



Solid Waste Needs Assessment

November 2003

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I. Historical Overview

On May 16, 1989, the Alabama State Legislature passed Act 89-824 governing solid waste management. The act required the Director of the Alabama Department of Environmental Management (hereafter referred to as ADEM) to prepare a State Solid Waste Management Plan. It also required cities and counties to prepare and adopt comprehensive solid waste management plans with assistance from ADEM and the state's 12 regional councils. The act was written to help the state's counties prepare for forthcoming guidelines and regulations from the Environmental Protection Agency (EPA) under Subtitle D of the Resource Conservation and Recovery Act of 1976. These guidelines (among other things) mandated the installation of impervious liners to prevent leachate from putrescible waste landfills from contaminating underlying water resources and required the eventual closure and capping of non-complying landfills. In effect, the Subtitle D requirements forever changed the manner in which household solid waste was disposed and resulted in higher costs for landfill construction and solid waste disposal.

In accordance with Section 7 of the 1989 Act (Title 22, Chapter 27, Section 46), each regional council was required to prepare and adopt a "regional solid waste needs assessment" evaluating solid waste management needs within the region on or before November 16, 1989. The regional needs assessment was required to include the following:

1. An evaluation of the amount of solid waste generated within the region and the amount of remaining disposal capacity, expressed in years, at each solid waste disposal facility within the region.
2. An evaluation of the needs of all localities within the region as to the adequacy or inadequacy of solid waste collection, transportation, and disposal within those localities.
3. A projection of the expected population and business growth in the region, including specific estimates of the types of businesses which may be entering and leaving the region and the resulting impact such changes will likely have on waste volumes generated in the region.
4. An evaluation of the environmental, economic, and other relevant factors which could be implicated by acceptance of solid waste from beyond the boundaries of the region.

In addition to the preparation and periodic revision of the regional needs assessment, the regional councils were required to:

1. Evaluate, as necessary, the solid waste management needs of all local governments within the region.
2. Formulate, as requested, recommendations to local governments on solid waste management issues including the feasibility of joint efforts within the region acting to

develop and operate a solid waste management or disposal facility and foster cooperation on such matters.

3. Provide, upon request, assistance to local governments within the region to formulate their own plans for evaluating needs and providing adequate solid waste management within their jurisdictions.
4. Serve as a clearinghouse for local governments in the region regarding solid waste management information.

The West Alabama Planning and Development Council (name changed to West Alabama Regional Commission (WARC) in 2002; will be referred to as WARC from here on out in this report) released its report entitled, “Regional Solid Waste Assessment: Region 2” in November of 1989. The report contained a detailed assessment of solid waste generation and disposal trends and needs in satisfaction of the 1989 Act. Data for the assessment was gathered through a combination of research on national and regional standards, interviews of landfill sites and recycling centers, special sample weight surveys conducted at local landfills, and population estimates and projections furnished by the Center for Business and Economic Research (CBER) at the University of Alabama. Exhaustive research efforts were conducted to identify and collect solid waste generation and disposal data for the assessment.

Funding for the initial regional solid waste needs assessments was provided to each regional council through the Alabama Department of Economic and Community Affairs (ADECA) annual work program. This program provided an annual source of funds to the regions for specified planning work tasks, which included a wide range of elements such as water and sewer system inventories, road inventories, and housing strategies for each county served by the regions. The program was funded through a combination of Community Development Block Grant (CDBG) and Appalachian Regional Commission (ARC) funds. Funding for these regional planning work programs was discontinued in 1994 and was never replaced. Although the regional councils receive an annual appropriation of state funds to support local technical assistance services, those funds were already dedicated to other activities at the time the Act was passed and were never intended to cover the additional costs associated with the ongoing planning requirements of the Act. In essence, the demise of the ADECA annual planning work program had the effect of making the annual update of the regional solid waste needs assessments an unfunded mandate on the regional councils.

This document has been prepared to serve as a periodic update to the WAPDC’s 1989 Solid Waste Assessment. Funding constraints and the lack of consistent or reliable data for local solid waste generation and disposal patterns have placed severe constraints on the Commission’s ability to effectively assess current and future solid waste management needs within the region. In light of these constraints, the information contained in this report represents the Commission’s best attempt to satisfy its obligations under Alabama Law.

II. Inventory of Solid Waste Management Facilities

The seven-county West Alabama Region consists of Bibb, Fayette, Greene, Hale, Lamar, Pickens, and Tuscaloosa Counties, and the 37 municipalities wholly or predominantly located in those counties.

Prior to passage of the Subtitle D regulations, most local governments operated their own landfills serving the cities and towns within each county. However, the Subtitle D regulations called for the eventual closure or upgrade of all unlined landfills accepting household (putrescible) waste. All replacement and future landfills had to meet stringent requirements for liners and leachate treatment systems to minimize the environmental impacts of solid waste disposal. The added expense of complying with these new requirements caused sharp increases in the cost of solid waste disposal.

This chapter of the Solid Waste Needs Assessment update for the West Alabama Region provides a general overview of current solid waste collection practices and disposal facilities within the region. The information provided in this chapter was obtained from ADEM and a survey of local governments and landfill operators. Two separate surveys were prepared. A local government survey was prepared to collect information from each city, town, and county regarding local solid waste management collection, disposal, and recycling practices and associated costs. The survey also attempted to determine where the local government was transporting its waste for disposal. A copy of this survey is attached to this document as Appendix A.

The second survey was mailed to all landfill operators in each region. It was designed to collect information on the amount and types of waste disposed at each facility, the general composition of the waste stream, the local governments served by the facility, and the facility's remaining permitted capacity. WARC began the surveying process earlier than the other eleven regions; therefore an addendum to the landfill operator's survey was mailed out. A copy of the landfill operator's survey and addendum is attached to this report as Appendix B.

The initial survey was mailed to each local government and landfill operator in November 2002. Respondents were asked to return their completed surveys on or before December 31, 2002. The addendum to the landfill operator's survey was mailed out in January 2003. However, slow response rates resulted in the WARC conducting follow-up telephone calls to local governments and landfill operators that did not voluntarily respond to the surveys or who provided incomplete information. Despite these efforts, the Commission was not able to obtain survey responses from all of the local governments and landfill operators. Of the seven counties, nine cities, and 28 towns in the West Alabama Region, only 38 (86%) eventually responded to the local government survey, while only 11 of the 15 (73%) licensed landfill operators in the region responded to the landfill operator survey. Moreover, many of the responses to both surveys were returned with incomplete information. In a few instances, information reported in the surveys was incorrect or inconsistent. Neither the local governments nor the landfill operators were subject to any legal obligation to respond to the survey, even though the regional councils were

required by law to assess solid waste needs for the region. While some general information regarding solid waste collection and disposal practices can be gleaned from the survey results, the results were not adequate to serve as a reliable basis for a thorough assessment of regional solid waste needs. The regional councils simply lack the funds necessary to conduct dedicated staff research on these complex issues.

The Alabama Department of Environmental Management (ADEM) is in the process of adopting revised regulations governing solid waste management. The proposed new regulations will include an expanded local government survey that will collect more detailed information regarding local government waste collection and disposal than was requested by the surveys prepared by the regional councils. Unfortunately, the initial responses to that proposed survey will not be due until March 16, 2004, even if the proposed new regulations are adopted. Consequently, that information cannot be used in this study.

A. Waste Collection and Transportation Services

Waste collection and transportation services are varied, and data is based on the limited information gathered from the local government survey. First of all, it is important to understand that local government contracts for waste collection and disposal cover only residential (household) waste. Waste generated by local businesses and industries is handled by special contracts with each individual waste hauler. Since some governments do not have mandatory curbside collection, individual residents in those counties may dispose of their household waste by themselves or contract with a local waste collection service. Many local governments still collect their own household waste and deliver it to a local transfer station (usually the former county landfill), where it is collected by a private hauler and transported to a Subtitle D landfill. Other local governments offer their own collection services for yard waste only, which is transported to a local inert landfill within the city or county. To complicate matters further, some businesses and local governments participate in voluntary recycling programs, which alter the composition and volume of the household and non-household waste streams. Unfortunately, no central source of information on these waste collection and transportation practices is available. The information contained in this section represents the best available information collected from the local government survey.

Two major commercial waste haulers provide household waste collection and transportation services to local governments in the seven-county West Alabama Region. They are Waste Management (also operates under the name Waste Away) and Browning Farris Industries (BFI). Waste Management directs the waste it collects from the region to Pine Ridge Sanitary Landfill, a Subtitle D landfill that it operates in Meridian, Mississippi; Prairie Bluff Landfill in Houston, Mississippi; a landfill in Hamilton, Mississippi; Big Wheel Recycling in Marion County; Pine View Sanitary Landfill, a Subtitle D landfill in Walker County; and, the Black Warrior Solid Waste Disposal Facility, a Subtitle D landfill in Tuscaloosa County. Waste collected within the region by BFI is currently being transported to the Pine View Sanitary Landfill.

The WARC has no available information on smaller public or private waste haulers that may serve local governments and businesses in the region. However, it is acknowledged that a number of small private haulers collect and transport recyclable materials within the region.

More detailed information regarding current household waste collection and transportation practices obtained from completed local government surveys (Appendix A) is summarized by county in the following sections. Although the information is limited and incomplete in many instances, it represents the best and most current information available.

1. Bibb County

Within Bibb County, survey responses were received from the Bibb County Commission, the City of Brent, the City of Centreville, the Town of West Blocton, and the Town of Woodstock. However, the responses from the Bibb County Commission, the City of Centreville, the Town of West Blocton, the Town of Woodstock were incomplete.

According to the survey results, the county is responsible for collecting and transporting wastes to the Bibb County Landfill, which serves as a transfer station. All wastes are transferred from the Bibb County Landfill to the Highway 70 Landfill in Shelby County.

Within Bibb County, only the City of Centreville reported the availability of recycling programs. The City of Centreville reported that there is a recycling facility at the Bibb County Landfill. Cardboard is the only material recycled at the landfill.

2. Fayette County

Survey responses were received from the Town of Belk, the Town of Berry, the City of Fayette, and the Town of Glen Allen. None of the surveys received were complete. Fayette County did not respond to the survey.

According to the information received the Town of Belk contracts with Waste Management for waste collection and disposal. Waste is collected and transported to a transfer station in Lamar County, and then the waste is transported to a Walker County Landfill for disposal.

The Town of Berry contracts with Waste Management for collection of household waste. The Town did not indicate where the waste was disposed of. The Town of Berry has access to recycling facilities through the county landfill. The facility recycles paper, cardboard, and aluminum cans.

The City of Fayette reported that the local government is responsible for collecting and transporting household waste to a BFI transfer station in Yampertown located in Marion County. All household waste is disposed of outside of Fayette County, but the final destination of the waste is unknown. All inert materials are disposed of in the Green Ridge Inert Landfill in Fayette County. The City of Fayette reports access to recycling facilities that are privately

owned and operated. These facilities recycle paper and plastic.

The Town of Glen Allen reported that Fayette County Waste Disposal and Marion County collect and dispose of their waste as a county function. The Town did not indicate the final destination of their household waste.

3. Greene County

The City of Eutaw is the only municipality that responded to the initial survey. Though the survey was incomplete they reported that solid waste collection and disposal are contracted through Waste Management. The Towns of Union, Boligee, and Forkland did not respond to the initial survey.

The Greene County Commission responded with an incomplete survey. Their survey did not indicate if the local government was responsible for collection or if this service is contracted through a private contractor. The survey did indicate that wastes were being transported to Tuscaloosa County.

Through a telephone interview we were able to determine that Greene County is responsible for collecting and transporting all household wastes from the unincorporated areas of the county and the Towns of Boligee and Union. All household wastes are transported to the Black Warrior Solid Waste Disposal Facility located near the Town of Coker located in Tuscaloosa County.

Through a telephone interview we were able to determine that the Town of Forkland contracts the collection and transport of household waste with Waste Management. We were unable to determine the final destination of the waste.

4. Hale County

Surveys were received from the Hale County Commission, the City of Greensboro, the Town of Moundville, and the Town of Newbern. All responses were incomplete. The Town of Akron did not respond to the initial survey.

Hale County contracts with Perdue and Son out of Selma for the collection and disposal of household wastes. The final destination of the waste is unknown.

The City of Greensboro reported that the local government is responsible for collecting and transporting wastes to the landfill. All wastes are disposed of at the Pine Ridge Sanitary Landfill in Meridian, Mississippi. The City of Greensboro has access to privately owned recycling facilities. These facilities recycle aluminum cans.

The Town of Moundville reported that collection and disposal of household wastes is contracted through Waste Management. Wastes are then transported and disposed of in the Black Warrior Solid Waste Disposal Facility located near the Town of Coker in Tuscaloosa County.

5. Lamar County

Surveys were received from the Lamar County Commission, the Town of Beaverton, the Town of Detroit, the Town of Kennedy, the Town of Millport, the City of Sulligent, and the City of Vernon. The Towns of Beaverton, Detroit, and Millport returned incomplete surveys.

Lamar County contracts with Waste Management for collection and transport of household wastes to the Lamar County Landfill where it is then transferred to the Big Wheel Recycling Facility in the Town of Guin located in Marion County. The final destination of the waste was not indicated. The County indicated that the Cities of Sulligent and Vernon have recycling programs. Both programs recycle paper.

The Town of Beaverton contracts with Waste Management for collection and transport of household waste. The Town did not indicate where the wastes are disposed of. They did indicate that there was not a plan in place to handle inert waste.

The Town of Detroit contracts with Waste Management for collection and transport of household waste. The Town did not indicate where the wastes are disposed of.

The Town of Kennedy contracts with Waste Management for collection and transport of household waste. Kennedy indicated that all of their household waste is disposed of in Hamilton, Mississippi. The name of the landfill was not given.

The Town of Millport contracts with Waste Management for collection and transport of household waste. The Town did not indicate where the wastes are disposed

The City of Sulligent contracts with Waste Management for the collection and transport of household waste. All waste is transported to the Lamar County Landfill where it is transferred to Prairie Bluff Landfill in Houston, Mississippi. The City of Sulligent operates the Sulligent Recycling Center. Here they recycle cardboard, newspaper, shredded paper, and magazines.

The City of Vernon contracts with Waste Management for collection and transport of household waste. All waste is carried to the Lamar County landfill where it is then transferred to Houston, Mississippi. The name of the landfill was not given. The City of Vernon operates a recycling program. They recycle plastic, glass, cardboard, metal, aluminum, and paper.

6. Pickens County

Surveys were received from the Pickens County Commission, the City of Aliceville, the Town of Carrollton, the Town of Ethelsville, the Town of Gordo, the Town of Pickensville, and the City of Reform. The Towns of Memphis and McMullen did not respond to the initial survey. Surveys from the City of Aliceville, the Town of Ethelsville, the Town of Pickensville, and the City of

Reform were incomplete.

In Pickens County, the Towns of Carrollton and Gordo and the Cities of Aliceville and Reform collect their garbage and transport it to the landfill near Carrollton. The County is responsible for collecting and transporting household wastes from the remainder of the county to the Pickens County Landfill in Carrollton. Here wastes are transferred to the Pine Ridge Sanitary Landfill in Meridian, Mississippi. Through a telephone interview we determined that the County is responsible for the Town of Memphis and the Town of McMullen as well.

The Town of Carrollton reports access to one recycling facility. This facility is located at the Carrollton City Hall. Here they recycle newspaper, cardboard, and aluminum.

7. Tuscaloosa County

Surveys were received from the Town of Brookwood, the Town of Coaling, the Town of Lake View, and the City of Northport. The Town of Coker and the Town of Vance did not respond to the initial survey. Though the City of Tuscaloosa and Tuscaloosa County did not respond they gave the responsibility of completing the survey to the operator of the Black Warrior Solid Waste Disposal Facility.

The City of Tuscaloosa and the City of Northport are responsible for collecting and transporting household waste to the Black Warrior Solid Waste Disposal Facility near Coker. Tuscaloosa County, along with the Town of Brookwood, the Town of Coaling, the Town of Coker, and the Town of Lake View, contracts these services with Waste Management. Through a telephone interview we were able to determine that the Town of Vance contracts its household waste collection with an individual. This individual collects the waste and transports it to a dumpster. The Town has a contract with Moore Coal Company in Bessemer to empty the dumpster. The final destination of the waste is unknown.

The City of Tuscaloosa also collects and transports yard waste to various inert landfills within Tuscaloosa County. The City of Tuscaloosa and the City of Northport have curbside pick-up recycling programs (in selected neighborhoods) for paper, plastic, glass, and aluminum cans. There are several privately owned and operated recycling facilities in the county.

B. Waste Disposal Facilities

According to ADEM records, a total of 15 permitted active landfills are located within the seven-county West Alabama Region. Only one of these landfills is constructed to Subtitle D standards and accepts municipal household waste (the Black Warrior Solid Waste Facility located in Tuscaloosa County). Of the remaining 14 landfills, nine are classified as Construction/Demolition Landfills, and five are classified as Industrial Landfills. These landfills

are authorized to accept inert waste, such as construction debris, tree limbs, lawn waste, and other materials that will not leach contaminants into groundwater resources. Of the 15 landfill operations in the region, a total of 11 (73%) replied to the WARC's Landfill Operator Survey (please refer to Appendix B).

In light of the problems encountered with the Landfill Operator Survey, ADEM officials provided information from their records for each permitted active landfill, including a listing of Alabama Counties that each landfill is permitted to serve (whether or not they are actively served by those facilities), the remaining capacity volume of each landfill, and available data on the current waste stream entering each landfill. This data represents the most reliable and complete data set available for analysis in this needs assessment. The pertinent data collected for each permitted landfill in the region is provided below in Table 1 and Table 2.

Table 1 provides information on permitted active landfills that are located in the West Alabama Region, while Table 2 identifies permitted active landfills located elsewhere in Alabama that are licensed by ADEM to serve counties in the West Alabama Region. Although many landfill operations are licensed by the State to serve counties in the West Alabama Region, it is unclear if they are actually receiving waste from local governments in the West Alabama Region. To the degree the actual destination of local government waste streams is known, that information has been provided earlier in this chapter. However, the fact that a landfill is licensed to serve a local government (regardless of whether or not that service is currently utilized) means that the remaining capacity at that landfill can be credited as potential capacity to the counties it is licensed to serve and is recognized as such by this needs assessment.

It is also recognized that additional landfills located outside of the State of Alabama can accept waste from counties within the region. Once solid waste is transported across state lines it is considered interstate commerce and is subject to federal law. Individual states do not have the legal authority to bar or prohibit interstate commerce. Therefore, local governments within the West Alabama Region may contract with any out-of-state landfill for solid waste disposal should the need arise. This option creates additional potential landfill capacity beyond that documented in this needs assessment. Unfortunately, the WARC has little available information regarding the transportation of solid waste across state lines or the amount of additional potential solid waste disposal capacity that may be represented by out-of-state landfills.

TABLE 1: Permitted Active Landfills in the West Alabama Region, 2003

Landfill Name	Location (County)	Type of Landfill	West Alabama Region Governments Landfill Is Permitted To Serve	Permitted Daily Volume	Permit Expires
Bibb County Landfill	Bibb	C/D	Bibb County	20 tons	2006
Pittsburg and Midway Landfill	Fayette	C/D	Pittsburg and Midway Coal Company	1 ton	2005
Green Ridge Inert Landfill	Fayette	C/D	Fayette County	300 yd ³	2006
Greene County Steam Plant Industrial Landfill	Greene	I	Alabama Power Company, Greene County Steam Plant	5 yd ³	2005
Greene County Inert C/D Landfill	Greene	I	Greene, Hale, Marengo, Perry, Pickens, Sumter and Tuscaloosa Counties	100 tons	2006
Lamar County North Inert Landfill	Lamar	C/D	Lamar County	18.5 tons	2007
Weyerhaeuser Company Landfill	Lamar	I	Weyerhaeuser Company Millport Operations, Lamar County	25 yd ³	2001
Pickens County Inert Landfill	Pickens	C/D	Pickens County	5 tons	2007
Black Warrior Solid Waste Facility	Tuscaloosa	MSWLF	State of Alabama	1500 tons	2006
LC Harris/ Jerusalem Heights Landfill	Tuscaloosa	C/D	B.F. Goodrich Plant	60 yd ³	2002
Phifer Wire	Tuscaloosa	I	Phifer Wire Products Plant	15.2 yd ³	2005
Elk Corporation of Alabama Landfill	Tuscaloosa	C/D	Elk Corporation of Alabama's Roofing Plant	70 tons	2001
Superior Eagle Bluff Landfill	Tuscaloosa	C/D	Tuscaloosa County, City of Northport, and Tuscaloosa County Board of Education	1000 yd ³	2006
TAMKO Asphalt Products, Inc. Industrial Landfill	Tuscaloosa	I	TAMKO Roofing Products, Inc.	150 tons	2004
Cypress Creek Landfill	Tuscaloosa	C/D	Bibb, Fayette, Greene, Hale, Jefferson, Perry, Shelby, Sumter, Tuscaloosa, and Walker Counties	2000 yd ³	2007

NOTES: MSWLF=Municipal Solid Waste (Subtitle D) Landfill; C/D=Construction/Demolition Landfill; I=Industrial Landfill.

SOURCE: Alabama Department of Environmental Management, 2003.

TABLE 2: Permitted Active Landfills outside the West Alabama Region Serving Counties within the West Alabama Region, 2003

Landfill Name	Location (County)	Type of Landfill	West Alabama Region Governments Landfill Is Permitted To Serve	Permitted Daily Volume	Permit Expires
Three Corners Regional Landfill	Cherokee	MSWLF	Tuscaloosa County	1500 tons	2002
Big Wheel Recycling Inc. Landfill	Marion	C/D	Fayette and Lamar Counties	1200 yd ³	2003
Pine View Sanitary Landfill	Walker	MSWLF	Fayette and Tuscaloosa Counties	1500 tons	2006
Highway 70	Shelby	MSWLF	Bibb County	1,500 tons	2006

NOTES: MSWLF=Municipal Solid Waste (Subtitle D) Landfill; C/D=Construction/Demolition Landfill; I=Industrial Landfill.

SOURCES: Alabama Department of Environmental Management, 2003.

III. Waste Disposal Needs Evaluation

This section of the Solid Waste Needs Assessment update provides the basic data underlying the assessment of need. Using the latest population projections for each county developed by the University of Alabama's Center for Business and Economic Research (CBER), the WARC has compiled a general analysis of business trends within the region and an assessment of the current permitted waste disposal capacity within the state that is available to each county, based on the information contained in Table 1 and Table 2 in the previous section. The population projections compiled for this study will be used to estimate daily future waste generation rates for each county. The resulting daily waste generation rates will be compared with the permitted waste disposal capacity in an attempt to identify any current or projected unmet need for each county. Although every reasonable effort has been made to compile the best available information for this assessment, it is important to note that the data is subject to numerous assumptions that impose severe limitations on the accuracy and reliability of the conclusions reached in this document.

A. Population Trends Analysis

In order to begin evaluating current and future household waste generation rates and factors, current and projected population data is needed. Current population figures can then be applied to total waste generation data for each county to derive a current per capita household waste generation factor. These factors can then be applied to population projections for each county to estimate potential future waste stream generation rates. While current and projected population figures are available for each county, reliable figures regarding the amount of household waste generated by each city and county are not.

The 12 regional councils agreed to utilize data from the 2000 U.S. Census and county population projections developed by the CBER as a basis for estimating current and future waste generation rates. These data represent the most consistent and reliable population figures that are currently available for analysis. The resulting population figures and projections for each county in the West Alabama Region are provided below in Table 3.

According CBER's population projections for 2010, the fastest growth rates will occur in Bibb, Hale, and Tuscaloosa Counties. Of these three counties Bibb County is projected to grow by 19 percent or more over the next decade, which is three times the projected growth rate of the region as a whole. Hale County is projected to grow by 10 percent, which is one and a half times the projected growth rate of the region as a whole. Tuscaloosa County is projected to grow by six percent or more over the next decade. Only Greene County is projected to decline in population over the next decade. Greene County's declining population is a continuance of the trend that has been evident over the last twenty years. The remaining three counties should experience slow rates of growth during the next ten years.

TABLE 3: Current and Projected Population in the West Alabama Region

County	2000 Population	2010 Projection	Projected Change
Bibb	20,826	24,861	19.37%
Fayette	18,495	18,795	1.6%
Greene	9,974	9,688	-2.87%
Hale	17,185	18,892	10.00%
Lamar	15,904	16,105	1.26%
Pickens	20,949	21,090	.67%
Tuscaloosa	164,875	175,547	6.47%
West Alabama Region Totals	268,208	284,978	6.25%

SOURCES: U.S. Census 2000 & University of Alabama Center for Business and Economic Research, 2003.

B. Business Trends Analysis

Population data and trends are only useful in developing factors for household waste generation rates. Local governments typically do not provide waste collection services to businesses and industries. Disposal services for most nonresidential waste are handled separately. In fact, many industries in the region operate their own landfills and provide their own waste transportation services. Furthermore, businesses and industries are under no requirement to track or report their waste collection and disposal practices. Therefore, even less data is available on nonresidential waste generation and disposal needs than exists for the residential waste stream.

Further complicating the analysis of nonresidential waste streams is the lack of available employment projections. Growth and decline in business and industrial waste cannot be factored using population data, because population growth or decline is not a reliable direct measure of growth and decline in the business sector. Without employment projections and waste stream data, no specific needs assessment of nonresidential waste disposal can be undertaken.

Alabama law requires each regional council to discuss the types of businesses that may be entering and leaving the region and the resulting impact such changes will likely have on waste volumes generated in the region. General information on business and industry trends within the West Alabama Region is provided in the region's Comprehensive Economic Development Strategy (CEDS), which covers all seven counties in the region and serves as the region's long-range economic development plan. The CEDS document for the West Alabama Region went through a major update in 2002. Major updates are required every five years. The project list in this document is updated annually.

The CEDS document contains a list of industrial plant closures between 1997 and 2003. The plant closure list in the 2002 CEDS identifies a total of 28 industrial plants that closed throughout the region over the past seven years. Of these plants, 10% were engaged in textile production. This includes 71% of the plants that closed in Fayette County, 60% of the plants that closed in Lamar County, 20% of the plants that closed in Bibb County, and 50% of the plants that closed in Greene and Pickens Counties. Tuscaloosa County is the most urbanized county in the region and, therefore, possesses more diversified economic bases than the rural counties. Historically, industrial employment in the rural counties was dominated by the textile industry.

For the most part, job losses in the textile industry have been replaced by expansion of the retail and service industries. Many of these new commercial sector jobs pay lower wages than the industrial jobs they replaced. Industrial job gains were achieved in the automobile-manufacturing sector. The construction of the Mercedes Benz plant near Vance added approximately 1,500 new manufacturing jobs to the region and resulted in the siting and construction of numerous suppliers. The Mercedes Benz plant is currently expanding and will employ an additional 2,000 workers in 2004. Many of the suppliers for Mercedes are also in the process of expanding, which will add more jobs in the region.

Generally speaking, the discussion above reflects the major business and industry trends in the West Alabama Region over the past decade. Since no detailed information regarding the composition of the waste stream for each industrial sector is available, it is difficult to say with any precision how these changes will affect the region's nonresidential waste stream.

C. Waste Generation Projections

As discussed in the previous section, the lack of employment data and volume-specific waste generation data for nonresidential uses makes it virtually impossible to generate any solid waste projections for businesses and industries in the region. Consequently, the focus of the analysis in this section is on residential waste projections.

Current and projected population data for each county in the region is contained in Table 3. Unfortunately, local data on current household waste generation rates within the region are not available. Most local governments in the region have no method of tracking that information and they are not currently required to do so.

In order to calculate a suitable household waste generation rate for Alabama, ADEM staff analyzed the total amount of waste generated within Alabama that was disposed of in municipal landfills within the state in 1999, 2001, and 2002. Data for 2001 was incomplete. The annual statewide disposal volumes for these years were averaged, divided by 365 (the number of days in a year), divided again by the state's 2000 population, and converted into pounds (multiplied by 2,000), resulting in an average per capita daily waste generation rate of 5.33 pounds. This factor represents a conservatively high per capita waste generation rate when compared to the national

daily average of 4.5 pounds and the Southeast region daily average of 4.9 pounds. However, it is reasonable to expect higher waste generation rates in Alabama, due to the limited availability of recycling programs as compared with other regions of the country. It should be noted that this statewide average rate also includes waste generated by businesses and industries that was disposed of in municipal landfills. Table 4 shows the current and projected 2010 daily household waste generation rates for each county in the West Alabama Region, based on the statewide average daily rate of 5.33 pounds (0.0027 tons) per person.

TABLE 4: Current and Projected Daily Household Waste Generation Estimates For Counties in the West Alabama Region (in total tons)

County	2000	2010 Projection	Projected Change
Bibb	56.23	67.12	19.36%
Fayette	49.94	50.75	1.62%
Greene	26.93	26.16	-2.86%
Hale	46.40	51.00	10.00%
Lamar	42.94	43.48	1.25%
Pickens	56.56	56.94	0.67%
Tuscaloosa	445.16	473.98	6.47%
West Alabama Region Totals	724.16	769.44	6.25%

NOTES Waste Generation Rate= 0.0027 tons per person

SOURCES: WARC analysis based on ADEM data, 2003.

D. Waste Disposal Capacity

Before an assessment of solid waste needs can be undertaken, it is important to know how much capacity for solid waste disposal is available. Unfortunately, solid waste disposal capacity may be virtually impossible to evaluate objectively for a number of reasons, as listed below.

1. All local governments in Alabama have the option of shipping their waste to municipal landfills in other states. Once that waste crosses the state line it becomes interstate commerce and is subject to federal laws that prohibit other states from restricting it. Therefore, the total available capacity of all Subtitle D landfills in every other state should be considered in any assessment of solid waste disposal needs. The task of collecting and compiling that information is far beyond the scope of this study. Consequently, the analysis in this report must be limited to available capacity within the

State of Alabama, which is a very conservative and potentially misleading estimate of solid waste disposal capacity.

2. When ADEM issues a permit for a landfill, it establishes a permitted maximum daily volume for the facility. The permit does not establish the ultimate volume capacity of a landfill. In reality, no current information is collected or available regarding the total remaining space at any landfill within the state. As a result, this study can only compare the existing and potential daily volume of waste generated by each county with the current daily volume of waste permitted at the landfills authorized to accept waste from the respective county.
3. Even if it were possible to know how much total solid waste disposal capacity currently exists at every landfill that a county is authorized to use, it is practically impossible to know how much of that disposal capacity can be assigned to any given county. Over the permitted lifespan of a landfill in Alabama, the owners may contract with any county within its permitted service territory to receive household waste. If a specific landfill owner decides to accept waste from a new government three years from now, the additional waste stream generated by the new government will reduce the remaining capacity available to the local governments it is currently contracted to serve. Even if it is possible to calculate the disposal volume that would be available to each county a landfill is permitted to serve (whether or not it is under contract to serve each of those counties), it is virtually impossible to assign a reasonable amount of capacity to local governments in other states. As noted above, Federal Interstate Commerce Law prevents individual states from imposing restrictions on interstate commerce, which may include waste delivered to Alabama landfills from local governments in other states. Likewise, local governments in Alabama enjoy the same protected right to deliver their waste to landfills in other states. That legal protection makes it virtually impossible to know how much landfill space at any landfill in Alabama or the rest of the country can be assigned to any specific local government.
4. Household waste is only one portion of the waste stream that enters a licensed landfill. As noted earlier in this study, private businesses contract separately for their waste collection and disposal services. Some businesses and industries operate their own landfills, which they may close, expand, or replace in the future. The lack of detailed information on nonresidential waste stream volumes makes it difficult to know how much of the remaining disposal capacity at any given landfill should be reserved for those sources of waste. In fact, the volume of household waste generated by local governments can vary significantly from year to year based on the level of recycling activity and the level of yard and/or construction debris generated within the community.
5. Finally, it is important to remember that any landfill may have space to expand its disposal capacity by adding new cells. Even if information on available disposal capacity for permitted landfill cells were available, it would not reflect the full future expansion potential of the landfill site.

All of these factors, and perhaps numerous others, have a dramatic and direct impact on the amount of disposal capacity that can reliably be assigned to any local government. In all reality, the task of calculating and assigning solid waste disposal capacity at a landfill may be more difficult and subject to greater potential error or misrepresentation than the task of quantifying the local waste stream. This solid waste needs assessment cannot presume to address each of these variables. Consequently, some basic assumptions are needed to simplify the task of determining the landfill's disposal capacity available to each county in the West Alabama Region.

First, the WARC must assume that local governments in the West Alabama Region that contract for solid waste disposal, have sufficient disposal capacity until 2010. If the contracts do not cover this period then the assumption is that the contracts can be extended. As these contracts near their expiration date the local government may need to seek new sources for their disposal needs.

Second, the WARC must assume that local governments within the region will only dispose of their waste at landfills permitted by ADEM to serve those governments (regardless of whether or not they currently contract with each landfill permitted to receive their waste). Although the courts have not tested the practice of establishing service territories by permit, it must be acknowledged within this needs assessment because local governments must follow current state law.

Third, the WARC must assume that permitted daily disposal volumes are an accurate reflection of current and future disposal capacity. This assumption is very weak, but no data regarding the ultimate disposal capacity volume for each permitted landfill are currently available.

Fourth, the WARC will assume that counties who do not have a Subtitle D landfill in their county do not have adequate capacity, regardless of their access to a Subtitle D landfill within the region or contracts with out-of-state facilities.

Fifth, the WARC must assume that the total daily capacity currently permitted by ADEM at each landfill today will still be available in 2010. Since no data is available on the actual volume capacity of each landfill, there is no objective way to determine how much of the current permitted capacity will or will not be available in future years.

Finally, the WARC must assume that one cubic yard of waste weighs 600 pounds (0.3 tons). While permitted volume for municipal (Subtitle D) landfills is measured by ADEM in tons, the permitted volumes for industrial and construction/demolition (inert) landfills are often measured in cubic yards. Therefore, some conversion factor is needed to equate the two measures. According to ADEM, one uncompressed cubic yard of waste weighs approximately 600 pounds. Most waste received by industrial and construction/demolition landfills is uncompressed.

Based on these general assumptions and the information in Table 1 and Table 2, the total permitted landfill capacity (in tons per day) for each county in the West Alabama Region is provided below in Table 5.

TABLE 5: Estimated Total Daily Solid Waste Disposal Capacity for Each County in the West Alabama Region (in total tons)

County	Municipal (Subtitle D) Landfills	Construction/Demolition (Inert) Landfills	Industrial Landfills	Total Disposal Capacity (In Tons/Day)
Bibb	0	20	0	20
Fayette	0	90	1	91
Greene	0	100	1.5	101.5
Hale	0	0	0	0
Lamar	0	18.5	7.5	26
Pickens	0	5	0	5
Tuscaloosa	1,500	988	154.56	2,642.56
Region	1,500	1,221.5	164.56	2,886.06

SOURCES: WARC analysis based on ADEM data, 2003.

E. Needs Assessment

The ultimate statutory objective of this Solid Waste Needs Assessment is to determine the degree to which each county within the West Alabama Region has adequate solid waste facilities and services to satisfy local needs. Given the extensive limitations on existing solid waste data, the lack of established legal precedent addressing the application of interstate commerce laws on the established solid waste permitting practices in Alabama, and the lack of dedicated funds to finance solid waste planning and data collection efforts, the statutory objective of this report may be virtually impossible to achieve. A comparison of Table 4 and Table 5 shows that Tuscaloosa County is the only county in the West Alabama Region that currently has the amount of municipal landfill storage capacity that it needs through the year 2010. However, that conclusion is based on the assumption that if a county does not have a Subtitle D landfill then it lacks the needed capacity, regardless of its accessibility to landfills in other regions and states. Before drawing any firm conclusions regarding solid waste management needs for any local government it is important to define the needs that should be addressed. Solid waste management needs are not limited to disposal capacity. Many local governments are as concerned about the potential future cost of solid waste disposal, landfill disposal capacity, the need for additional landfills, and the need for recycling programs and facilities.

Solid waste management is a critical issue affecting the future sustainability of our society and our economy. All of Alabama's 12 regional councils take these issues seriously and are united in their desire to participate in the solid waste planning process. Unfortunately, no dedicated funding is available to the regional councils to research and address these needs. Until such funding becomes available, the regions must rely on existing available data to satisfy their statutory obligations. Perhaps the current lack of dedicated funding and reliable data to support solid waste management planning is the most critical solid waste management need that can be documented by this report.

Based on the limited availability of data and the assumptions discussed in this report, the WARC concludes that there is a need for additional solid waste disposal facilities in the counties within the West Alabama Region.

Appendix A

Local Government Survey

Region 2 Solid Waste Management Needs Assessment

1. Name (City/County): _____
2. Address: _____
3. Where do you dispose of solid waste? _____
4. Does the local government transport waste to the landfill or is the transport contracted out to private firms? _____
5. If contracted, with whom do you contract? _____
6. What is the duration of the contract? _____
7. Are there any limitations on collection (min/max)? _____
8. What rate is charged for the collection of solid waste? _____
9. Are any of the wastes generated in your city/county disposed of outside of your county? _____
10. If so, where is the waste being disposed? _____
11. How much waste is being disposed outside of your county? _____
12. What rate is charged for the disposal of solid waste outside of your county? _____
13. Are there any transfer stations in your city/county? _____
14. If so, please give name(s) and location(s)? _____
15. Are there recycling programs/facilities in your city/county? _____
16. If so, please give name(s) and location(s)? _____
17. What type(s) of materials are recycled? _____
18. Are the recycling facilities publicly or privately owned? _____
19. What do you view as the most important issue(s) regarding the future of solid waste disposal in your city/county?

Appendix B

**Landfill Operator Survey
&
Addendum**

Landfill Operator Solid Waste Survey

Name: _____
Address: _____
Type: _____
Permittee: _____
Service Area: _____
Date Landfill was established: _____
Permit#: Permit Status: _____
Expiration Date: _____
Lat/Long: _____
Landfill Status: _____ Date Closed? _____
Volume of Intake: _____
Total Acres: _____
Acres filled: _____
% Filled: _____

Are there transfer stations in the county? _____

If so, where are they located? _____

Do the local governments transport wastes to the landfill or is the transport contracted out to private firms? _____

If contracted, with whom do you contract? _____

Are there recycling programs/facilities in your county? _____

If so, where are they located? _____

Are they publicly or privately owned? _____

Are any of the wastes generated in your county disposed of outside of your county? _____

If so, where is the waste being disposed and how much? _____

What rate is charged for disposal of solid wastes in your facility? _____

Approximately how long (expressed in years) until your landfill reaches capacity? _____

Landfill Operator Solid Waste Survey- Addendum

Name: _____

Address: _____

Type: _____

What governments do you serve? _____

Would your facility agree to accept waste from other governments? ☐ Yes ☐ No

What is the average daily volume of waste received at the facility? _____

Roughly what percent of that volume is generated by municipal/county contracts? _____

How much of the average daily volume received by your facility is from out-of-state sources? _____

Do you separate recyclable wastes from the waste received at your facility? ☐ Yes ☐ No

If so, what wastes do you recycle? _____

How much of the average daily volume received by your facility is inert waste? _____

Roughly what percent of your permitted landfill capacity is reserved for inert waste? _____

Is your facility permitted to receive hazardous or infectious wastes? ☐ Yes ☐ No

If yes, how much of the average daily volume received is comprised of hazardous/infectious waste?

Roughly what percent of your permitted landfill capacity is reserved for hazardous/infectious waste?
