIRY COUNTY

BENTON COUNTY

MISSISSIPPI

TIPPAH COUNTY

ALCORN COUNTY



**Grace & Associates**  
INCORPORATED

ARCHITECTURE • ENGINEERING • PLANNING • LANDSCAPE ARCHITECTURE  
2969 Elmore Park Rd. • P.O. Box 34968 • Memphis, TN 38184 • (901) 388-5253

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

A. WASTE STREAM CHARACTERIZATION

The waste stream for the region can be described by a number of factors including quantity, source, disposal method, generation rate, waste composition, etc. For this Plan it is important to discuss the waste generation rate per capita for the county as a whole. This rate can be an indication of the commercial and industrial strength of the region and will be used in determining the waste reduction goal mandated by the State. From the District Needs Assessments, Table II-1 provides information on the total waste generation and the per capita rate for the region.

TABLE II-1

ESTIMATED QUANTITY OF SOLID WASTE  
RECEIVED FOR DISPOSAL/INCINERATION, 1991\*

<u>Tons of Waste</u>	<u>1991 Population</u>	<u>Tons Per Capita</u>
28,500	23,324	1.22

\*Solid Waste Needs Assessment; Hardeman County

The regional solid waste generation rate of 1.22 tons per capita per year is somewhat high considering the rural demographics of Hardeman County. This high estimate could be the result of having a county-wide green box system in the unincorporated areas and use by non-county residents.

Solid wastes originate from three basic sources - residences, institutions and commercial businesses, and industries. Along with these sources, two smaller categories - special and other - include wastes such as sludges, hospital waste, tires, demolition debris and construction materials. The quantities and percentages of solid wastes from these sources are described in Table II-2.

TABLE II-2  
ORIGIN OF SOLID WASTES, 1991\*  
(TONS PER YEAR)

<u>Source</u>	<u>Estimated Tons Per Year</u>	<u>%</u>
Residential	17,100	60.0
Institutional/ Commercial	4,275	15.0
Non-Hazardous Industrial	7,125	25.0
Special	0	0.0
Other	0	0.0

\*Solid Waste Needs Assessment; Hardeman County

Table II-2 indicates that approximately 25 percent of the total solid waste stream for the region originates from major industries. Considering this large volume and the relatively small number of industries, it is apparent that the average industry generates a large volume of solid waste. Therefore, a large potential exists for waste reduction and recycling in the industrial sector. With this in mind, an industrial non-hazardous solid waste survey was conducted in the County to determine the types and volumes of waste being generated by major industry. Although survey results and industrial data are still being received, Table II-2A provides survey data received as of March, 1994. A more comprehensive data base of industrial non-hazardous solid waste generation will be developed during the first year of the Planning period.

The District Needs Assessment provided preliminary information on the types of solid wastes which could be easily diverted from final disposal in sanitary landfills. See Table II-3. These wastes were mostly categorized as Special and Other in Table II-2. In addition, the Needs Assessment calculated the composition of various components of the county's waste stream based on national averages. This waste stream characterization for the region is a provided in Table II-4.

TABLE II-2A  
INDUSTRIAL SOLID WASTE SURVEY  
DATA ACCUMULATED AS OF MARCH, 1994  
(TONS/YEAR)

Number of Industries Responding To Survey - 15  
Number of Employees - 2,256

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>
<u>Total</u>	773	35	2	60	260	4	38	23	22	0	1	23	76	216	10
Number of Employees 2,256	4	10	30	2	979	15	300	69	NA	20	2	125	100	550	50
<u>Waste Generation</u>															
Paper(15.2)	311	1	9	0	0	3	69	23	2	0	0	23	19	110	52
Cardboard(6.1)	167	0	0	0	130	0	3	4	0	0	0	23	0	7	0
Glass(3.3)	7	0	0	0	0	0	0	0	0	0	0	0	0	7	0
Aluminum(0.1)	44	0	0	0	0	0	0	1	0	0	0	23	13	7	0
Other Metals(0.9)	1,727	0	1	60	260	0	6	4	5	4	0	1060	6	216	105
Plastics(33.9)	1,291	0	0	0	195	0	0	0	0	0	0	1060	0	36	0
Resins(25.3)	79	0	7	0	65	0	0	0	0	0	0	0	0	7	0
Rubber/Leather(1.6)	47	0	7	0	0	0	0	0	1	3	0	0	0	36	0
Textiles(0.9)	77	0	1	0	0	0	6	1	0	0	0	23	0	36	10
Pallets(1.5)	23	0	0	0	0	0	4	1	0	0	0	0	0	7	11
Other Wood(0.4)	30	0	0	0	0	0	0	0	0	0	0	23	0	7	0
Yard Waste(0.6)	315	0	2	0	260	2	0	21	0	0	0	23	0	7	0
Food Waste(6.2)	42	0	0	0	0	0	0	0	0	0	0	23	12	7	0
Dirt(0.8)	165	0	0	0	130	0	0	0	0	0	0	0	0	14	21
Other(3.2)															
<u>Total(100.0)</u>	5,098	36	29	120	1300	9	126	78	30	7	1	2304	126	720	209

\*Industry Names are Not Identified

TABLE II-3

WASTE TYPES ACCEPTED FOR CLASS I DISPOSAL  
WHICH COULD BE DIVERTED, 1991\*  
(TONS/YEAR)

<u>Yard Waste</u>	<u>Sewage Sludge</u>	<u>Construction/ Demolition</u>	<u>Tires</u>	<u>White Goods</u>
570	0	0	0	0

\*Solid Waste Needs Assessment; Hardeman County

TABLE II-4

REGIONAL WASTE CHARACTERIZATION\*

<u>Waste Category</u>	<u>Percentage (National Average)</u>	<u>Calculated Tons</u>
Paper & Paperboard	40.0	11,400.00
Glass	7.0	1,195.00
Ferrous Metals	6.5	1,852.50
Aluminum	1.4	399.00
Other Non-Ferrous Metals	0.6	171.00
Plastics	8.0	2,280.00
Rubber & Leather	2.5	712.50
Textiles	2.1	598.50
Wood	3.6	1,026.00
Food Waste	7.4	2,109.00
Yard Waste	17.6	5,016.00
Misc. Inorganic Waste	1.5	427.50
Other	<u>1.7</u>	<u>513.00</u>
Total	100.0	28,500.00

\*Solid Waste Needs Assessment; Hardeman County

Although the estimated tonnages of different waste types presented in Table II-4 were compiled from national averages, they are

considered accurate enough for planning purposes.

Another important factor in the waste stream analysis is determining the portion of solid waste which is considered unmanaged. This component includes wastes which are disposed of illegally in open dumps, illegally incinerated, placed in green boxes outside the county, or otherwise not accounted for in the established collection and disposal systems of the county. In an effort to quantify these wastes, the District Needs Assessments computed the potential waste generation for the county based on a per capita generation rate of 1.095 tons per capita per year. These figures are presented in Table II-5, however they are not considered to be valid for the Hardeman County region. A generation rate of over 1.0 ton per capita per year is most likely too high for predominately rural counties. When the region develops a comprehensive county-wide collection service, it is assumed that the unmanaged solid waste stream will be insignificant.

TABLE II-5  
UNMANAGED WASTES, 1991\*  
(TONS/YEAR)

<u>Potential** Waste Generation</u>	<u>Estimated Waste Disposal</u>	<u>Unmanaged Waste</u>	<u>Percent of Potential</u>
25,540	28,500	-2,960	-11.59

\*Solid Waste Needs Assessment; Hardeman County

\*\*Estimated based on 1.095 Tons/Capita/Year generation rate.

#### B. WASTE COLLECTION AND TRANSPORTATION SYSTEMS

The District Needs Assessment for the County provided an overview of the solid waste collection and transportation systems presently in operation. Municipal waste management planning begins with developing a comprehensive and efficient collection system. The existing collection systems are strong in some areas and require some improvement in other areas in order to meet the minimum level of service required by the State. Table II-6 describes the level of household waste collection service now available in the Region. Map II-1 outlines the various service areas and level of service in each area. Green-box locations are shown on Map No. II-2.

TABLE II-6  
HOUSEHOLD SOLID WASTE COLLECTION SERVICE\*

<u>No. of Households</u>	<u>Municipal Pickups</u>	<u>Green-Box Service</u>	<u>Contract Pickups</u>	<u>No Service</u>
8,276	2,585	5,138	553	0

\*Solid Waste Needs Assessment; Hardeman County

Existing collection systems across the region vary in their collection frequency and equipment. Solid waste collection vehicles ranging from less than 5 cubic yards of capacity to 31-40 cubic yard of capacity are used by different municipalities and private contractors. Collection frequencies vary from once per week to two times per week for residences and businesses. There are no solid waste transfer stations in the region at this time, therefore all waste collected by these vehicles is taken directly to a landfill. The average haul distance from a collection area ranges from 4 miles in Bolivar to approximately 20 miles from Grand Junction. These average haul distances are considered short by national standards for transporting solid waste, however they do reflect a significant cost of the overall waste management system. Should the county owned landfill cease operating, the feasibility of constructing and operating a transfer facility would require investigation. The collection services available in the various municipalities and by private collection contractors are summarized in Table II-7. Waste collection and transportation system options for the planning period are evaluated in Chapter V.

TABLE II-7

MUNICIPAL/PRIVATE COLLECTION SERVICES\*

<u>City</u>	<u>Household Pickups</u>	<u>Collection Frequency</u>	<u>Businesses</u>	<u>Collection Frequency</u>	<u>Pickups Per Route</u>
Grand Junction	170	1/wk	25	1/wk	195
Middleton	251	2/wk	30	2/wk	281
Bolivar	4,500**	1/wk	n/a	n/a	n/a
Private Services***	553	n/a	79	n/a	n/a

\*Solid Waste Needs Assessment; Hardeman County

\*\*Estimated

\*\*\*Includes Whiteville and Hornsby

C. SOURCE REDUCTION AND RECYCLING SYSTEMS

In order for the State municipal solid waste reduction and recycling goal of 25 percent to be achieved, the Hardeman County Region will need to quantify its existing reduction/recycling efforts and also establish additional programs. At this time there are ongoing waste reduction/recycling efforts in the region. The Hardeman County Developmental Services Center, Inc. established a recycling center in the City of Bolivar. In 1991 approximately 460 tons of material was collected and recycled. A more detailed description of the center is included in Chapter VI.

The District Needs Assessment identified seven(7) industries with existing recycling/waste reduction activities. Over 2,700 tons of

waste from these industries was diverted from Class I landfills in 1991. More details on industrial waste reduction and recycling are included in Chapters IV and VI respectively. Progressive industries have ongoing programs in-house to reduce their waste stream and thus reduce their waste management costs. Commonly reused or recycled materials include wood pallets, cardboard, paper, aluminum, plastics, and scrap metals. As a result of the industrial solid waste survey mentioned previously, the University of Tennessee's Center for Industrial Services will be contacted about establishing an Industrial Solid Waste Focus Group in the County. The goal of the focus group will be to look for additional ways to reduce the overall waste stream going to the landfill and also to realize an economic benefit for the industries.

The County also has a limited number of small businesses which will reclaim specific waste materials such as used oil, automobile batteries, various automobile parts, aluminum and various other scrap metals. Some of these businesses are strictly operating as recycling centers, and others provide outlets for recyclable materials as an extra service for their customers. Chapters IV and VI provide information on the overall impact of these industrial and small business waste reduction efforts. The regional approach to all source reduction and recycling systems is evaluated in Chapters IV and VI respectively.

#### D. WASTE PROCESSING, COMPOSTING AND WASTE-TO-ENERGY/INCINERATION SYSTEMS

The City of Bolivar is presently composting leaves and chipping tree limbs and brush for City residents. These activities are discussed further in Chapter VII. Incineration of infectious waste from the four major health care facilities is provided at unspecified offsite locations.

The Plan guidance document requested tabulation of composting and incineration facilities as Tables II-6 and II-7, however since these facilities were not identified in the Needs Assessment, these tables were omitted and the table numbers were used previously.

#### E. DISPOSAL FACILITIES - LANDFILLS AND BALEFILLS

The City of Bolivar and Hardeman County co-own a Class I landfill which is operated by the City of Bolivar. Additional land was recently permitted for Class I use, and the facility will continue to operate after October of 1996 when all of the latest State and Federal regulations will be required for operation, closure and post-closure. Information on the existing landfill and its remaining capacity is presented in Table II-8. The facility is located on Map II-3. The anticipated closure date for the facility is provided in Table II-9.

TABLE II-8

## EXISTING SOLID WASTE LANDFILLS

<u>Landfill Name</u>	<u>Permitted Area</u>	<u>1993 Disposal Rate, (T/D)</u>	<u>Remaining Area</u>
Bolivar/Hardeman County Landfill	18 acres	65(+/-)	16 acres

TABLE II-9

## ANTICIPATED CLOSURE DATE OF EXISTING LANDFILLS

<u>Landfill Name</u>	<u>Anticipated Closure Date</u>
Bolivar/Hardeman County Landfill	2009(+/-)

There are no other proposed landfill developments in the Region at this time. Future planned expansions of the County landfill are presented in Table II-10 below.

TABLE II-10

PLANNED EXPANSIONS/NEW FACILITIES  
WITH GREATER THAN 10 YEARS OPERATING LIFE\*

<u>Facility Name</u>	<u>New or Expansion</u>	<u>Capacity (Acres)</u>	<u>Operating Date</u>	<u>Disposal Rate(T/D)</u>
----------------------	-------------------------	-------------------------	-----------------------	---------------------------

N O N E P L A N N E D

\*Solid Waste Needs Assessment; Hardeman County

Based on the remaining capacity of the existing City/County owned landfill, the existing and planned capacity for Class I solid waste disposal in Hardeman County is presented in Table II-11.

TABLE II-11

EXISTING AND PLANNED CLASS I  
REGIONAL SOLID WASTE CAPACITY, TONS

<u>Year</u>	<u>Existing Capacity</u>	<u>Planned Capacity</u>	<u>Total*</u>
1993	307,200	0	307,200
1994	288,000	0	288,000
1995	268,800	0	268,800
1996	249,600	0	249,600
1997	230,400	0	230,400
1998	211,200	0	211,200
1999	192,000	0	192,000
2000	172,800	0	172,800
2001	153,600	0	153,600
2002	134,400	0	134,400
2003	115,200	0	115,200

\*Totals are calculated based on 1,600 tons/month or 19,200 tons/year received at the landfill for the 10 year planning period. This annual tonnage is based on 1993-1994 data. See Chapter III for solid waste growth trends and projections.

F. SYSTEM MAP - 1994

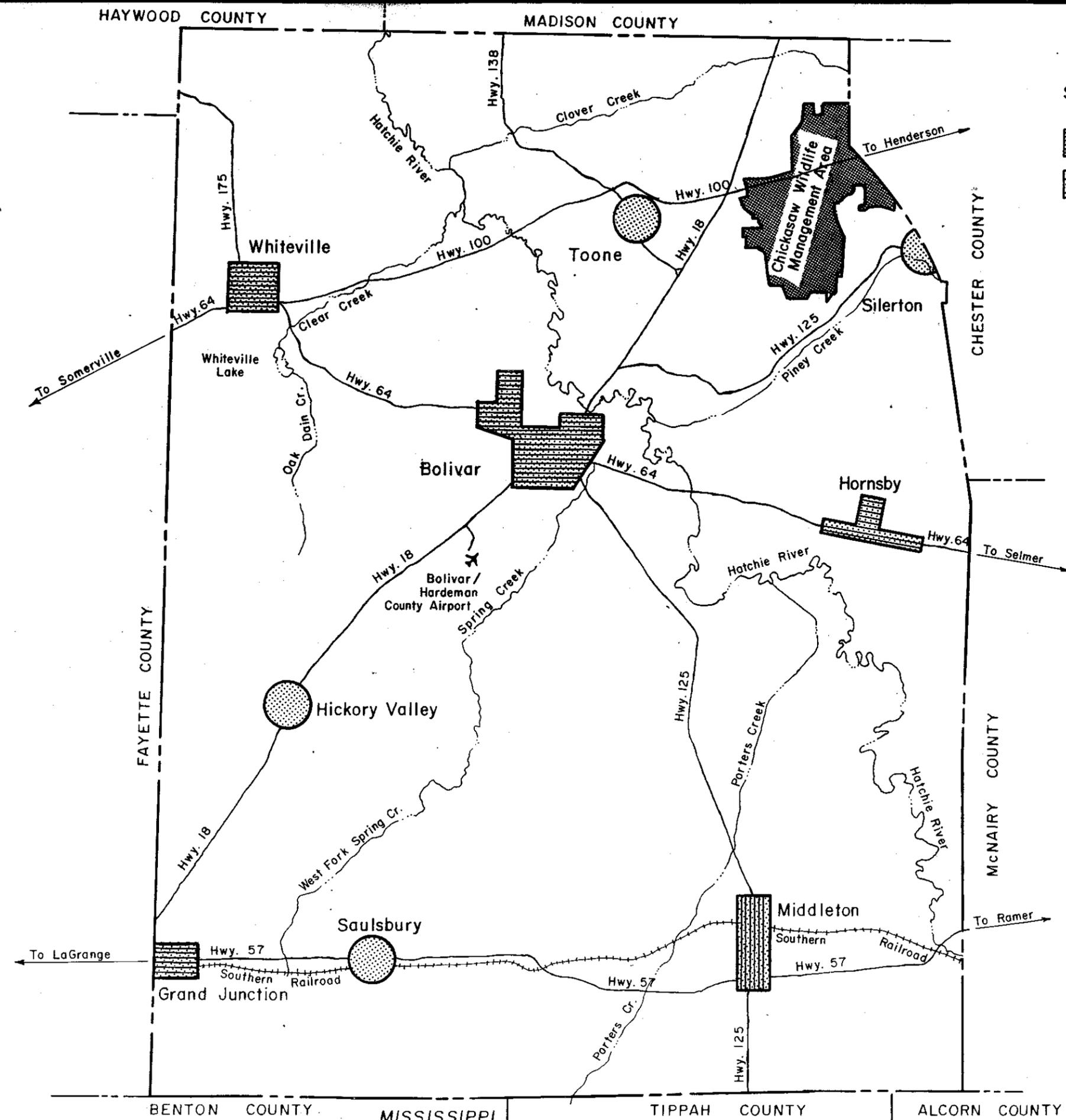
Map II-4 indicates all of the existing solid waste management systems in the Region.



- SOLID WASTE COLLECTION SERVICE AREAS**
-  COLLECTION FREQUENCY, 1/WEEK
  -  COLLECTION FREQUENCY, 2/WEEK

# Hardeman County Solid Waste Planning Region

Not to Scale



**Grace & Associates**  
INCORPORATED

ARCHITECTURE • ENGINEERING • PLANNING • LANDSCAPE ARCHITECTURE  
2969 Elmore Park Rd. • P.O. Box 34968 • Memphis, TN 38184 • (901) 388-5253

HAYWOOD COUNTY

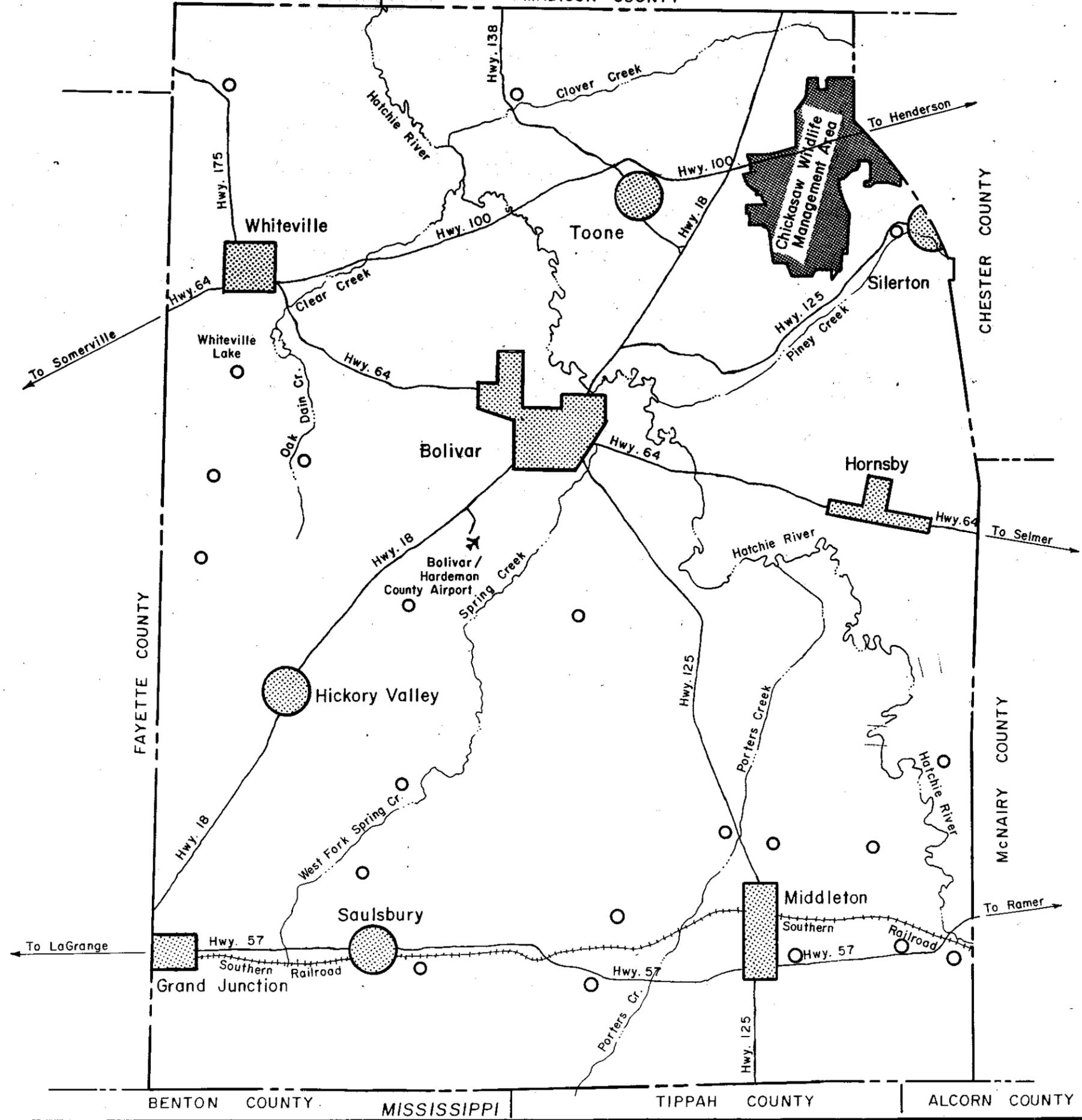
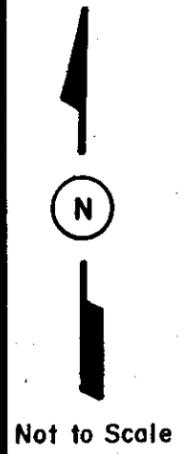
MADISON COUNTY

Map No. II-2

COUNTY GREEN-BOX LOCATIONS

○ APPROXIMATE LOCATION

# Hardeman County Solid Waste Planning Region



FAYETTE COUNTY

CHESTER COUNTY

MCNAIRY COUNTY

BENTON COUNTY

MISSISSIPPI

TIPPAH COUNTY

ALCORN COUNTY



**Grace & Associates**  
INCORPORATED

ARCHITECTURE • ENGINEERING • PLANNING • LANDSCAPE ARCHITECTURE  
2969 Elmwood Park Rd. • P.O. Box 34968 • Memphis, TN 38184 • (901) 388-5253

HAYWOOD COUNTY

MADISON COUNTY

Map No. II-3

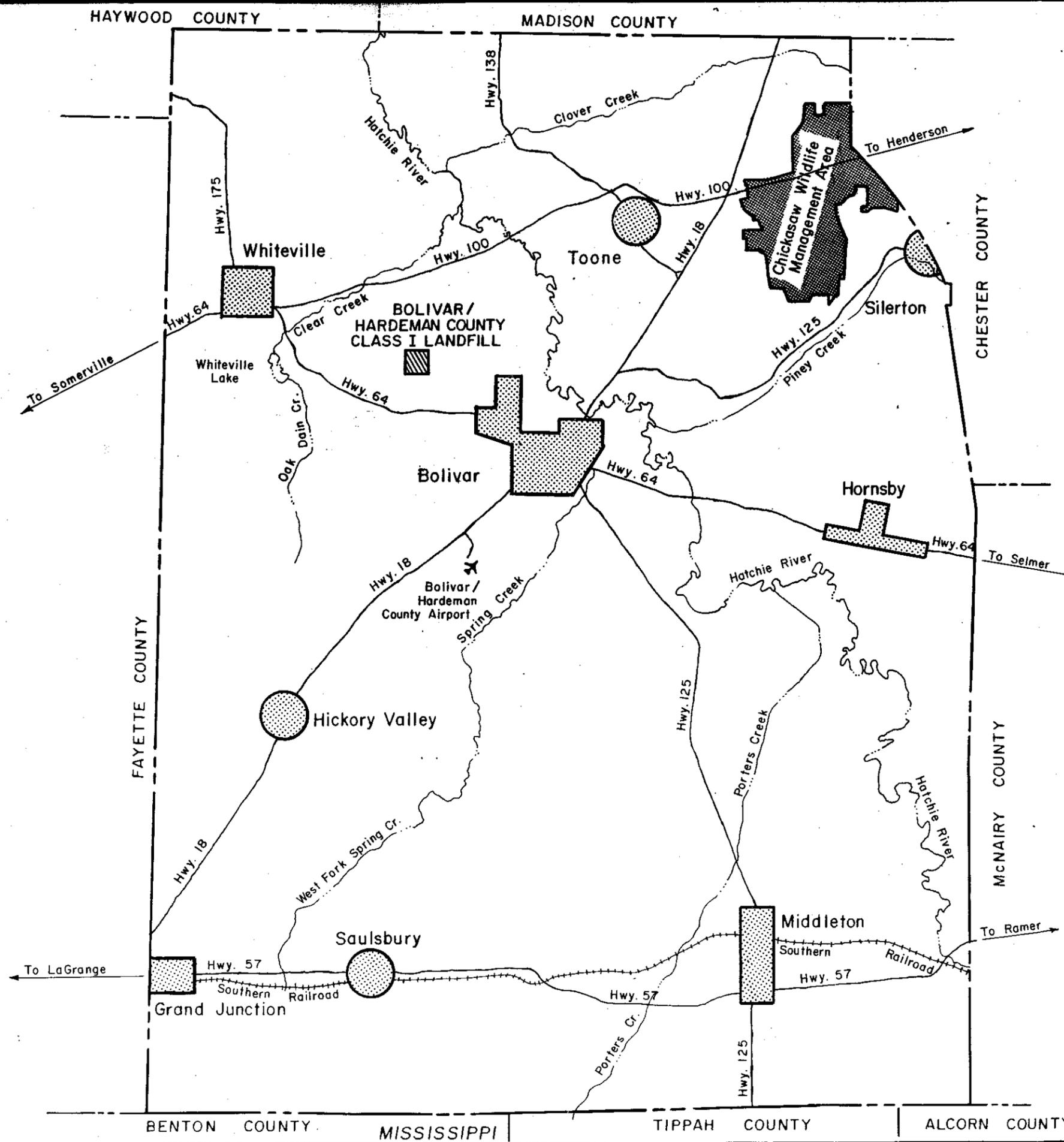
EXISTING COUNTY LANDFILL SITES

APPROXIMATE LOCATION

# Hardeman County Solid Waste Planning Region



Not to Scale



**Grace & Associates**  
INCORPORATED

ARCHITECTURE • ENGINEERING • PLANNING • LANDSCAPE ARCHITECTURE  
2969 Elmore Park Rd. • P.O. Box 34968 • Memphis, TN 38184 • (901) 385-5253

EXISTING SOLID WASTE FACILITIES

➔ WASTE FLOW

▨ LANDFILL

○ GREEN-BOX

△ RECYCLING CENTER

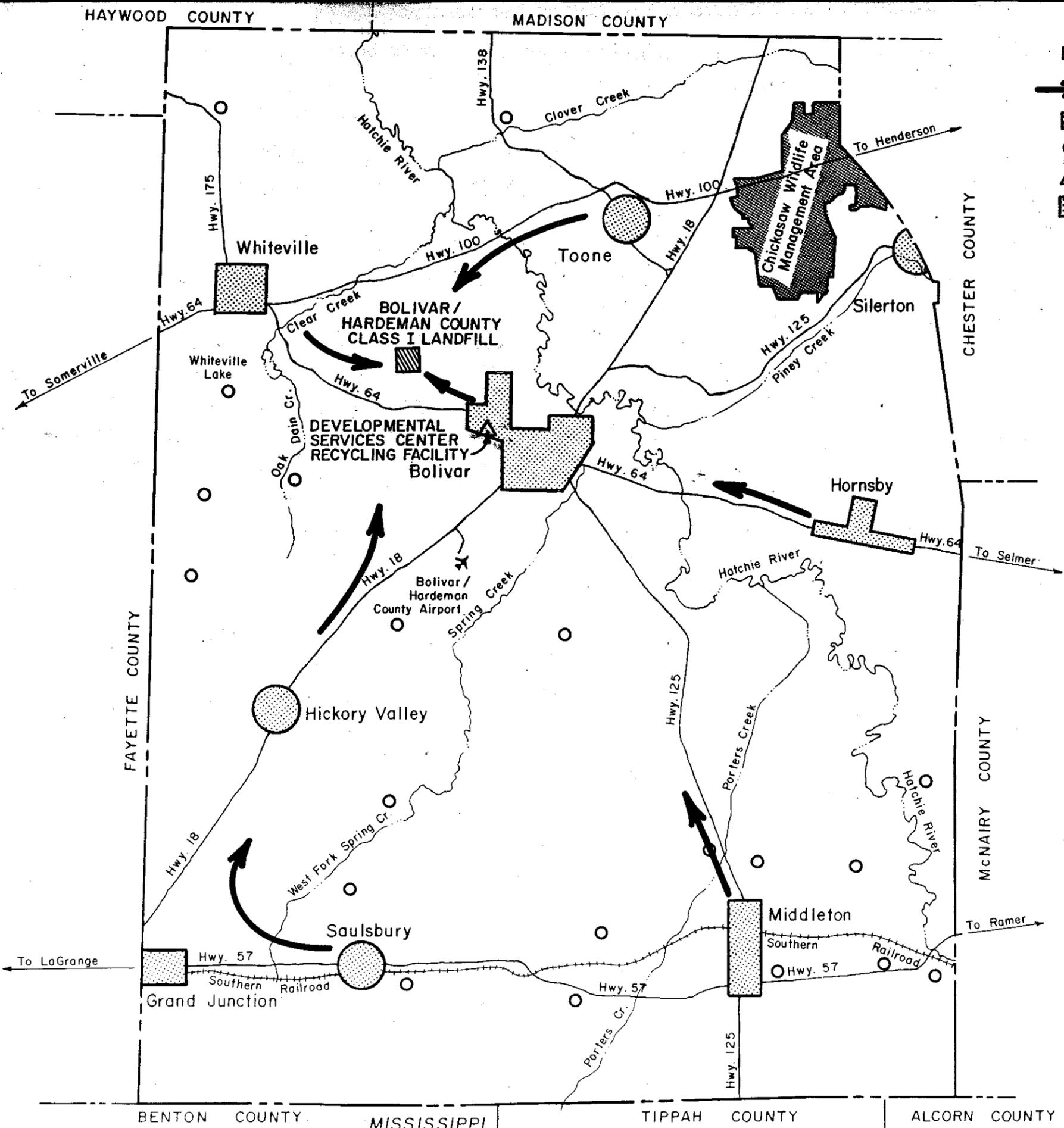
▩ DOOR TO DOOR COLLECTION

# Hardeman County

## Solid Waste

## Planning Region

Not to Scale



CHAPTER III  
 GROWTH TRENDS,  
 WASTE PROJECTIONS AND  
 PRELIMINARY SYSTEM STRUCTURE

A. GROWTH TRENDS AND WASTE PROJECTIONS

The District Needs Assessment completed for Hardeman County includes a chapter on solid waste generation projections. These projections are made up to the year 1991. Base projections are calculated using population projections and an annual per capita solid waste generation rate in tons per person per year. These rates vary slightly from county to county depending primarily on the commercial, industrial and institutional solid waste contribution. The base solid waste projections are then modified by an economic growth factor per year, an estimated waste reduction percentage, conditions related to regulatory changes or other specific county influences, and any solid waste imports to or exports from the county. Ultimately a projection of the total quantity of solid waste requiring collection, transportation, processing or treatment and disposal is calculated for each year in the planning period. The tables that follow (Table III-1 through III-8) summarize these projections for Hardeman County from the District Needs Assessment and extend the projections to the year 2003.

TABLE III-1  
 ANNUAL PER CAPITA GENERATION RATES\*

<u>Total Waste Disposed in FY 1993, Tons</u>	<u>Projected Population 1993</u>	<u>Annual Per Capita Generation Tons/Person/Year</u>
28,370	23,218	1.222

\*District Needs Assessment: Hardeman County

TABLE III-2

TOTAL WASTE GENERATION (TONS)  
 BASED ON POPULATION GROWTH  
 AND 1993 PER CAPITA RATES\*

<u>Year</u>	<u>Total</u>
1994	28,306
1995	28,242
1996	28,179
1997	28,114
1998	28,050
1999	27,987
2000	27,924
2001	27,833
2002	27,742
2003	27,652
Total	280,029

\*District Needs Assessment: Hardeman County  
 (Data Projected to Year 2003)

Table III-3 provides an estimated quantity of solid wastes that will be generated in Hardeman County during the planning period without any waste reduction efforts. Both population changes and economic growth are factored into the analysis. Except for the wastes that are removed from the waste stream at the point of waste generation, these quantities reflect the total waste tonnage requiring collection and/or transportation systems.

TABLE III-3

TOTAL WASTE GENERATION (TONS)  
 ADJUSTED FOR POPULATION CHANGE  
 AND 3.2 % ANNUAL ECONOMIC GROWTH\*

<u>Year</u>	<u>Total</u>
1994	29,277
1995	29,245
1996	29,213
1997	29,181
1998	29,152
1999	29,124
2000	29,098
2001	29,044
2002	28,992
2003	28,942
Total	291,268

\*District Needs Assessment: Hardeman County  
 (Data Projected to Year 2003)

The Solid Waste Management Act of 1991 established a minimum solid waste reduction goal of 25% to be in place by December 31, 1995. The goal is to reduce the amount of solid waste currently being disposed of in Class I landfills across the state. Calculations of the waste reduction tonnage are to be based on the 1989 per capita solid waste generation rate as published in the 1990 University of Tennessee report entitled "Managing Our Waste: Solid Waste Planning in Tennessee". The tonnage of waste calculated by multiplying twenty-five percent (25%) of the 1989 per capita generation rate by the projected populations in 1995 through 2003 is to be diverted from the Class I landfill waste stream each year. These calculations are provided for Hardeman County in Table III-4 along with an adjusted total waste quantity requiring disposal.

TABLE III-4

TOTAL WASTE GENERATION REQUIRING DISPOSAL (TONS)  
ADJUSTED FOR POPULATION CHANGE, ECONOMIC GROWTH  
AND WASTE REDUCTION\*

<u>Year</u>	<u>Population</u>	<u>Reduction %</u>	<u>Reduction Tonnage</u>	Table III-3 <u>Generation Estimate</u>	<u>Disposal Tonnage</u>
1994	23,165	5.0	1,398	29,277	27,879
1995	23,113	15.0	4,185	29,245	25,060
1996	23,061	25.0	6,959	29,213	22,254
1997	23,008	25.0	6,943	29,181	22,238
1998	22,956	25.0	6,927	29,152	22,225
1999	22,904	25.0	6,911	29,124	22,213
2000	22,853	25.0	6,896	29,098	22,202
2001	22,778	25.0	6,873	29,044	22,171
2002	22,704	25.0	6,851	28,992	22,141
2003	22,630	25.0	6,829	28,942	22,113
Total			60,772	291,268	230,496

\*Reduction tonnage is based on percentages of the 1989 base rate for per capita generation. This per capita rate for waste reduction is multiplied by the projected population for each year in the planning period. The 1989 base rate is 1.207 for Hardeman County.

In some instances local, state or federal regulatory changes or other influences such as major industrial relocations can have a significant impact on the solid waste quantities requiring disposal. Hardeman County does not anticipate any noticeable impact from these type changes on their waste disposal capacity needs.

TABLE III-5

TOTAL WASTE GENERATION REQUIRING DISPOSAL (TONS)  
ADJUSTED FOR REGULATORY CHANGES

This Table is not needed for the Hardeman County Region

TABLE III-6

TOTAL WASTE GENERATION REQUIRING DISPOSAL (TONS)  
ADJUSTED FOR SPECIAL FACTORS

This Table is not needed for the Hardeman County Region

TABLE III-7

TOTAL WASTE GENERATION REQUIRING DISPOSAL (TONS)  
ADJUSTED FOR IMPORTS/EXPORTS

<u>Year</u>	<u>Imports(+)/ Exports(-)</u>	<u>Adjusted Total</u>
1994	0	27,879
1995	0	25,060
1996	0	22,254
1997	0	22,238
1998	0	22,225
1999	0	22,213
2000	0	22,202
2001	0	22,171
2002	0	22,141
2003	<u>0</u>	<u>22,113</u>
Total	0	230,496

After making all foreseeable adjustments to the waste generation projections for the planning period, the total waste quantity requiring disposal capacity was determined for the region.

TABLE III-8

TOTAL WASTE GENERATION REQUIRING DISPOSAL (TONS)  
IN THE HARDEMAN COUNTY REGION  
INCLUDING ALL ADJUSTMENT FACTORS

<u>Year</u>	<u>Adjusted Total</u>
1994	27,879
1995	25,060
1996	22,254
1997	22,238
1998	22,225
1999	22,213
2000	22,202
2001	22,171
2002	22,141
2003	<u>22,113</u>
Total	230,496

## B. PRELIMINARY SYSTEM DESIGN

The current solid waste management systems in the Hardeman County Region will require upgrading. Even those municipal systems which may have adequate collection, transportation and disposal arrangements will need to introduce new waste reduction programs. Listed below are the major system components that may be a part of the regional solid waste plan.

- Waste collection and transportation
- Waste reduction
- Recycling
- Waste Processing, composting, waste-to-energy and/or incineration
- Disposal
- Public information and Education
- Problem wastes management

Each of these system components will be evaluated in Chapters IV through X that follow. It is anticipated that each of these component categories in some form or another will become an integral part of the Regional Plan. Managing wastes by waste-to-energy or incineration methods is expected to receive the least attention due to a number of disadvantages which will be discussed in Chapter VII.

In addition to these waste management systems, the county and regional staffing, scheduling, funding, and statutory controls necessary to make them effective will also be analyzed.

## C. EVALUATION CRITERIA FOR THE REGION

Evaluation criteria for each of the waste management system components will include: institutional compatibility, number and size of facilities needed, regional markets for recovered materials or energy, capital and annual operating costs, unit costs, siting and regulatory requirements, environmental impacts, public acceptance and any other criteria selected by the Hardeman County Regional Solid Waste Board.

CHAPTER IV

WASTE REDUCTION

A. ESTABLISHING A BASE YEAR QUANTITY

The State established the following statutory requirement for waste reduction as part of the Solid Waste Management Act of 1991: "The goal of the State is to reduce by twenty-five percent (25%) the amount of solid waste disposed of at municipal solid waste disposal facilities and incinerators, measured on a per capita basis within Tennessee by weight, by December 31, 1995." The base year for calculating progress toward that goal is 1989. The annual solid waste quantity and population figure used to calculate the per capita waste generation in 1989 are documented in the UT report entitled "Managing Our Waste: Solid Waste Planning in Tennessee" (February 1990). Based on this report, the Regional statistics are provided in Table IV-1.

Table IV-1

<u>County</u>	<u>1989 Population</u>	<u>1989 Waste Generation</u>
Hardeman	24,550✓	29,640✓

The base year per capita solid waste generation is 1.207 tons/capita/year. As stated previously, the entire region is not served by solid waste collection at this time although a green-box system is in place. Therefore the 1989 per capita base rate may need to be adjusted. During the first year of the Planning period as additional commercial, industrial and residential waste generation data are accumulated, the Region may submit documentation to the State to adjust the base year and the base rate. If this is done, the waste reduction goals calculated below will be modified accordingly.

B. TARGET 1995 WASTE REDUCTION PER CAPITA DISPOSAL RATE

The statutory solid waste reduction tonnage per capita is calculated as follows:

1989 per capita rate x 0.25 = Target 1995 per capita reduction

1.207 tons/capita/yr x 0.25 = 0.302 tons/capita/yr

The statutory tonnage of waste that must be reduced at the source, or otherwise diverted from Class I landfills by December 31, 1995 is calculated as follows:

Target 1995 per capita reduction x 1995 projected population

0.302 tons/capita/yr x 23,113 = 6,980 tons/year reduction tonnage

C. MEETING THE SOLID WASTE REDUCTION GOAL

1. Statement of Regional Goals - The goal of the Hardeman County solid waste planning region is to develop and implement at least one (1) waste reduction/recycling strategy in each on the following sectors by December 31, 1995: residential, industrial, commercial, institutional and governmental. By the same date, the region will have a more comprehensive data base of the region's total waste generation and full documentation of all waste reduction contributing toward the 25% goal. By the end of the initial 10 year planning period a comprehensive waste reduction/recycling program for the entire Cuntty will be in place with ongoing efforts to further increase waste reduction.

2. Allocations for the 25% Reduction Goal - The 25% reduction in solid waste taken to Class I facilities will be achieved by allocating the reduction percentages between different materials (yard wastes, paper, metals, etc.) and economic sectors (residential, industrial, etc.). As indicated in Table III-4, the region will attempt to achieve at least 5% reduction in 1994 (1,398 tons) and 15% reduction in 1995 (4,185). The goal for 1996 will be the full 25% reduction of the 1989 base per capita rate.

Based on the regional waste characterization provided in the District Needs Assessment for Hardeman County and the reduction goal for specific materials, the 1996 reduction tonnage in each waste category is estimated in the following table.

<u>Waste Category</u>	<u>Est. %</u>	<u>1996 Tons</u>	<u>Reduction %</u>	<u>Reduction Tons</u>
Paper & Paperboard	40.0	11,685	25.0	1,169
Glass	7.0	2,045	0.0	0
Ferrous Metals	6.5	1,899	5.0	95
Aluminum	1.4	409	5.0	20
Other Non-Ferrous	0.6	175	0.0	0
Plastics	8.0	2,337	5.0	117
Rubber & Leather	2.5	730	0.0	0
Textiles	2.1	613	0.0	0
Wood	3.6	1,052	75.0	789
Food Waste	7.4	2,162	0.0	0
Yard Waste	17.6	5,142	95.0	4,885
Misc. Organic	1.5	438	0.0	0
Other	1.8	526	0.0	0
Total		<u>29,213</u>		
Solid Waste Reduction Achieved				<u>7,075</u>
Solid Waste Reduction Goal				<u>6,980</u>

Waste reduction from all sources (i.e. residential, industrial, etc.) will be necessary to achieve the 25% goal. The following waste reduction percentages from each economic sector will be targeted initially, however modification of these estimates will likely be included in the annual Plan updates.

<u>Economic Sector</u>	<u>% of Total Waste Stream*</u>	<u>x Goal</u>	<u>=</u>	<u>% Reduction of Waste Stream</u>	<u>Reduction Tonnage</u>
Residential	40	x 25%	=	10.0%	2,921
Commercial	15	x 25%	=	3.75%	1,095
Industrial	30	x 25%	=	7.5%	2,191
Institutional	5	x 25%	=	1.25%	365
Governmental	<u>10</u>	x 25%	=	<u>2.5%</u>	<u>730</u>
Total	100			25.00%	7,302

\* Estimated

### 3. Strategies for Solid Waste Reduction

a. Credits for Previous Waste Reduction (1985-1989) - Although it is likely that several waste reduction and recycling activities were taking place between 1985 and 1989, the Plan does not attempt to address those activities or quantify them at this time. After additional data is obtained during the first year of the Plan, the Region will request credit for reduction and recycling activities conducted between 1985 and 1989. When this is done, the base year and the per capita base rate will be modified accordingly.

b. Materials Recovery, Reuse and Recycling - As stated previously, the Region's goal for solid waste reduction is 5% in 1994, 15% in 1995 and 25% in 1996. Reductions based on residential recycling are expected to be relatively small due to the slow process of educating the public about recycling and the slower process of changing the public's resistance to participate in recycling. Reductions based on commercial and industrial waste recovery, reuse and recycling should be significant if adequate data on past waste reduction efforts can be obtained and if industry is receptive to new reduction efforts. Recycling and source reduction strategies are discussed in Chapter VI.

c. Solid Waste Diversion from Class I Facilities - The diversion of wastes from Class I facilities to Class III/IV facilities will be a primary focus of waste reduction during the first few years of the Plan. The costs associated with constructing, operating and maintaining a Class III/IV landfill are discussed in Chapter VIII. The goals for solid waste recovery, reuse and recycling vs. waste diversion for the first three years are provided below.

<u>Year</u>	<u>Overall Waste Reduction</u>	<u>% Diverted</u>	<u>% Recycled</u>
1994	5%	4%	1%
1995	15%	12%	3%
1996	25%	20%	5%

d. Economic Strategies for Waste Reduction - The Region does not plan to pursue any economic incentives or disincentives for increasing overall solid waste reduction at this time.

e. Other Waste Reduction Strategies - See Chapter VI for recycling and source reduction strategies.

f. A summary of the estimated waste reduction quantities is provided in Table IV-2 below.

Table IV-2  
Estimated Quantities of Waste Reduction

<u>Year</u>	<u>Previous Reductions</u>	<u>Recovered/ Recycled</u>	<u>Diverted</u>	<u>Economic Strategy</u>	<u>Other</u>	<u>Total*</u>
1985- 1989	NA	NA	0	0	0	NA
1990	NA	NA	0	0	0	NA
1991	NA	NA	0	0	0	NA
1992	NA	NA	0	0	0	NA
1993	NA	NA	0	0	0	NA
1994	0	280	1,118	0	0	1,398
1995	0	837	3,348	0	0	4,185
1996	0	1,392	5,567	0	0	6,959
1997	0	1,389	5,554	0	0	6,943
1998	0	1,385	5,542	0	0	6,927
1999	0	1,382	5,529	0	0	6,911
2000	0	1,379	5,517	0	0	6,896
2001	0	1,375	5,498	0	0	6,873
2002	0	1,370	5,481	0	0	6,851
2003	0	1,366	5,463	0	0	6,829
Total		12,155	48,617	0	0	60,772

\*Reduction totals are based on Table III-4. These estimates will be updated annually as data is accumulated.

#### D. STAFFING, BUDGET AND FUNDING

Staffing, budget and funding for various waste reduction strategies are discussed in other chapters as follows.

Recovery, reuse and recycling	- Chapter VI
Waste Diversion	- Chapter VIII
Public information and education	- Chapter IX
Problem waste reduction	- Chapter X

#### E. IMPLEMENTATION SCHEDULE

Implementation schedules for each waste reduction strategy are discussed in the respective chapters listed above.

#### F. SPECIFIC RESPONSIBILITIES FOR ACHIEVING GOALS

It will be the responsibility of each entity within the Region operating or providing solid waste collection services to account for its waste reduction activities and achievements. Municipalities will be encouraged and welcomed into participating in the overall Regional solid waste Plan. Participation in the overall Plan would place specific responsibility for achieving the 25% reduction goal on the Region. However, if a municipality wishes to continue its own solid waste collection services, the responsibility for the 25% reduction goal will belong to the individual municipality. Other specific responsibilities for waste reduction goals are discussed in the respective chapters listed above.

#### G. COLLECTION AND PREPARATION OF ANNUAL REPORTS

The Region will request that all municipalities submit pertinent solid waste data to the Regional Solid Waste Board by January 15 of each year. A general survey form for obtaining this information will be mailed to each municipality by December 1 of each year. Information from other major generators of solid waste in the Region will be obtained in a similar manner each year. This data along with information from the approved Regional solid waste system will be aggregated and used to update and/or modify the Plan annually as required by the State.



## CHAPTER V

### WASTE COLLECTION AND TRANSPORTATION

#### A. MINIMUM REQUIREMENTS OF REGIONAL COLLECTION SYSTEMS

The Solid Waste Management Act designates that counties will bear the primary responsibility for providing solid waste collection and transportation services to all residents. The three primary options for providing these services are: 1) to provide services through county operations, 2) to provide services through agreement with another unit of government, or 3) to provide services through contract with private companies.

The level of service is also established by the Solid Waste Management Act. The minimum level of service required by each county will be to provide a network of staffed convenience centers throughout the county. A higher level of service would be to provide door-to-door collection throughout the county.

At this time Hardeman County Region has a combination of solid waste collection and transportation services as described in Chapter II. In addition to the collection of solid wastes by municipal crews, a number of private collection companies operate throughout the County. The County also operates a green-box collection system in unincorporated areas.

#### B. ALTERNATIVES FOR SOLID WASTE COLLECTION AND TRANSPORTATION

The following alternatives for solid waste collection and transportation are considered to be the most feasible options for the Hardeman County Region. These options were determined after discussions with state and local solid waste administrators, private waste management companies and members of the regional solid waste board. An effort was made to integrate these options with existing solid waste management systems while also exploring other systems of collection and transportation conducive to predominately rural areas. Each option attempts to maintain the existing municipal and private collections services operating in the County. A description and summary cost estimate for each of the options is provided below. When information is available, a cost comparison of providing the services by public vs private operations is also included.

OPTION 1 - provide green-box convenience centers in conjunction with the existing green-box system for rural residents.

OPTION 2 - provide uncompacted roll-off convenience centers in conjunction with the existing green-box system for rural residents.

OPTION 3 - provide compacted roll-off convenience centers in conjunction with the existing green-box system for rural residents.

OPTION 4 - provide door-to-door collection for rural residents and eliminate the existing green-box system.

### 1. Discussion of options

#### Option 1, Option 2 and Option 3

Options 1, 2 and 3 involve the construction and operation of convenience centers. Like the existing green-box system, these centers require the resident to bring their solid waste to the facility. Unlike present green-box systems, convenience centers will have full time staffing, controlled access, security fencing, paving, lighting, and will also be conducive to waste segregation (i.e. yard waste, recyclables, tires, problem wastes, white goods, etc.) For many County residents who are already accustomed to taking their solid waste to the landfill, green-box or another collection site, convenience centers offer the same type of service with many improvements. Disadvantages include longer travel distances for some residents and limited drop-off times (typically 10-14 hours daily). Also, residents who already have a waste collection service will not be likely to use the convenience center.

The Solid Waste Management Act requires a minimum number of convenience centers based on one(1) per 180 square mile service area or one(1) per 12,000 population service area. Based on these criteria the minimum number of centers for Hardeman County is four(4) based on area and 2 based on population in unincorporated areas. A cost analysis for Option 1, Option 2 and Option 3 is shown below.

Each convenience center option involves maintaining the existing green-box system already in place in the County. This system has a budgeted cost of approximately \$140,000 per year. Based on approximately 5,000 households in the unincorporated areas, this equates to approximately \$2.33 per household per month.

## CONVENIENCE CENTER COST ANALYSIS

OPTION 1 - GREEN-BOX CONVENIENCE CENTER  
 OPTION 2 - ROLL-OFF CONVENIENCE CENTER  
 OPTION 3 - COMPACTED ROLL-OFF CONVENIENCE CENTER

<u>Item</u>	<u>Green-Box</u>	<u>Roll-Off</u>	<u>w/Comptn</u>
<b>Capital Cost</b>			
Land	\$4,000	\$4,000	\$4,000
Grading/Earthwork	10,000	13,000	13,000
Paving	30,000	35,000	35,000
Drainage Structures	3,000	3,000	6,000
Fencing and Gates	5,000	5,000	5,000
Building	8,000	8,000	8,000
Utilities	4,000	4,000	4,000
Signs and Landscaping	1,500	1,500	1,500
Engineering, Legal	7,000	8,000	8,500
<b>Total</b>	<b>\$72,500</b>	<b>\$81,500</b>	<b>\$85,000</b>
<b>Annualized Capital Cost @ 6% for 20 Years</b>	<b>\$6,320</b>	<b>\$7,105</b>	<b>\$7,410</b>
Green-Boxes	7,000	2,000	2,000
Roll-Offs	-	16,000	8,000
Compactor(1)	-	-	14,000
<b>Total</b>	<b>\$7,000</b>	<b>\$18,000</b>	<b>\$24,000</b>
<b>Annualized Capital Cost @ 6% for 5 Years</b>	<b>\$1,661</b>	<b>\$4,272</b>	<b>\$5,696</b>
<b>Annual Labor and Supply Cost</b>			
Center Staffing	\$25,000	\$25,000	\$25,000
Benefits, Etc.	5,000	5,000	5,000
Administration	4,000	4,000	4,000
Supplies, Mntnce, Etc	2,000	2,000	6,000
Utilities	1,000	1,000	4,000
<b>Annual O &amp; M</b>	<b>\$37,000</b>	<b>\$37,000</b>	<b>\$44,000</b>
<b>Average Annual Cost/Center</b>	<b>\$44,981</b>	<b>\$48,377</b>	<b>\$57,106</b>
Existing Green-Box System	\$140,000	\$140,000	\$140,000
<b>Total Regional Cost/Year</b>	<b>\$229,962</b>	<b>\$236,754</b>	<b>\$254,212</b>
<b>Cost/Household/Month*</b>	<b>\$3.83</b>	<b>\$3.95</b>	<b>\$4.24</b>

\*Based on approximately 5,000 households served by the Centers.

#### Option 4

Door-to-door collection of residential solid waste will require determination of which service provider(s) can do it for the best price. The best price not only being the cheapest but also the most effective level of service, most dependable, cleanest, etc. This Plan cannot determine which collection service provider is the best for the County or for any portion of the planning Region, but typical costs for providing these services are discussed and analyzed.

Numerous proposals, both formal and informal, for countywide door-to-door collection of residential solid waste have been made in and around west Tennessee in recent months. Some collection services were bid, some were negotiated with one hauler and other quotes were provided by private haulers for rough estimating only. The primary factors that affect door-to-door collection costs are collection frequency, collection efficiency or worker productivity, equipment, haul time and distance, population density and administrative cost. A typical proposal for collection will include the cost for disposal, thus making it somewhat difficult to determine the exact cost proposed for collection only. Other proposals include the option of collecting recyclables for solid waste reduction. The table on the following page of collection costs per household per month reflects recent bids, negotiated prices, quotes and municipal collection expenses for various entities in the west Tennessee area.

**Note:** Some of these costs may be slightly outdated or they may be the mid-point of an approximate price range given verbally or in an actual proposal. In addition, the specific factors used to establish these prices vary (i.e. collections frequencies vary, disposal sites vary, etc.). None of the prices from private waste management companies should be considered as current firm cost proposals for any solid waste management services.

**TYPICAL COLLECTION COSTS - WEST TENNESSEE AREA  
COST/HOUSEHOLD/MONTH**

<u>Collection Area</u>	<u>Proposal Type</u>	<u>Collection</u>	<u>Recycling Option*</u>	<u>Disposal</u>	<u>Total</u>
Lauderdale Co.	WMI <sup>1</sup> -Bid	\$3.43	\$1.98	\$1.76	\$7.17
Lauderdale Co.	BFI <sup>2</sup> -Bid	4.81	1.98	0.90	7.69
Lauderdale Co.	BB <sup>3</sup> -Bid	6.71	1.64	2.70	11.05
Tipton Co.	BFI-Quote	Yes	No	Yes	7.50
Haywood Co.	BFI-Quote	7.50	No	No	7.50
Haywood Co.	WMI-Prop.	5.00	2.50	No	7.50
Tipton Co.	WMI-Prop.	Yes	No	Yes	6.50
DeSoto Co. (MS)	Co.-Rate	7.50	No	No	7.50
DeSoto Co.(MS)	BFI-Negotiated	Yes	Yes	No	5.00
Somerville	BFI-Bid	4.46	No	2.52	6.98
Somerville	City-Bid	7.35	No	2.99	10.34
Covington	City-Rate	8.00	No	No	8.00
Covington	WMI-Prop.	Yes	No	Yes	7.00
Ripley	WMI-Prop.	Yes	No	Yes	6.89
H.L.T.	BFI-Quote	6.00	1.75	No	7.75
H.L.T.	WMI-Quote	6.50	No	No	6.50
<b>Average</b>		<b>\$6.11</b>	<b>\$1.97</b>	<b>\$2.17 =</b>	<b>\$10.25</b>

\*Involves a separate collection vehicle and route for the collection of recyclables.

<sup>1</sup> Waste Management Inc.

<sup>2</sup> Browning Ferris Industries

<sup>3</sup> Barker Brothers

REGIONAL COLLECTION AND TRANSPORTATION  
SUMMARY OF OPTION COSTS  
INCLUDES RESIDENTIAL WASTE ONLY

<u>Option</u>	<u>Description</u>	<u>Cost/ Household/Month</u>	<u>Total Annual System Cost</u>
Option 1 - Green-Box Conv. Centers		\$3.83	\$229,962
Option 2 - Roll-Off Conv. Centers		\$3.95	\$236,754
Option 3 - Compacted Conv. Centers		\$4.24	\$254,212
Option 4 - Door-to-Door Collection		\$5.00	\$300,000

C. PROPOSED COLLECTION AND TRANSPORTATION SYSTEM

1. System Goals and Service Area - Based on the analysis of collection and transportation options, the Hardeman County region plans to pursue Option 4, Door-to-Door Collection, to adequately serve the entire County. Although this option is slightly more costly than the other options, the level of service is considerably higher. Another benefit of the system is that the recycling potential throughout the County will be enhanced.

Should the door-to-door system prove to be too costly after formal bids are taken, then one of the three convenience center options will be implemented.

2. Implementation Schedule - A formal bid for collection services will be taken by the County prior to December 31, 1995. All unserved, unincorporated areas, any municipality and any business or industry which wishes to do so will be included in the bid. Bid documents will include several alternative bid proposals for collection services such as collection of regular garbage only, collection of regular garbage with blue bag recycling, etc. in order to select the best system for the County.

D. 10 YEAR STAFFING AND TRAINING

No additional staffing is anticipated for the proposed county-wide collection system.

E. 10-YEAR BUDGET

Based on numerous bids and proposals by private collection companies for door-to-door collection of residential solid waste in the West Tennessee area, the anticipated system cost for the County is from \$4.00 to \$6.00 per household per month. Estimating 5,000 households in the collection area, the total cost per year is approximately \$240,000 to 360,000.

#### F. 10-YEAR IMPLEMENTATION PLAN

The implementation plan for the collection and transportation system is described below. See Chapter XI for a complete implementation schedule for the Regional Plan.

August 15, 1995 - Funding sources finalized; monthly household fee for residential services

September 1, 1995 - Open bids for Regional collection

October 15, 1995 - Award contract for Regional collection; service to begin January 1, 1996

December 1, 1995 - Mail survey forms to municipalities with collection systems to obtain annual information

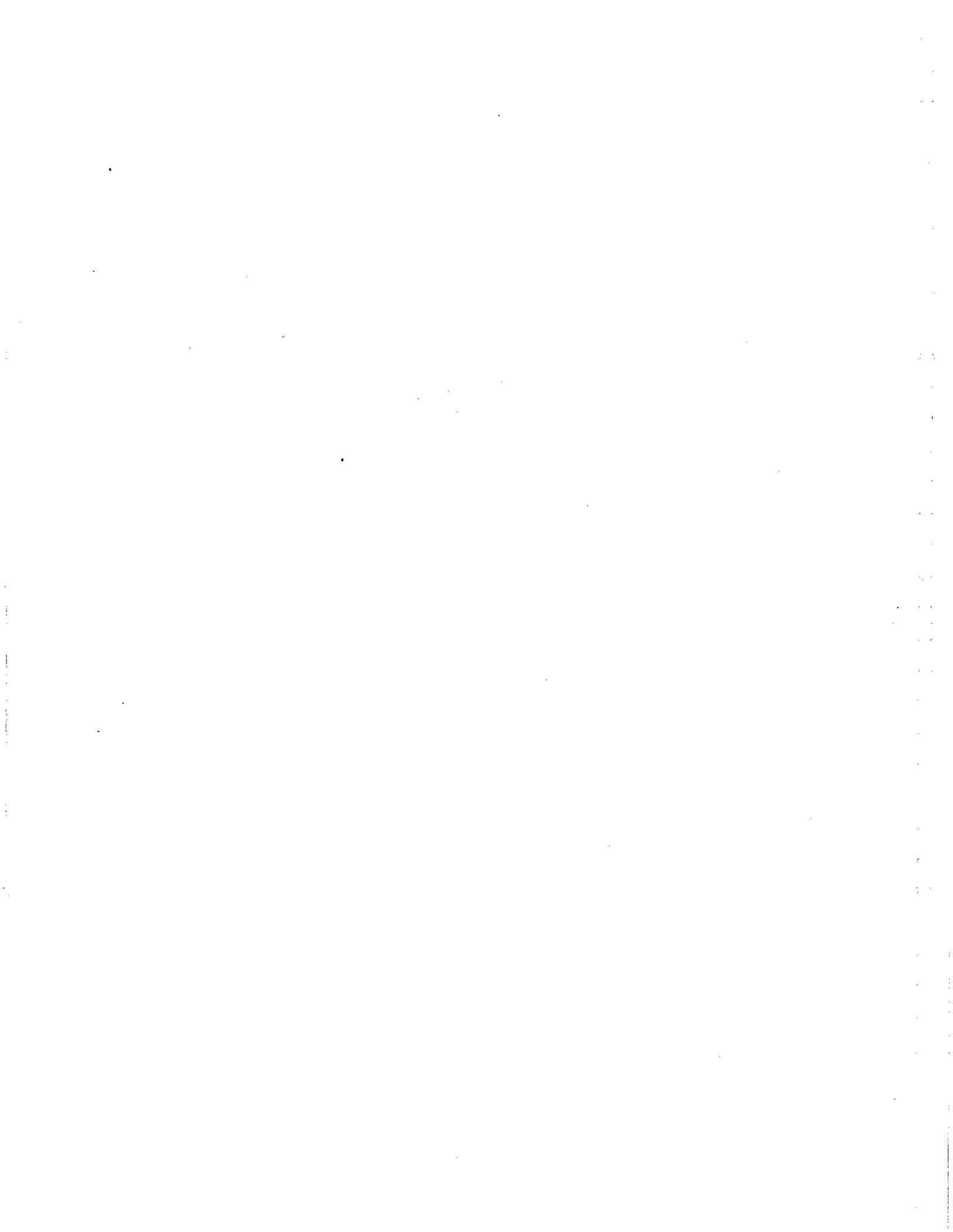
January 1, 1996 - Begin contract period for Regional door-to-door collection

January 1, 1996 - Initiate billing system for monthly residential service fee

March 1, 1995-2003 - Annual progress report due to State

#### G. COLLECTION AND TRANSPORTATION SYSTEM MAP

Existing and new elements of the regional collection and transportation system are depicted on Map No. XI-1.



## CHAPTER VI

### RECYCLING AND SOURCE REDUCTION

#### A. GENERAL

As stated in Chapter IV, the Region will attempt to reach the 25% waste reduction goal by using a combination of activities including waste diversion to a Class III/IV landfill, source reduction, and recycling. Source reduction specifically refers to efforts to reduce the quantity of solid waste before it is generated. A modified manufacturing process which eliminates or reduces the amount of waste previously produced is an example of waste reduction. Recycling refers to separating specific materials out of the overall solid waste stream in order to reuse them. This can be done at or near the point of waste generation or just prior to final disposal at the landfill. Waste diversion, as it is referred to in this Plan, pertains to the diversion of Class III/IV materials such as brush, construction debris and demolition waste from Class I landfills. Waste diversion is not included in this chapter.

#### B. REGIONAL NEEDS

The Region must accomplish two basic tasks in order to achieve the 25% reduction goal.

- 1) Determine the amount of industrial waste which was reduced by recycling and source reduction between 1985 and 1993.
- 2) Establish residential recycling programs and activities.
- 3) Establish industrial and commercial recycling programs and activities.
- 4) Establish recycling programs for government offices and institutions.
- 5) Encourage source reduction through public information and education programs.

#### C. SPECIFIC ACTIONS PLANNED

##### 1. Regional Goals

Regional goals for overall waste diversion and recycling are presented in Chapter IV. This Chapter specifically addresses waste recycling and source reduction options which will be a part of the Regional Plan. As mentioned in Chapter IV, these options are not expected to be as productive initially as waste diversion in reaching the 25% reduction goal, but the long term benefits are considered very important. They provide the best potential for greater waste reduction beyond the 25% goal.

The Regional goals are to establish recycling opportunities in each of the economic sectors mentioned above and to promote source reduction of wastes which are difficult to recycle.

## 2. Regional Strategies

**a. Residential Recycling** - As part of the county-wide house-to-house collection system to be implemented, a residential "blue-bag" recycling program will be implemented. This system requires the homeowner to separate specific recyclables and place them into a collection bag of a different color than regular household garbage. The bag is typically blue. The private contractor providing house-to-house collection will collect both regular garbage bags and these blue bags. The collection vehicle will then unload both regular bags and blue bags on a concrete pad at the landfill. Blue bags will then be pulled out and loaded into another vehicle for hauling to a recycling facility. The collection contractor will be required to provide documentation of all recycled materials which were diverted from a Class I facility. The Region will not attempt to market recycled materials from residential recycling. Marketing and selling materials will be the responsibility of the recycler.

It is anticipated that the effectiveness of this blue-bag system will start small and gradually improve as public information and education efforts become effective. Although the system will serve all county residents in unincorporated areas and municipalities included in the collection contract, it will take considerable time to change the general reluctance to household recycling. These efforts are described in Chapter IX.

**b. Drop-Off Recycling Facility** - In addition to the blue-bag system, the Region also plans to help promote the existing recycling facility at the Hardeman County Developmental Services Center. This facility was started in 1988-1989, and is an integral part of the Developmental Services Center, a non-profit organization funded by State, Federal and local sources. The facility sorts, processes, markets and hauls specific recyclables such as paper, newsprint, cardboard, aluminum, food cans, glass and plastics. Processing equipment includes two vertical balers, one glass crusher and one can compactor. Recyclables from small businesses, industries and individual homeowners are accepted at the facility, however the primary source of materials at this time is from the Bolivar curbside recycling program and two local industries. Reports which document the marketed materials are submitted to the State on a quarterly basis and will be included in the annual Plan updates. The facility is staffed during operating hours, 8:00 AM to 4:00 PM weekdays.

Five satellite drop-off locations for recyclables are also established in the Bolivar area. These sites are not staffed and include bins for specific materials which are periodically hauled to the recycling facility for processing.

c. Commercial and Industrial Recycling - Efforts to encourage and assist businesses and industries in waste recovery, reuse and recycling are addressed in Chapter IX. As stated in previous chapters, some solid waste information from industries in the Region has been accumulated as of March, 1994. This information is presented in Table II-2A. It is obvious from the data that many industries have the potential to recycle and reduce waste generation, although few are realizing that potential. Based on information presented in the District Needs Assessment, it is also obvious that some industries have reduced large tonnages of solid waste since 1985. These should be accounted for by the Region and credited toward the 25% reduction goal. Annual Plan updates will include additional information as it becomes available.

### 3. Staffing

No additional staffing is needed for the recycling and source reduction programs. Residential "blue-bag" recycling will be staffed by the private collection contractor and the staff already in place at the Developmental Services Center recycling facility discussed above. Other residential, industrial, commercial, governmental and institutional programs will be initiated by existing County Public Works staff or by volunteers, civic organizations, County Agricultural Extension Office personnel, etc.

### 4. 10 - Year Budget

The majority of the budget for the programs discussed in this chapter is included in Chapter V. Additional funds needed for public information and education are included in Chapter IX.

### 5. Funding

See Chapters V and IX.

### 6. Collection and Submitting Data

As stated previously, records will be kept by the collection contractor and by the recycling facility of all incoming materials, marketed materials and outgoing wastes. This data will be submitted annually to the State as required for Plan updates and progress reports. The Region will continue to obtain data from local businesses and industries via mail and direct phone contact. Governmental agencies and institutions will also be contacted directly on an annual basis (minimum) to obtain recycling data.

### 7. Implementation Schedule

See Chapters V and IX.

## 8. Allocation of Responsibilities

The Hardeman County Solid Waste Planning Region is responsible for all recycling and source reduction programs described herein. Individual municipalities providing separate collection and transportation services are responsible for developing, implementing, documenting and reporting recycling activities to the Regional Board on an annual basis for State reporting purposes. The Region is responsible for collecting and reporting recycling and source reduction information documented by private waste generators (i.e. businesses, industries, etc.).

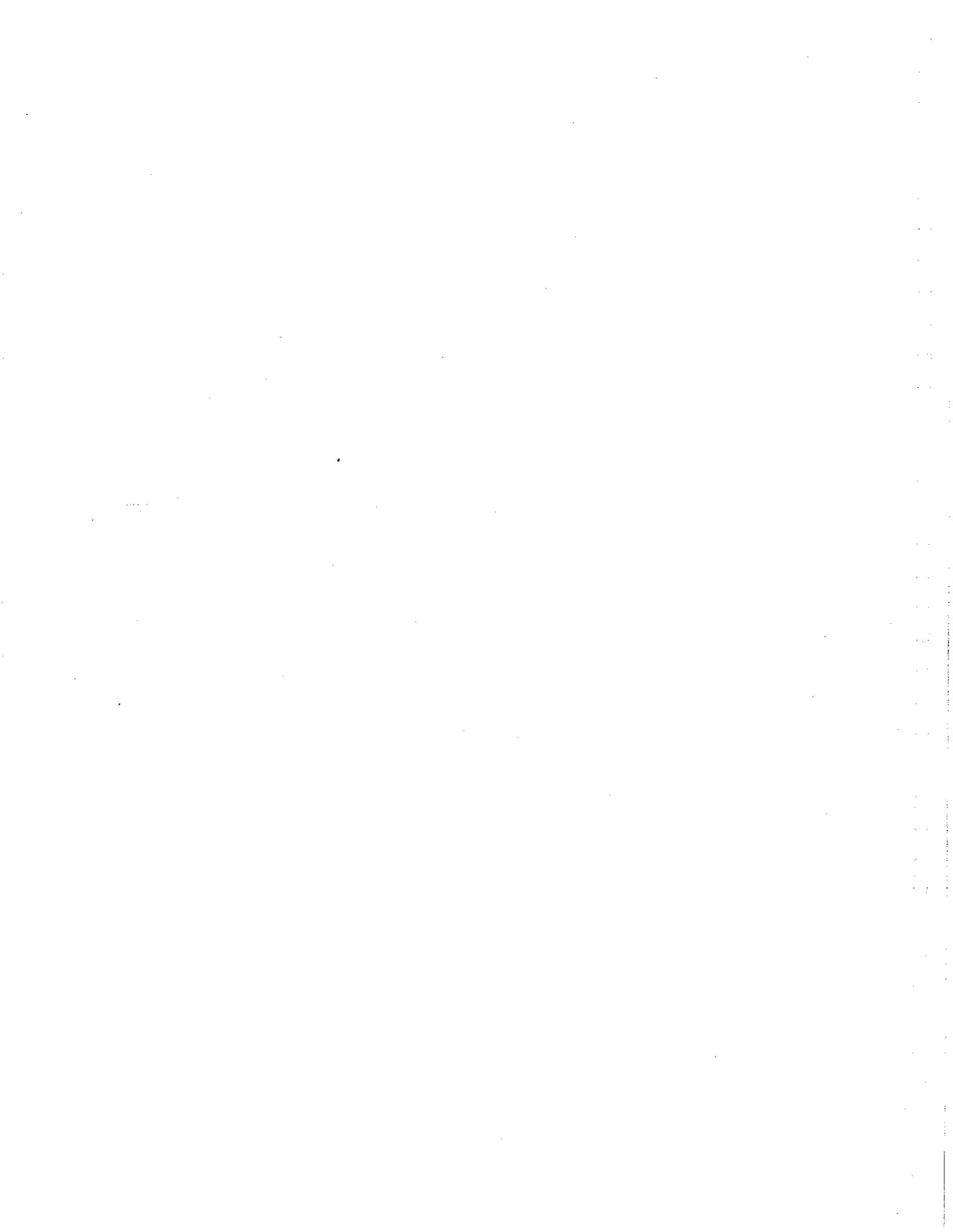
CHAPTER VII  
COMPOSTING, SOLID WASTE PROCESSING,  
WASTE-TO-ENERGY AND  
INCINERATION CAPACITY

A. REGIONAL NEEDS FOR COMPOSTING, WASTE-TO-ENERGY AND  
INCINERATION

The majority of all waste processing, waste-to-energy and incineration processes require larger amounts of solid waste than are presently available in the Hardeman County Region to make them feasible and beneficial. In addition, many processes are very difficult to permit and operate in an environmentally acceptable manner. The most feasible options for waste processing include composting of leaves and chipping of tree limbs to produce mulch. These are potentially easy operations which could count toward the 25% reduction goal, however, the overall reduction in tonnage from diverting these materials from Class I landfills is normally small.

Only the City of Bolivar is engaged in any solid waste processing operations. Leaves from curbside residential pick-up are composted and given away free of charge to City residents. In addition, the City has a chipper to process limbs into mulch which is also given away free of charge to City residents. The waste quantities involved in these operations are not being quantified at this time, but weighing will begin during 1995 in order to receive credit toward the 25% waste reduction goal.

The Region does not plan to incorporate any other waste processing options into the Regional Plan. Any municipal or private waste processing operations such as those discussed above which affect the Regional Plan will be reported annually in Plan updates.



## CHAPTER VIII

### DISPOSAL CAPACITY

#### A. GENERAL DISCUSSION

##### 1. Class I Landfills

The State - Solid Waste Management Act along with the Federal - Subtitle D Landfill Regulations have significantly altered the way local communities view solid waste disposal. The siting, design, development, operation, closure and post-closure of solid waste landfills are all very technical and expensive. It is certain that the Hardeman County Region will need access to a Class I Landfill for disposal of the vast majority of its solid waste regardless of the how effective its reduction/recycling programs may become. In addition, there is a great need for access to a Class III/IV Landfill facility for disposal of landscaping and land clearing waste, construction/demolition waste and other similar types of waste. Diversion of these types of waste from Class I facilities will be credited toward the 25% waste reduction goal.

At this time, the region has two primary alternatives for long term Class I disposal - 1) continued operation of its existing Class I landfill, or 2) contract with a privately owned landfill for disposal. The most accessible private landfill facilities are either of the two BFI sites located in Shelby County, Tennessee, the Waste Management facility near Houston, Mississippi, the Waste Management facility in Benton County, Tennessee or the Barker Brothers facility in Obion County, Tennessee. As stated previously, the existing Bolivar/Hardeman County landfill was recently expanded by permitting an additional 18 acres with approximately 15 years of solid waste capacity. With this additional permitted space and considering other factors such as flow control, haul costs, etc., the Region intends to continue with the operation of its Class I landfill.

##### 2. CLASS III/IV LANDFILLS

While the existing Class I landfill continues to operate, it is recommended that the Region permit and develop a Class III/IV landfill for brush, construction debris, demolition waste, etc. The cost for development, operation, closure and post-closure of Class III/IV landfills is significantly lower than Class I landfills. The waste disposed of in these facilities will also be credited toward the 25% solid waste reduction goal. The detailed costs associated with a regional Class III/IV landfill are provided below.

**CLASS III/IV LANDFILL COST ESTIMATES**

**Design Assumptions:**

Annual Tonnage\* = 5,000  
 \* Roughly Estimated to be 17% of Total Waste Stream (+/-)  
 Minimum Site Life = 20 years  
 In-place waste compaction = 1,000 lbs/CY  
 Volume of daily/intermediate cover = 1 % of total airspace  
 Average landfill waste depth = 40 feet  
 Average landfill excavation depth = 20 feet

Landfill Acreage            5  
 Total Acreage                10

**PRE-CONSTRUCTION AND CONSTRUCTION COSTS - CLASS III/IV FACILITY**

<u>Item Description</u>	<u>Unit Cost</u>	<u>Total Cost</u>
Site Characterization	\$        0 LS	\$        0
Engineering/Design	5,000 LS	5,000
Legal	3,000 LS	3,000
Land Purchase @ \$2,500/AC	0 LS	0
Clearing, Grubbing & Access Rds	2,000/AC	20,000
Excavation	2,000/AC-FT	200,000
Clay Liner (2 FT = 17,000 CY +/-)	0	0
Scales/Fencing	0 LS	0
Buildings	0 LS	0
Drainage/Sedimentation Ponds	400/AC	4,000
Utilities	0	0
Gas Management Systems	1,000/AC	5,000
Groundwater Monitoring Wells(3)	4,000 EA	12,000
CQA	2,000/AC	<u>10,000</u>
 TOTAL (1993 DOLLARS)		\$    249,000
ANNUAL COST @ 6% FOR 20 YEARS		\$     21,708

**OPERATION COSTS - REGIONAL FACILITY**

Labor (3 @ \$25,000 EA x 1.2)	\$ 90,000/YR
Equipment (\$2/Ton of of Waste)	10,000/YR
Daily Cover (\$.25/Ton of Waste)	1,250/YR
Environmental Monitoring (\$1000/AC)	<u>5,000/YR</u>
 ANNUAL COST (1993 DOLLARS)	\$106,250/YR

**CLASS III/IV LANDFILL COST ESTIMATES (cont.)**

**CLOSURE COSTS - REGIONAL FACILITY**

Clay Cap (2 FT = 17,000 CY/AC +/-)	5/CY	85,000
Topsoil (1 FT = 8,500 CY/AC +/-)	2/CY	17,000
Seeding	1,000/AC	5,000
Sedimentation Control	200/AC	1,000
CQA	1,000/AC	<u>5,000</u>
TOTAL (1993 DOLLARS)		\$ 113,000
ANNUAL COST @ 6% FOR 20 YEARS)		\$ 9,851

**POST CLOSURE - REGIONAL FACILITY**

Routine Maintenance	\$200/AC-YR	\$ 1,000/YR
Annual Inspections/Reports	1,000/YR	1,000/YR
Gas Control	2,500/YR	2,500/YR
Environmental Monitoring(\$1000/AC-YR)		<u>5,000/YR</u>
ANNUAL COST (1993 DOLLARS)		\$ 9,500/YR

**SUMMARY (COST PER YEAR IN 1993 DOLLARS) - REGIONAL FACILITY**

Pre-Construction/Construction	\$	21,708/YR
Operation		106,250/YR
Closure		9,851/YR
Post Closure		<u>9,500/YR</u>
TOTAL ANNUAL COST	\$	147,309/YR

COST PER TON = \$147,309/YR x 1 YR/5,000 TONS = \$29.46/TON  
 COST PER CY = \$29.46/TON x 0.25 TONS/CY = \$7.36/CY

## B. DEMAND VS. SUPPLY OF DISPOSAL CAPACITY

As stated previously, the existing Bolivar/Hardeman County landfill has a minimum of 15 years remaining capacity. The existing and remaining capacity for the 10 year planning period is provided in Table II-11 without accounting for future solid waste reduction and waste diversion to the proposed Class III/IV landfill. These activities will increase the life expectancy of the Class I landfill.

## C. PROTECTING EXCESS CAPACITY

Only solid waste from the Hardeman County Solid Waste Planning Region is accepted at the Bolivar/Hardeman County Landfill. This practice will continue through the 10 year planning period, although a formal flow control regulation or local ordinance is not recommended at this time. Should flow control become a major factor in the operation of the existing Class I landfill or proposed Class III/IV landfill, regulations to establish flow control will be implemented.

## D. FUNDING

Funding for the existing Class I landfill costs and for the proposed Class III/IV landfill costs will be derived through user fees and tipping fees at the gate. The Class I landfill disposal cost is currently \$6.00 per household per month for every household in the County and approximately \$20.00 to \$25.00 per ton for commercial/industrial waste. The proposed Regional Class III/IV landfill will cost approximately \$1.00 per household per month for all County households and approximately \$7.00 to \$8.00 per cubic yard for commercial/industrial users. The user fee system is discussed in more detail in Chapter XI.

## E. IMPLEMENTATION SCHEDULE

The implementation plan for the Class I and Class III/IV disposal system is outlined below. A complete implementation schedule for the Regional Plan is provided in Chapter XI.

August 1, 1994 - Begin permitting process for the Class III/IV landfill

January 1, 1995 - Submit full set of permitting documents to State for Class III/IV landfill approval

May 1, 1995 - Pending approval of Class III/IV landfill permit, begin development of Class III/IV landfill

January 1, 1996 - Begin operating Class III/IV landfill; add Class III/IV landfill user fee to monthly household disposal fee; initiate tipping fee at Class III/IV landfill

March 1, 1995-2003 - Annual progress report due to State

## CHAPTER IX

### PUBLIC INFORMATION AND EDUCATION

#### A. REGIONAL NEEDS FOR INFORMATION AND EDUCATION

The Hardeman County planning region, like all other planning regions in the State, will need to develop additional public information and education programs regarding solid waste issues, options, costs and goals. The Hardeman County information and education programs will need to address general solid waste issues and also focus on the specific plan adopted by the Region. Separate programs will be needed for the general public, businesses, industries, schools, government offices and other entities which are critical to the solid waste Plan.

#### B. SPECIFIC PLANS FOR INFORMING AND EDUCATING

##### 1. Regional Goals and Objectives

The primary goals of the information and education programs are as follows:

- 1) educate the general public about what solid waste is and why it is important to the County and to them personally,
- 2) inform the general public, businesses, industries, etc. about the specific components of the solid waste management plan and how the Plan affects them personally, and
- 3) strongly encourage the support and participation of all individuals and entities in the County to make the Plan a success.

##### 2. Target Groups and Audiences

As stated above the Region plans to provide solid waste information and education to the general public, businesses, industries, schools, and government entities. To accomplish this goal the Region will utilize existing government organizations and staff, public service groups, educators and volunteers to help reach as many target groups and audiences as possible. These include the University of Tennessee Center for Industrial Services, County Technical Assistance Service, Municipal Technical Assistance Service, the County Extension Office, local solid waste board members and public works staff, and selected school officials and teachers. Some of the target groups and audiences for solid waste information and education are as follows:

General Public - civic clubs, garden clubs, customers at retail centers, recycling facility users, local radio station listeners, local newspaper readers, etc.

Businesses and Industries - Chamber of Commerce and associated groups, specific businesses and industries which generate large amounts of solid waste, local business districts, industrial parks, etc.

Schools - local public and private schools

Government Entities - local county and municipal government offices and facilities

### 3. Information to be Provided

As much as possible the Region will utilize existing solid waste information and education material developed by or accessible through the State of Tennessee Division of Solid Waste Assistance or other agencies. Materials include printed literature, videos, etc. which could be used for local solid waste spokesman training or provided directly to the target audience for their use.

### 4. Methods to be Utilized

The specific methods to be utilized to reach target audiences are being formulated at this time. Some of the methods to be employed are as follows:

#### General Public -

\* A speaker's bureau will be developed by the Regional Solid Waste Board. This bureau will actively seek an audience with local civic organizations. The goal will be to speak at least one time per year to any organization which may have direct or indirect influence on solid waste practices throughout the Region.

\* The Regional Solid Waste Board will provide informational material to the local radio station(s) and newspaper(s) on a regular basis. This information will be presented in a series of presentations and will cover all aspects of the Regional Plan. Annual updates to the material will be necessary in order to address any planned and/or approved modifications to the Plan. In addition, any dates for specific events such Household Hazardous Waste collection days, waste tire shredding, etc. will be announced through these media.

\* The Regional Solid Waste Board will spearhead efforts to develop public exhibits and/or demonstrations at locations where large numbers of local residents are likely to be present. These locations include retail centers, the County Courthouse, city halls, schools, recycling facility or any other local event such as fairs, rodeos, festivals, etc. The exhibit may be semi-permanent and remain in one location for longer periods of time or be portable and move from location to location as the need arises. One day exhibits/demonstrations will be staffed by a local volunteer from the Board or another individual knowledgeable of the Regional Plan and pertinent solid waste issues.

#### **Businesses and Industries -**

\* An industrial solid waste reduction workshop developed by the University of Tennessee Center for Industrial Services (UTCIS) will be scheduled for the summer of 1994. This workshop will include any interested local industry and is intended to assist in source reduction efforts and data gathering from industry.

\* The Chamber of Commerce will be used as a venue for contacting and addressing local businesses and industries. The speaker's bureau described above will actively seek to address business and industrial groups through the Chamber at least one time per year.

\* Local industry will be contacted at least one time per year and asked to complete a survey questionnaire about solid waste management, recycling, source reduction, etc. Direct phone contact may be required if response to the surveys is not sufficient. Any significant changes in solid waste generation and/or management from existing industry will become a part of the annual Plan updates. All information from specific businesses and industries in the Region will be strictly confidential unless prior permission is obtained from that industry.

\* The Regional Solid Waste Board will spearhead efforts to establish local solid waste reduction "districts" for small businesses. These districts will be geographic areas where several small businesses are in close proximity to each other. A "lead" business in each district will be designated to help with solid waste management efforts. Information and education about the Plan and other solid waste issues can be presented to these districts through that lead business rather than to individual businesses. Small business programs may include county-wide district competitions for solid waste reduction, solid waste exhibits, etc. in which the winning district receives notariety in local newspapers and/or radio.

#### **Schools -**

\* The speaker's bureau mentioned above will seek audiences with all local public and private school children at least one time per year.

\* In-service training for classroom teachers regarding solid waste issues will be encouraged. The Solid Waste Board will provide local educators with a list of information and materials available from the TDEC which may be helpful in developing solid waste curriculum. The Board will assist an advisory committee of local educators to choose the best available literature, videos, etc. to adequately inform children of all ages.

\* Schools will be invited to schedule field trips to the landfill, recycling center or any other solid waste management facility.

\* Schools will be encouraged to reduce their individual waste streams and to report reduction quantities to the Regional Board. All schools in the Region will be provided with information about potential solid waste reduction activities.

#### Local Government -

\* The Solid Waste Board will spearhead efforts to form government office paper recycling programs. Other materials which local government facilities generate in large quantities will also be addressed.

### 5. Staff and Budget Needs

The Region does not plan to add additional staff for the public information and education component of the Plan. Existing County and municipal staff, board members, and volunteers will be called upon to support and contribute to the needs in these areas. The Regional budget for information and education will be relatively small compared to the overall management system. The primary costs will be associated with advertising, promotion, specific programs (i.e. Chamber meetings) and purchasing materials. It is anticipated that these costs will not exceed \$20,000 per year.

### 6. Funding Plan

Funding for public information and education programs will come from an additional user fee of approximately \$0.20 per household per month for all County residents.

### 7. Evaluation and Reporting

As part of the annual updates required for the Plan, the Region will compile a list of all public information and education activities during the previous year. Where possible, an evaluation will be made of the effectiveness of a particular program (i.e. household hazardous collection events, waste tire shredding, industrial waste reduction workshops, etc.)

## C. IMPLEMENTATION SCHEDULE

August 1, 1994 - Identify key Regional Board members, County and municipal staff and community volunteers to assist in implementation of the public information and education activities. Also, establish an Educational Advisory Committee to specifically address the school related components of the Plan.

September 1, 1994 - Begin a series of newspaper articles describing various aspects of the Regional Plan and how the Region will be affected.

October 1, 1994 - Meeting of key individuals and Educational Advisory Committee members described above to begin developing a formal plan of various public information and education efforts.

March 1, 1995-2003 - Annual progress report due to State

January and July, 1996-2003 - Semi annual meeting of key individuals and Educational Advisory Committee members to discuss and evaluate existing programs and continue development of new programs.



## CHAPTER X

### PROBLEM WASTES

#### A. GENERAL

The Solid Waste Management Act of 1991 requires specific information for four problem wastes: 1) household hazardous waste, 2) waste tires, 3) waste oils, and 4) lead acid batteries. A minor amount of information is required for litter control and other wastes which may be of particular concern to the Region (i.e. infectious wastes, white goods, abandoned cars, pallets, etc.)

#### B. HOUSEHOLD HAZARDOUS WASTE (HHW)

##### 1. Regional Needs

It is expected that households in the Hardeman County Solid Waste Planning Region generate a fairly typical amount of HHW. In the past these wastes were allowed into Class I landfill facilities for final disposal, however the goal of the Solid Waste Act of 1991 is to dispose of these materials in a more suitable manner. There is growing concern that Class I landfills do not adequately protect the environment from releases of HHW materials.

Household wastes can generally be classified as hazardous if they are flammable, corrosive, reactive or toxic. A partial list of common household materials typically classified as hazardous is provided below.

##### I. Household Cleaners

Drain Openers, Oven Cleaners, Wood and Metal Cleaners  
Polishers, Toilet Bowl Cleaners, and Disinfectants

##### II. Automotive Products

Oil and Fuel Additives, Grease and Rust Solvents,  
Carburetor and Fuel Injector Cleaners, Air Conditioning  
Refrigerants, Starter Fluids, Body Putty, Anti-Freeze/Coolant,  
Waste Oil

##### III. Home Maintenance and Improvement Products

Paint Thinner, Paint Strippers and Removers, Adhesives,  
Paint

##### IV. Lawn and Garden Products

Herbicides, Pesticides/Rodenticides, Fungicides/Wood  
Preservatives

##### V. Miscellaneous

Batteries, Fingernail Polish Remover, Pool Chemicals,  
Photo Processing Chemicals, Medicines/Drugs, Reactives (aerosols/  
compressed gas)

## 2. Regional Plan

a. **Regional Goals** - The Regional goals for HHW management are as follows:

1. To the maximum extent practicle, divert HHW from the Bolivar/Hardeman County Class I landfill and other Class I landfills which may serve the County.

2. To provide a temporary facility for collecting, sorting and packaging HHW materials. The facility will be used in conjunction with the State approved HHW collection contractor during State-sponsored collection events.

3. To educate the public about HHW materials, collection facilities, "safe" substitutes, etc.

b. **HHW Collection Site** - The Hardeman County Region will develop a facility for collecting, sorting and packaging HHW materials on the property which currently serves as the County Class I landfill. The HHW storage area will be located near the entrance to the existing landfill. An existing paved area of suitable size will be roped off for collecting, sorting and packaging operations. Other site criteria as described in the TDEC publication "County Responsibilities, Household Hazardous Waste Collection Events in Tennessee; Policy Guide; August 1993" will also be implemented.

c. **Information and Education** - The Region plans to incorporate information and brochures already available through the TDEC Division of Solid Waste Assistance into its public information and educational efforts. Local newspapers, radio stations, schools and service organizations will be the primary sources for distributing information about HHW and specific collection events. A minimum of two(2) months of notice will be given to the general public prior to a HHW collection event. During these two months, public information will be provided on a regular basis, at least weakly, in order to adequately promote the event. See Chapter IX for additional information on public information and education.

d. **Coordination With State Collection Efforts** - As mandated by the 1991 Act, the State will provide periodic services for collection of HHW materials from each planning region. The Hardeman County Region will coordinate its facilities, planning and personnel to make maximum usage of the State collection program. Once a collection day is established, the Region will assume a support role for the State's collection contractor. Any responsibilities not a part of the contractor's duties such as notification of local emergency agencies, providing additional site security, providing additional site safety precautions, etc. will be handled by the Region. The Region will coordinate its record keeping with the State contractor's records in order to properly document the collection activities. These records will be filed with the State as required by the Act.

e. **Staff and Training** - No additional staffing is anticipated for the HHW program. The Region will utilize its present staff to coordinate the collection events, assist during the collection activities and complete any record keeping and State documentation. The County or local municipality will designate one(1) of its personnel to manage the program and one(1) other to assist in its implementation. Additional volunteers will be requested to assist during the collection event.

f. **Estimated Costs** - Costs associated with the HHW collection program as it is planned to operate are very small compared to other solid waste management costs. The majority of the facility and staffing costs are already in place at this time. Estimated costs for the HHW program provided below are based on staging two(2) collection events per year. The HHW program will be funded through the \$6.00 per household per month user fee already in place throughout the County.

<u>Description</u>	<u>Estimated Cost/Yr</u>
Collection Event Staffing	\$1,400.00
Public Information/Education	1,000.00
Facility Preparation Costs	400.00
Recording Keeping/Documentation	200.00
	<u>\$3,000.00</u>

3. **Implementation Schedule** - Pending the establishment of a scheduled date with the State's collection contractor, the Region plans to hold one HHW collection event during the early summer of 1995. A collection event will be held during the same period of the ensuing years of the State sponsored HHW collection program. Pending the success of the program and the availability of the State collection contractor, two collection events may be scheduled each year.

C. WASTE TIRES

1. Current Waste Tire Program

a. **Permitted Tire Storage Site** - A tire storage facility is already in place at the Bolivar/Hardeman County Class I landfill. A State grant of \$5,000 was received to help construct the facility which is capable of storing approximately 6,000 tires. The rectangular storage area is approximately 48 feet long and 32 feet wide with an earthen berm completely surrounding the area. A layer of gravel covers the site. The facility is constructed with a tin roof supported by wood poles. A wire fence attached to the poles completely surrounds the facility allowing tires to be stacked approximately 14 feet high.

b. **Tire Shredding Operations** - Tire shredding is scheduled two(2) times per year, and the State contracted tire shredder provides the service at the storage area.

d. Ultimate Use/Disposal of Shredded Tires - At this time the shredded tires are used to aid in erosion control at the Class I landfill. In the future, shredded tires can be used in a similar fashion at the planned Class III/IV landfill.

e. Operating Costs - The operating costs for the tire storage area, shredding, final use/disposal, and record keeping are considered incidental costs to the Region. This program is already being funded through the County-wide \$6.00 per household per month user fee.

## 2. Current Tire Generation and Processing Rates

Based on the amount of pre-disposal fees paid to the State of Tennessee Department of Revenue for the period from July 1, 1992 through June 30, 1993, approximately 12,697 tires were sold in Hardeman County. Studies indicate that the typical tire discard rate is approximately 0.7 tires/person/year. For Hardeman County this generation rate would equate to approximately 16,252 tires per year. It is obvious that a large number of tires used in the County are purchased outside the County. It is also believed that the County generates less than the "typical" amount of waste tires per year. Based on this and the fact that more and more tire retailers are accepting used tires when new tires are sold, the existing tire storage and processing operation is believed to be adequate for the Region at this time. Shredding operations conducted twice per year can easily handle all accumulated tires.

## 3. Illegal Waste Tire Inventory

As a part of normal operations, the Region will continue to deal with illegal waste tire piles as their locations become known. The normal procedure when a tire pile is identified is to notify the land owner and request that all tires be removed by a specified date. If the request is denied, a second notice is sent insisting that all tires be removed immediately or face possible legal action. Legal action could include civil penalties or property seizure as allowed by local, state and federal law.

## D. WASTE OIL

### 1. Current Waste Oil Management

The Sasser Oil Company, Inc. of Bolivar, an Exxon distributor, accepts used automotive oil from any resident in Hardeman County. At this time there are no publically operated waste oil management programs in Region.

### 2. Planned Regional Collection

Due to the presence and service of the Sasser Oil Company mentioned above, there are no planned Regional collection facilities for used oil. Should this company stop accepting used oil from any portion of the Region, a Regional collection facility will be established at the existing Class I landfill site.

#### E. LEAD ACID BATTERIES

##### 1. Current Battery Management

Battery retailers in the Region commonly accept used batteries when new batteries are sold. As this practice grows, the Region expects the need for a public facility to collect used batteries to be very small.

##### 3. Planned Regional Collection Site

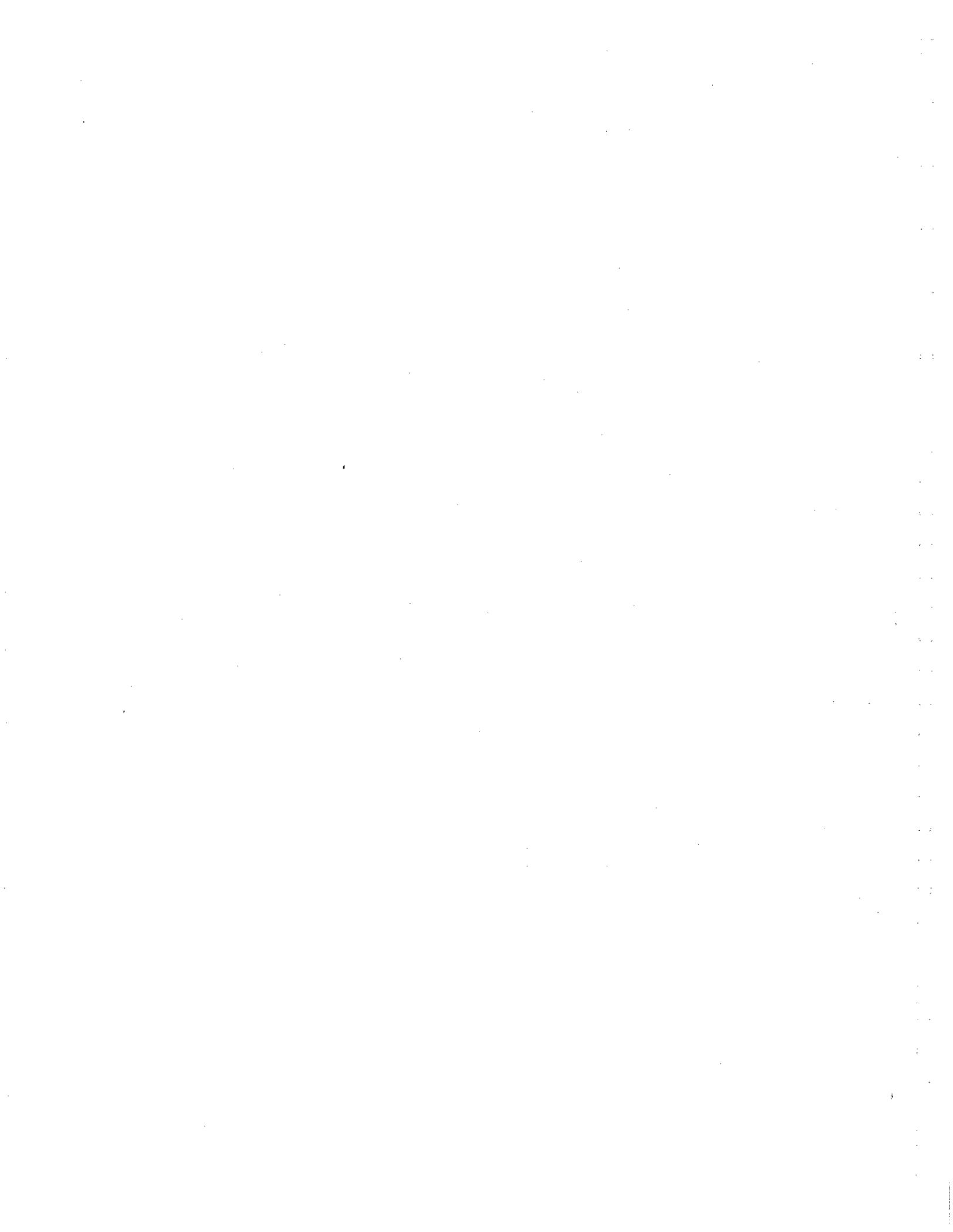
Used batteries will be accepted at the entrance to the Class I landfill. As batteries are accumulated, they will be taken to a battery retailer for proper disposal or processing.

#### F. LITTER CONTROL EFFORTS

Existing litter control programs in the County will continue to operate under the County's direction. Any information that relates to solid waste reduction, recycling or problem wastes will be reported to the Regional Board on an annual basis. The Region will report any pertinent information to the State in annual Plan updates.

#### G. INFECTIOUS WASTE AND OTHER PROBLEM WASTES

The Region does not recognize any problems with infectious wastes or other wastes such white goods, abandoned cars, etc. at this time. If any such specific waste should become a particular problem or concern in the future, the Region will adopt a management plan to address the situation. This section of the Plan will then be revised to include that management plan.



## CHAPTER XI

### IMPLEMENTATION:

#### SCHEDULE, STAFFING AND FUNDING

##### A. SYSTEM DEFINITION

###### 1. Components of the System

The Regional Plan for solid waste management includes collection and transportation, waste diversion, recycling, source reduction, Class I disposal, Class III/IV disposal, public information and education and problem waste management. All of the system components will be integrated together, but the overall success of the Plan will depend largely on public information and education. Key elements of the Plan along with Regional goals or objectives are described below.

**Collection and transportation** - The Regional goal is to provide door-to-door solid waste collection for every resident in the Region. This goal will be accomplished by establishing a Regional contract with a private collection company to collect solid waste from every resident in the Region. Businesses and municipalities will be included in the system if they so desire, however municipalities with existing solid waste collection systems are not required to participate. The private contractor will be required to transport all solid waste from the Region to the existing Bolivar/Hardeman County Class I landfill.

If bids for county-wide door-to-door collection are not reasonable, the Region will adopt a convenience center system. Two convenience centers will be located in strategic locations for optimum usage, and the existing green-box drop off bins in rural areas will continue to be used.

**Waste reduction** - The Regional goal is to reduce the per capita amount of solid waste presently being generated as much as possible. The State's target reduction of 25% based on 1989 rates will be used for Planning purposes, however every effort will be made to meet and exceed this target. Specific components of the reduction plan include solid waste diversion from the Class I landfill to a proposed Class III/IV landfill and residential, commercial, industrial, governmental and institutional recycling and source reduction. The Regional door-to-door collection system will be the key component for efforts to encourage residential recycling.

**Waste Disposal** - Both Class I and Class III/IV landfills are included in the Plan. Class I disposal will continue to be provided by the Bolivar/Hardeman County Landfill which has in excess of 15 years capacity. In addition to the Class I facility, the Region plans to permit a Class III/IV landfill for brush, construction debris and demolition waste. This facility will be located adjacent to the Class I facility.

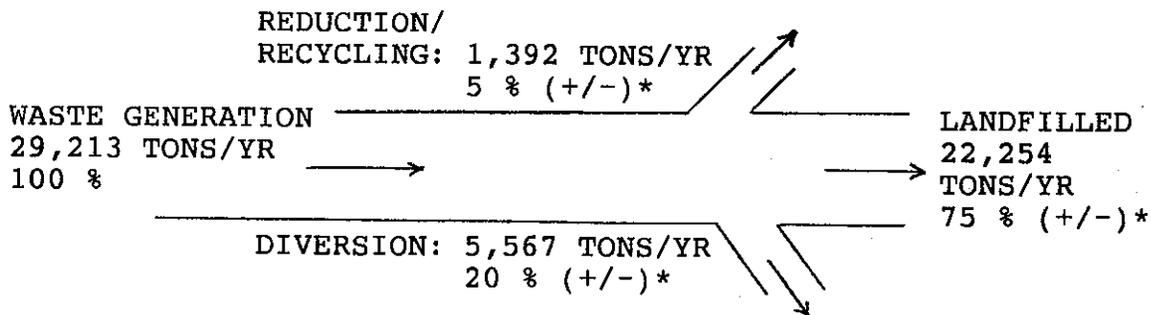
**Public Information and Education** - The Region considers this component of the Plan to be very critical to the overall success of the Plan. The Regional goal is to adequately inform and educate as many audiences as possible about the Regional Plan and how it affects them personally. Programs which encourage participation will be emphasized. Success will be based largely on the participation in residential and commercial recycling, household hazardous waste collection events, problem waste collection and Class III/IV material diversion from the Class I facility.

**Problem Waste Management** - The Region plan is to allow and encourage as much private management of problem wastes such as used oil and batteries as possible. The Sasser Oil Company of Bolivar has agreed to accept used oil from any County resident. The Region does not intend on establishing any used oil collection facilities as long as this service is provided to all County residents. Used batteries are commonly accepted by local retailers when new batteries are purchased. Used batteries will be accepted and temporarily stored at the entrance to the Class I landfill, however residents will be encouraged to take them to private retailers. Used tires will continue to be accepted at the tire storage facility located at the Class I landfill. Household hazardous wastes will be collected on an annual or semi-annual basis by the the State contracted HHW collection company.

2. Proportional Solid Waste Flow Diagram

An illustration of the most probable proportional solid waste flow resulting from the Regional Plan is shown below along with a table of estimated quantities for the Planning period.

PROPORTIONAL SOLID WASTE FLOW DIAGRAM, 1996



\*Percentages are rounded to equal 25% total reduction; generation estimates and reduction goals are calculated based on different base data; base year will be modified in Plan updates

PROJECTED QUANTITIES OF SOLID WASTE TO BE MANAGED, TONS

<u>Year</u>	<u>Projected Generation*</u>	<u>Source Reduction/ Recycling</u>	<u>Diverted</u>	<u>Landfilled</u>
1994	29,277	280	1,118	27,879
1995	29,245	837	3,348	25,060
1996	29,213	1,392	5,567	22,254
1997	29,181	1,389	5,554	22,238
1998	29,152	1,385	5,542	22,225
1999	29,124	1,382	5,529	22,213
2000	29,098	1,379	5,517	22,202
2001	29,044	1,375	5,498	22,171
2002	28,992	1,370	5,481	22,141
2003	28,942	1,366	5,463	22,113

\*Per Table III-3

B. IMPLEMENTATION SCHEDULE

The implementation schedule for the Regional Plan is described below.

August 1, 1994 - Identify key Regional Board members, County and municipal staff and community volunteers to assist in implementation of the public information and education activities. Also, establish an Educational Advisory Committee to specifically address the school related components of the Plan.

August 1, 1994 - Begin permitting process for the Class III/IV landfill

September 1, 1994 - Begin a series of newspaper articles describing various aspects of the Regional Plan and how the Region will be affected.

October 1, 1994 - Meeting of key individuals and Educational Advisory Committee members described above to begin developing a formal plan of various public information and education efforts.

January 1, 1995 - Submit full set of permitting documents to State for Class III/IV landfill approval

May 1, 1995 - Pending approval of Class III/IV landfill permit, begin development of Class III/IV landfill

August 15, 1995 - Funding sources finalized; monthly household fee for residential services

September 1, 1995 - Open bids for Regional collection

October 15, 1995 - Award contract for Regional collection; service to begin January 1, 1996

December 1, 1995 - Mail survey forms to municipalities with collection systems to obtain annual information about waste generation, waste reduction, etc.

January 1, 1996 - Begin contract period for Regional door-to-door collection

January 1, 1996 - Begin operating Class III/IV landfill

January 1, 1996 - Add Class III/IV landfill user fee and door-to-door collection fee to monthly household disposal fee; initiate tipping fee at Class III/IV landfill

March 1, 1995-2003 - Annual progress report due to State

January and July, 1996-2003 - Semi annual meeting of key individuals and Educational Advisory Committee members to discuss and evaluate existing programs and continue development of new programs.

#### C. STAFFING AND TRAINING REQUIREMENTS

**Collection: Door-to-Door** - The private collection contractor will be responsible for all staffing and training. Documentation of all training will be provided to the Region by the contractor.

The separation of residential "blue-bags" for recycling will be staffed by employees of the Hardeman County Developmental Services Center. All necessary training requirements will be the responsibility of the Developmental Services Center. Documentation of all training will be provided to the State.

**Disposal:** The City of Bolivar will be responsible for meeting all staffing and training requirements at the Class I and Class III landfills. Documentation of all training will be provided to the State.

#### D. BUDGET

The 10-year budget of estimated expenses and revenues for the Plan is provided below. Collection, Class I and Class III/IV landfill, public information, and tire and household hazardous waste costs do not reflect annual inflation. The Class I landfill costs are based on the existing \$6.00 per household per month user fee already in place in the County.

##### ESTIMATED EXPENSES

<u>Year</u>	<u>Collect.</u>	<u>Class I Landfill*</u>	<u>Class III/IV</u>	<u>Info. Educ.</u>	<u>Total</u>
1994-2003	\$300,000	\$576,000	\$150,000	\$20,000	\$1,046,000

\*Includes the cost for waste tire management and household hazardous waste management.

## ESTIMATED REVENUES

Revenues to fund the proposed solid waste management system have not been finalized at this time, however the Regional goal is for the system to be fully supported by user fees and tipping fees. User fees for residents will be billed on a monthly basis, and it is anticipated that these fees will be added to the monthly electric bill which already includes the \$6.00 per household per month fee for Class I landfill operation. Funding sources for the various system components are described below.

**Collection** - The door-to-door collection system in the unincorporated and unserved areas of the Region will be funded entirely through user fees. The anticipated residential cost is from \$4.00 to \$6.00 per household per month.

Municipalities which continue to operate a door-to-door collection system will be responsible for funding their system. In most cases this funding will continue to be through user fees.

**Class I Landfill Disposal and Problem Waste Management** - The Class I landfill and problem waste management costs are already being funded by user fees of \$6.00 per household per month from every household in the County. Problem waste programs include waste tire management and the upcoming household hazardous waste collection events. In addition to residential user fees, private haulers of commercial and industrial waste are charged a Class I tipping fee at the gate. This cost ranges from \$20.00 to \$25.00 per ton.

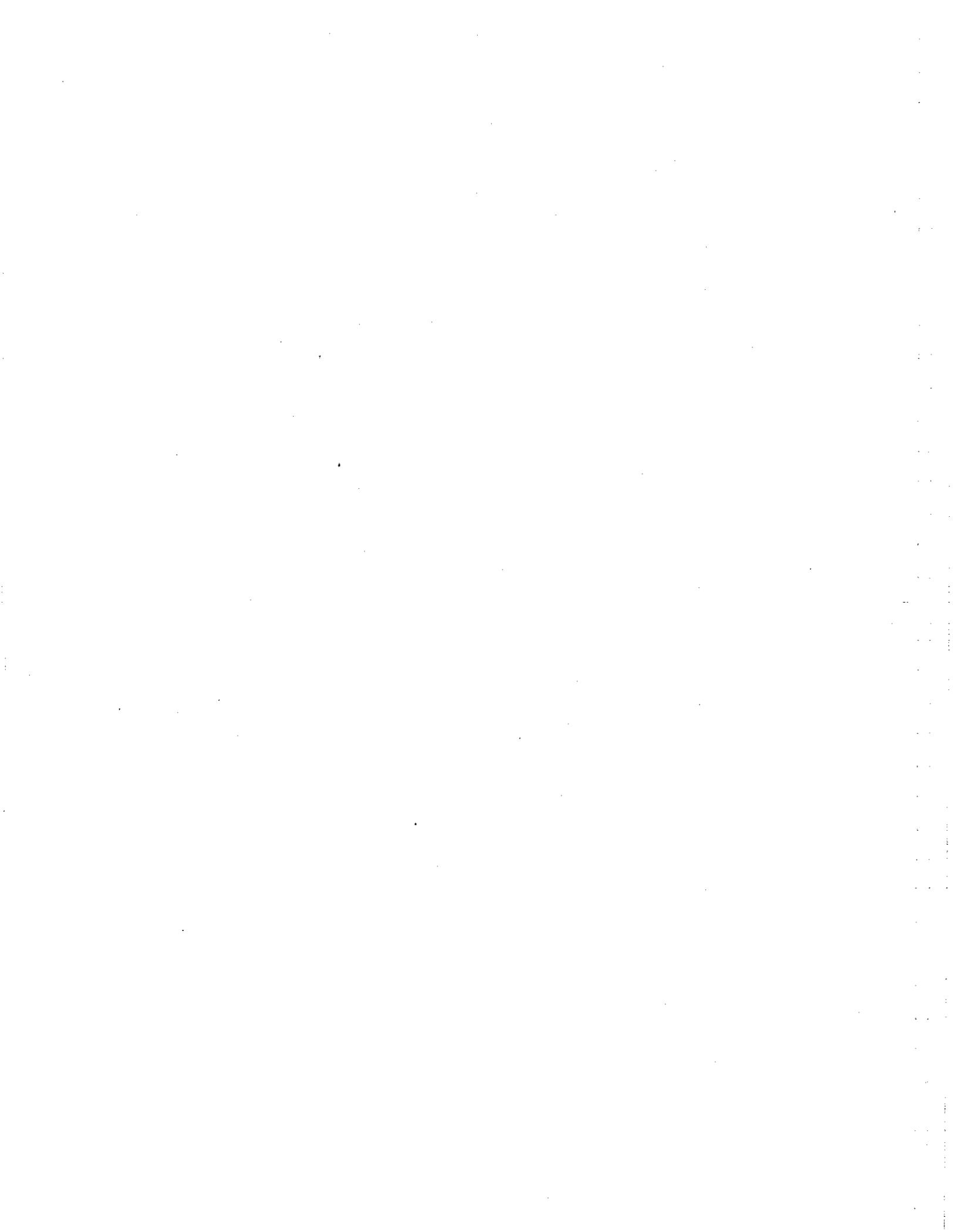
**Class III/IV Landfill Disposal** - The estimated cost for disposal of Class III/IV material at the County facility is approximately \$1.00 per household per month. Some revenue will also be obtained from tipping fees charged for commercial and industrial waste.

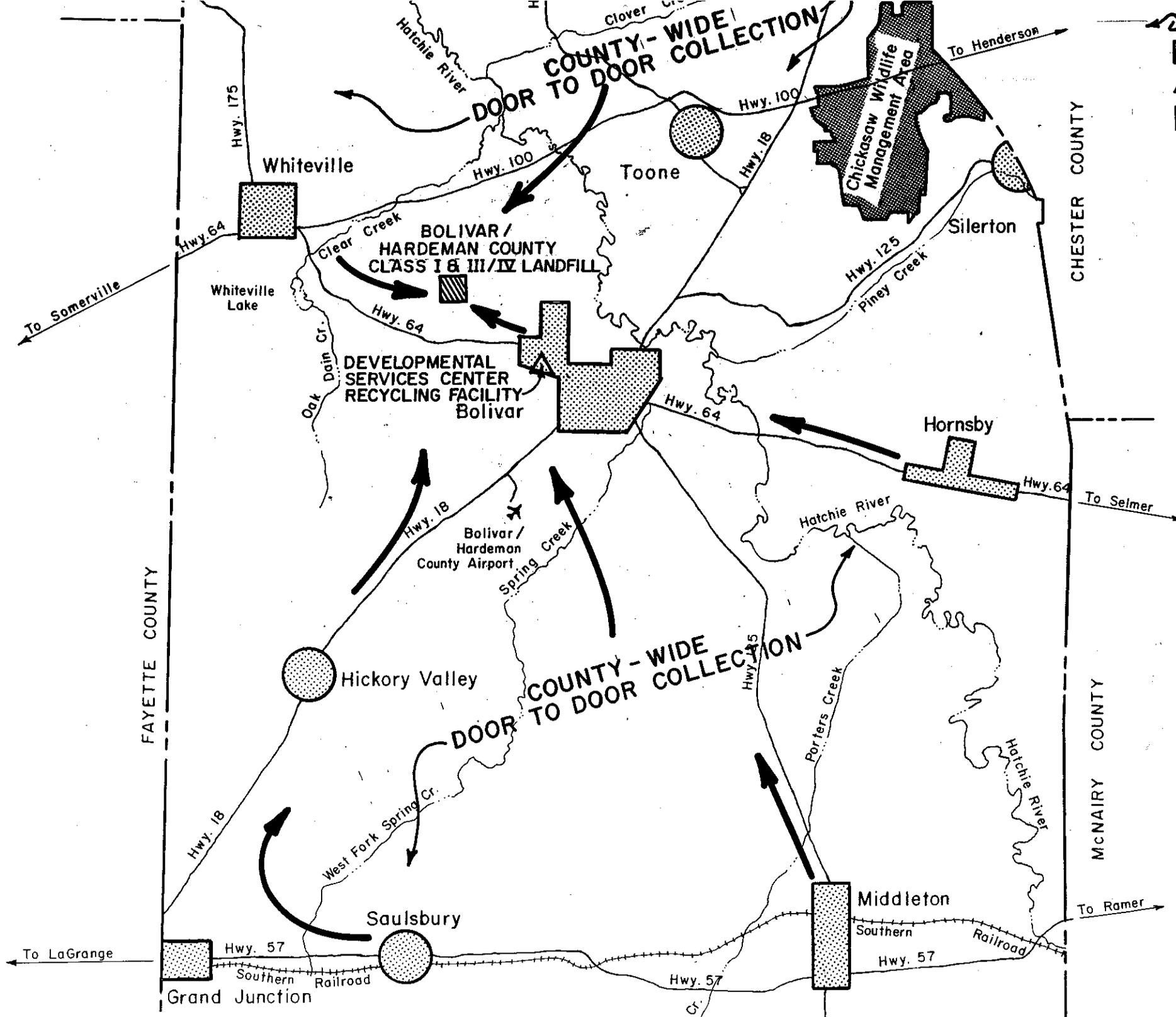
**Public Information and Education** - The total cost associated with these programs will also be funded through user fees anticipated to be approximately \$0.20 per household per month.

**Total Residential Cost** - The total cost per household per month for the entire solid waste management system is anticipated to be from \$9.00 to just under \$11.00.

### E. REGIONAL BASE MAP

Map XI-1 is a composite base map of the planned Regional solid waste management system showing waste flow patterns, major facilities, etc.





- DOOR TO DOOR COLLECTION
- DOOR TO DOOR COLLECTION
- RECYCLING CENTER
- LANDFILL (CLASS I & III/IV)

# Hardeman County

## Solid Waste Planning Region

## CHAPTER XII

### ALOCATION OF IMPLEMENTATION RESPONSIBILITIES:

#### PLAN ADOPTION AND SUBMISSION

In accordance with the Solid Waste Management Act of 1991, ultimately the full responsibility for implementation of the Plan resides with Hardeman County. Therefore the Plan was submitted to and reviewed by the Hardeman County Board of Commissioners on June 28, 1994 and adopted by resolution. A copy of the adoption resolution is included with the Plan submittal letter to the Tennessee Department of Environment and Conservation, Division of Solid Waste Assistance.

The Plan was also approved by the Hardeman County Solid Waste Region Board and the Hardeman County Planning Commission. Copies of the respective adoption resolutions from each of these is included in Appendix E.

## CHAPTER XIII

### FLOW CONTROL AND PERMIT APPLICATION REVIEW

#### A. FLOW CONTROL

The Solid Waste Management Act of 1991 authorizes two types of regional flow control - 1) out-of-region bans and 2) intra-region flow control. At this time, the Hardeman County Solid Waste Planning Region chooses not to include any flow control policies in the Plan. This decision will be reviewed annually to determine if future flow control policies need to be enacted.

#### B. REGIONAL REVIEW OF PROPOSED SOLID WASTE FACILITIES

The Solid Waste Act also requires planning regions with approved plans to review proposed solid waste disposal facilities and incinerators to determine if they are consistent with the approved Regional Plan. The review process for the Hardeman County Solid Waste Planning Region is as follows:

1. Any applicants for a permit to construct or expand a solid waste disposal or incineration facility within the Region shall submit a complete copy of the full application to the Regional Board at the same time such application is submitted to the Tennessee Department of Environment and Conservation(TDEC).

2. Upon receipt of the permit application documents, the Chairperson of the Regional Board will call a meeting of the Board within thirty(30) days.

3. After reviewing the permit application documents, the Board will determine if the proposed facility is consistent with the Regional Plan and make a recommendation for approval or denial of the application to the Hardeman County Board of Commissioners and the Hardeman County Planning Commission. In addition, the Regional Board will recommend a public hearing date to be set within thirty(30) days of its decision. The hearing will be held before the Hardeman County Board of Commissioners.

4. During the next regularly scheduled meeting of the Hardeman County Board of Commissioners, a decision will be made by the Commissioners to approve or deny the permit application.

5. The Regional Board will immediately notify the TDEC of the decision by the Board of Commissioners. Written documentation of the decision and the specific grounds wherein the decision was made will be submitted.

6. Appeal of the decision may be taken by an aggrieved person within thirty(30) days to the appropriate chancery court. An "aggrieved person" is limited to persons applying for a permit, persons who own property or live within a three(3) mile radius of the proposed facility, or municipalities in which the proposed facility is located.

PART III

APPENDICES

RESOLUTION FOR A SINGLE-COUNTY MUNICIPAL SOLID WASTE REGION

RESOLUTION NO. 1192-B

A RESOLUTION  
CREATING HARDEMAN COUNTY'S MUNICIPAL SOLID WASTE PLANNING REGION

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

WHEREAS, at the urging and support of a coalition of local government, environmental, commercial, and industrial leaders, the 97th Tennessee General Assembly enacted T.C.A. §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, Hardeman County's Board of County Commissioners has given consideration to the needs assessment prepared by the SWTDD development district; and

WHEREAS, T.C.A. §68-211-813, requires that counties in the State of Tennessee form municipal solid waste regions no later than December 12, 1992; and

WHEREAS, the Act's stated preference is the formation of multi-county regions with counties having the option of forming single or multi-county municipal solid waste regions; and

WHEREAS, the State of Tennessee will provide grant monies of varying amounts to single county, two county, and three or more county municipal solid waste regions to assist these regions in developing their municipal solid waste region plans; and

WHEREAS, the primary and prevailing purpose of the municipal solid waste regions are the preparation of municipal solid waste regional plans which among other requirements must identify how each region will reduce its solid waste disposal per capita by twenty-five percent (25%) by December 31, 1995, and a planned capacity assurance of its disposal for a ten (10) year period; and

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

NOW, THEREFORE BE IT RESOLVED, by the Board of County Commissioners of Hardeman 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 Hardeman 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 Hardeman County, Tennessee finds and determines that Hardeman County shall be and shall constitute a single county municipal solid waste region due to the following: County Commission thought this would be the best plan for Hardeman County

\_\_\_\_\_ ; 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 composed of (odd number between 5 and 15) members; and

BE IT FURTHER RESOLVED, that pursuant to T.C.A. §68-211-813(b)(1) fifteen Board members shall be appointed by the County Executive and approved by this Board of County Commissioners and, due to the fact that Bolivar (City or Town) collects or provides disposal services through its own initiative or by contract, the (City or Town) of Bolivar shall have a Board member appointed by the Mayor of Bolivar and approved by the City Council (Board of Alderman) of Bolivar (repeat this clause for each City within county that qualifies); and

\* See attached copy

BE IT FURTHER RESOLVED, that members of the Board of the Municipal Solid Waste Region shall serve a six (6) year term except that \_\_\_\_\_ members appointed by the County Executive shall have a two (2) year term, that \_\_\_\_\_ members appointed by the County Executive shall have a four (4) year term, \_\_\_\_\_ that members appointed by the County Executive shall have a six (6) year term, that \_\_\_\_\_ member appointed by the Mayor of \_\_\_\_\_ shall have a \_\_\_\_\_ year term (repeat this down for each City or Town within County that qualifies); and

BE IT FURTHER RESOLVED, that this Municipal Solid Waste Region Board shall have all powers and duties as granted it by T.C.A. §68-211-813, in 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 \_\_\_\_\_ 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 Hardeman 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, Hardeman County, Bolivar (City or Town), and to apply for and receive donations and grants from private corporations and foundations ; and

BE IT FURTHER RESOLVED, that Hardeman 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 Hardeman County shall transmit a copy of this Resolution to the Tennessee State Planning Office.

RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF HARDEMAN COUNTY, TENNESSEE, this 16 day of November, 1992, the welfare of the citizens of Hardeman County requiring it.

Sponsor

Don Pulse

County Commissioner

Attest:

Jerry Armstrong  
County Clerk

Approved:

Don W. Cuyt  
County Executive

Approved as to form:

Shy M. G.  
County Attorney

State of Tennessee  
Hardeman County

I, Jerry Armstrong, Clerk of the aforesaid County do hereby certify this to be a true and correct copy as found on record in this office.

Jerry Armstrong  
JERRY ARMSTRONG, COUNTY CLERK

This 25th day of November 1992.

# Hardeman County

Courthouse  
Bolivar, Tennessee  
38008



Office Of  
DON W. CLIFFT  
County Executive  
901-658-3266

## A CONTINUATION OF RESOLUTION # 1192-B FOR A SINGLE COUNTY MUNICIPAL SOLID WASTE REGIONAL BOARD 11-16-92

### HARDEMAN COUNTY SOLID WASTE REGIONAL BOARD COMPOSITION AND LENGTH OF TERM OF OFFICE

1. Five County Commissioners will serve a two (2) year term
2. Two representatives from Bolivar, one representative from Whiteville, one representative from Grand Junction, one representative from Middleton will serve a four (4) year term.
3. One representative from Hickory Valley, one representative from Saulsbury, one representative from Hornsby, one representative from Silerton, and one representative from Toone will serve a six (6) year term.
4. The County Executive also appoints 3 ex-officio members of this board. They are as follows:
  - (A) County Executive of Hardeman County
  - (B) Mayor of City of Bolivar
  - (C) City Administrator for City of Bolivar
5. This will comprise a board of 15 voting members with 3 ex-officio members for Hardeman County.

  
\_\_\_\_\_  
Hardeman County Executive

11-16-92  
Date

  
\_\_\_\_\_  
Hardeman County Court Clerk

11-16-92  
Date

11-24-92

Town of  
Hornoby

The Mayor and Board met in special meeting on 11-24-92 in lieu of the December regular meeting. All members were present. Judge Robert Meadows and Mrs. J. Howell were also present.

Moved by Mr. Doyle and seconded by Mr. Wiggins that the Minutes of November 10, 1992 be approved as read. All voted and voted "Aye".

Mrs. Hoffman stated it was customary to acknowledge the passing of a city official, etc. The passing of Mr. Ray Branthorn on November 21, 1992 was acknowledged at this time. He had been an alderman for over 15 years.

Reports from the fire dept. and police depts. were given.

Mr. Foster, in giving the street dept. report, stated that one load of gravel had been purchased and the switch box at the tennis courts would be installed by Thanksgiving.

Moved by Mr. Foster and seconded by Mr. Hanna that the selection of Mr. Robert Doyle to the Hardeman Co. Solid Waste Regional Board be approved. All voted and voted "Aye" except Mr. Doyle, who could not vote.

The Christmas Potluck supper will be held at 6:30 on 12-14-92.

The loss of funds resulting from the lack of proper <sup>water</sup> meter reading was discussed at length.

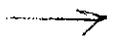
After much discussion it was moved by Mr. Foster and seconded by Mr. Hanna that two people read the meters the next two times and then ask Mr. Darrell Branthorn to appear at the January meeting. All voted and voted "Aye".

the  
of  
the

the salary

to be by  
in \*

Recorder



The Board supported Mrs Howell's suggestion that the water meters be read the 28<sup>th</sup> in order to get the books to Jackson by the 5<sup>th</sup>.

Mr. Hanna, Mrs. Howell and the Mayor are to meet with the two water meter readers.

Mr. O.D. Dodd appeared at the meeting. He had paid a deposit in August, 1989 but had not been receiving a bill.

Moved by Mr. Yeater and seconded by Mr. Doyle that Mr. Dodd be required to pay  $\frac{1}{2}$  of the minimum bill from August, 1989, which would be approx. "208.50". This is to be added to his regular bill on a regular basis.

Mr. Dodd wants the water pressure to the meter checked. All voted and voted "Aye".

Moved by Mr. Yeater and seconded by Mrs. Wiggins that the Board adjourn. Motion carried.

Henry P. Coffman  
Recorder

The  
January  
Howell  
Hodge  
H  
Vand  
as a  
?  
was  
?  
Vand  
side  
as  
198  
and  
Spe  
city

## **APPENDIX A**

### **Legal Documentation and Organization of the Region**

City of Middleton  
Middleton, Tennessee  
January 25, 1993

BOARD MEETING: Mayor and Board of Aldermen

PRESENT: Mayor James S. Simpson, Mike Bodiford, Harry Shelly, Vernon Henderson

ABSENT: Carl Gibson

ALSO PRESENT: Scott Karner with Tennessee Consolidated Retirement System

The meeting was called to order and the minutes from the last two meetings were read and approved.

~~The mayor read a letter from County Executive Don Cliff asking us to appoint a member from Middleton to the Solid Waste Board. Vernon Henderson made a motion to appoint Mike Bodiford to the Board, Harry Shelly seconded the motion, and all were in favor.~~

Harry Shelly made a motion for the city to assume responsibility for cleaning up the railroad right of way from Highway 57 South to Dover Elevator North. Vernon Henderson seconded the motion, and all were in favor.

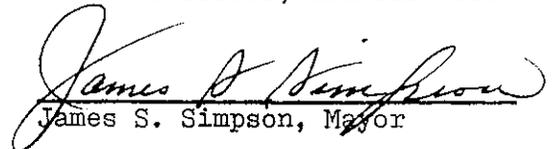
The mayor read a letter outlining the meeting of December 31st, 1992, with City Attorney Chip Cary, Police Department and other city employees.

Scott Karner with the Tennessee Consolidated Retirement System reported to the Board on retirement program for city employees.

The mayor recommended that the city do a new study with Tennessee Consolidated Retirement System with the city buying 5 years prior service for employees. Mike Bodiford made a motion to accept the mayor's recommendation, Vernon Henderson seconded his motion, and all were in favor.

Harry Shelly made a motion to adjourn, seconded by Vernon Henderson, and all were in favor.

  
Lee Whatley, Recorder

  
James S. Simpson, Mayor

72

City of Grand Junction

June 12 - 1990

Motion by Gene Cecil Wilson be appointed to serve on the Solid Waste Management Board  
 Seconded by Welch  
 The Motion Carried

The Mayor advised the board a Short Term  
 Term is available.  
 This was held for the June meeting.

Judge Hall asked for an increase  
 in his pay from 60.00 per month to 75.00 per mo  
 Motion by Fryer to set Judge Hall's fee at  
 75.00 per mo. Beginning Jan 1, 1993  
 Seconded by Welch  
 The Motion Carried

Jennings asked if ~~the~~ a spot on  
 the library could be sprayed with sleep  
 to see if it would take the mildew off

Fryer was appointed to contact owners  
 of property from Washington Street to the school  
 This is for an easement for sidewalk.

and Gene  
 had pay  
 from  
 July 1, 92

Motion by Welch Senior Citizen Director  
 Minniea Janett's salary be set at 4.50 per hr.  
 Seconded by Gene  
 The Motion Carried

Fryer advised the board Willie Anderson  
 would not work part time for the Police.

DECEMBER 7, 1992

The Board of Mayor and Aldermen of the Town of Whiteville met in regular session on Monday, Dec. 7, 1992, at 7:30 P.M. at City Hall.

Answering roll call were Mayor Julian Cooper, and Aldermen Ernie Burkeen, Carl Campbell, George Dotson, Patricia Gibbs, George Phillips and Sidney Woods.

Minutes of the November 2nd meeting were read and approved as read on motion by George Dotson, seconded by Patricia Gibbs.

Mayor Cooper reported to board on sample test of water after completion of aerator, stating chemicals present before were now well below state requirements. Hubert Morrison property has been measured for sewer lines and would take approximately 2 days to complete.

Mayor Cooper asked for boards approval for him (Mayor Cooper) to contact city attorney to draw up lease contract for River City Fabricating. Money from R.E.A. should be received by the first of the year, the city would be obligated to pay R.E.A. monthly, amounting to approximately \$10,000 per year for 10 years, city in turn would receive monthly payment from River City Fabricating to more than cover their loan payment. The motion was made by Carl Campbell, seconded by George Phillips to give Mayor Cooper approval to go ahead with the lease contract. Motion carried.

Mayor Cooper asked the Board to consider constructing another building in the Industrial Park, stating the city had another inquiry concerning a possible location in the city had another building been available. It might even be possible to obtain another interest free loan from R.E.A. once the present one is completed. Board members agreed another building would be best way to attract more industry and a motion by George Dotson to give Mayor Cooper authority to start preparations for another building as soon as money is received from R.E.A. loan, was seconded by Carl Campbell and carried with no opposition.

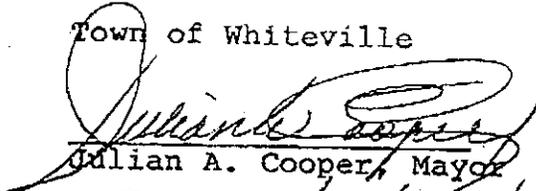
The board appointed Mayor Cooper as the Whiteville representative to the Hardeman County Solid Waste board on motion by Sidney Woods, seconded by George Phillips.

The resignation of Carl Campbell, as Safety Inspector, effective Dec. 31, 1992, was accepted by the Board, and on motion by Sidney Woods, and seconded by Ernie Burkeen, George Dotson was appointed as the new Safety Inspector.

There being no further business to come before the Board

at this time, the motion to adjourn was made by Carl Campbell, seconded by Sidney Woods. Motion carried.

Town of Whiteville

  
Julian A. Cooper, Mayor

  
Nida H. Campbell, Recorder

Council Meeting  
December 8, 1992

The Mayor and Council met in regular session on the above date at 7:00 p.m. with the following attendance:

Present:	Mayor Harold Fitts	Also Present:	Fred F. Kessler
	Milton Basden		Morris Denton
	Ed Dickerson		Lindsey Frost
	Charles Frost		Cynthia Frost
	Bernice Miller		David Moore
	Jimmy Sain		Tracy Courage
	Joe Shearin		Burton Shearin
	Blanchie Tisdale		Barbara Kessler
			Mike Hewitt
			Mike Wellons
			Louis Wellons
			Ann Wellons
			Paul Vaughan
			Paul Nelms
			Meri Collins
			Lloyd Bell
			Johnny Anthony
			Vann Pettigrew
			Dave Mills
			Raymond Russell
			Sam McCord
			Haley Smith

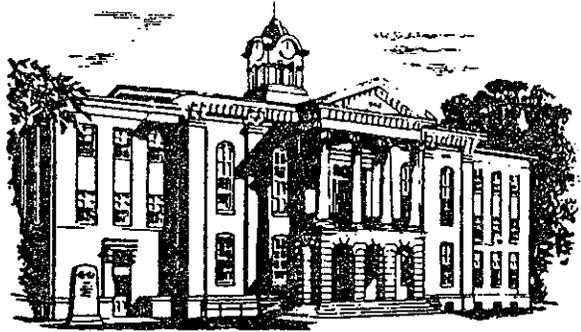
Mayor Fitts called the meeting to order and welcomed all the visitors in attendance.

Charles Frost moved, seconded by Milton Basden, to approve and dispense with the reading of the minutes for the November 10 Council meeting. All voted "Aye".

At this time Mayor Fitts read correspondence he had received. The first was a thank you note from the family of Malcolm Vincent, a former mayor that had recently passed away. Next a letter was read from the State of Tennessee Department of Transportation which stated that the City of Bolivar's allocation of surface transportation funds for 1992-93 was \$33,178.00 which gave the City a balance of \$99,040.00. The letter stated that this did not include the local matching funds and the total would be available for four fiscal years. The third piece of correspondence was from Don Clifft, County Executive, stating the County Commission had adopted a resolution establishing the Hardeman County Solid Waste Regional Board and that two representatives would be appointed from the City of Bolivar. The Mayor stated that Joe Shearin had been appointed to this board at last month's meeting and that he would like to appoint Milton Basden as the City's second representative. The Mayor read the last piece of correspondence which was a letter from Janette

# Hardeman County

Courthouse  
Bolivar, Tennessee  
38008



Office Of  
DON W. CLIFFT  
County Executive  
901-658-3286

June 27, 1994

Department of Environment and Conservation  
Solid Waste Division  
21ST Floor, L & C Building  
401 Church Street  
Nashville, Tennessee 37243-0435

Dear Sirs:

Please accept this letter as certification that Hardeman County will be in compliance July 1, 1994 with the financial accounting requirements of T.C.A. 68-31-874(a) as part of the Solid Waste Management Act of 1991.

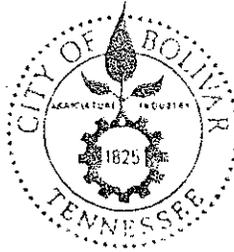
Sincerely,

Don W. Clifft  
Hardeman County Executive

DWC:wmv

Charles L. Frost, M.D.  
MAYOR

James R. Sain  
City Administrator



115 NORTH WASHINGTON  
38008

Councilmen:  
Milton Basden  
Ed Dickerson  
Bernice Miller  
Joe Shearin  
Blanchie Tisdale  
James Tisdale  
Jerry V. Wilhite

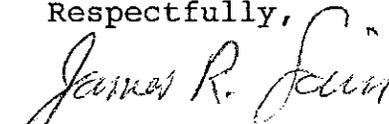
June 27, 1994

Department of Environment and Conservation  
Solid Waste Division  
21st Floor, L & C Building  
401 Church Street  
Nashville, Tennessee 37243-0435

Dear Sirs:

Please accept this letter as certification that the City of Bolivar is in compliance with the financial accounting requirements of T.C.A. 68-31-874(a) as part of the Solid Waste Management Act of 1991.

Respectfully,

  
James R. Sain  
City Administrator

JRS/jk

## APPENDIX B

### Documentation for Adjustments to the Base Year Generation

NOT APPLICABLE



## APPENDIX C

### Public Participation Activities

PUBLIC HEARING  
FOR  
MUNICIPAL SOLID WASTE REGIONAL PLAN  
HARDEMAN COUNTY SOLID WASTE PLANNING REGION

DATE: JUNE 23, 1994  
TIME: 4:00 PM  
LOCATION: CITY HALL; BOLIVAR, TENNESSEE

ATTENDANCE LIST:

Mr. Karel Pekarek  
Mr. Don Clifft  
Mr. James R. Sain  
Mr. Joseph H. Shearin  
Mr. Jones R. Russell  
Mr. Lloyd Bell  
Mr. Harvey Matheny

MINUTES:

All in attendance were city officials, county officials, State officials and engineering consultant representatives. No comments were received from the general public.

## APPENDIX D

### Exports and Imports

NOT APPLICABLE



**APPENDIX E**

**Review by Appropriate Municipal or Regional Planning Commission**

June 30, 1994

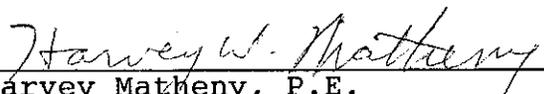
MEMORANDUM TO: ALL COUNTY AND MUNICIPAL PLANNING COMMISSIONS  
HARDEMAN COUNTY, TENNESSEE  
(BOLIVAR, GRAND JUNCTION, WHITEVILLE, AND HARDEMAN  
COUNTY)

FROM: GRACE & ASSOCIATES, INC.  
ON BEHALF OF HARDEMAN COUNTY

SUBJECT: MUNICIPAL SOLID WASTE REGIONAL PLAN  
FOR HARDEMAN COUNTY SOLID WASTE PLANNING REGION

Based on Tennessee's Regional (TCA 13-3-101 et seq.) and Municipal (TCA 13-4-101 et seq.) planning statutes, this letter is to inform local planning commissions of the Hardeman County Solid Waste Plan referenced above. You are invited to review the Plan at the County Executive's office and submit any comments if you so choose. Although the Plan will be submitted to the State on July 1, 1994, any comments will be appreciated and evaluated as implementation of the Plan proceeds.

A Public Hearing on the Plan was held at 4:00 pm, Thursday, June 23, 1994 at the Bolivar City Hall, and the Plan was officially approved by the County Commission on June 29, 1994.

  
\_\_\_\_\_  
Harvey Matheny, P.E.  
Grace and Associates, Inc.