

A county regional report prepared by the staff of the

SHELBY COUNTY  
SOLID WASTE  
NEEDS ASSESSMENT

ARLINGTON

BARTLETT

COLLIERVILLE

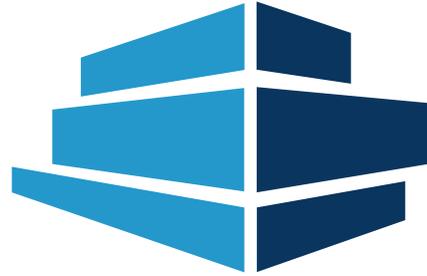
GERMANTOWN

LAKELAND

MEMPHIS

MILLINGTON

SHELBY COUNTY  
(UNINCORPORATED)



**MEMPHIS AREA**  
**ASSOCIATION *of***  
**GOVERNMENTS**  
PLANNING FOR A STRONGER FUTURE

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## INTRODUCTION

In an effort to coordinate and plan for safe, efficient solid waste disposal in the state, the Tennessee General Assembly enacted several pieces of legislation, which are compiled in Title 68, Chapter 211 of the Tennessee Code Annotated. To comply with the requirements of this chapter, all local governments must engage in specified planning and organizational activities (See the Solid Waste Management Act of 1991, T.C.A. §§ 68-211-801 through 68-211-874).

### **Regional Solid Waste Management Planning**

To begin implementation of the Solid Waste Management Act, counties were instructed to form solid waste regions (single or multi-county) and establish a solid waste board. Each region was required to formulate a 10-year plan for collection and disposal of solid waste in the area and submit this plan to the Tennessee Department of Environment and Conservation. Each municipal solid waste region must submit an annual progress report and 5-Year Plan Update (T.C.A. § 68-211-814). The plan, and any revised plan, submitted by each region must be consistent with the state solid waste plan and with all relevant state laws and regulations.

At a minimum, each plan must contain the following items:

- Demographic information and projections;
- Analysis of economic activity in the Region;
- Characterization of the waste stream;
- Projection of solid waste generation;
- Evaluation of the county and municipal waste collection systems;
- Evaluation of existing solid waste management facilities and capacities, and of any new or expanded facilities planned;
- Statement of solid waste management goals that are consistent with the state plan;
- Analysis of existing or potential waste flows within the region and between adjacent regions;
- Comparison of the projected volume of generated and imported waste with available and projected capacity to manage it, and identification of

potential shortfalls in that capacity; and

- Any additional information the commissioner may require.

In order that the regional planning effort is implemented on a solid foundation of relevant and objective knowledge of local conditions, the Act requires the Development Districts to coordinate, conduct and maintain a Needs Assessment for each solid waste region. Required revisions to the Needs Assessment report is every five (5) years.

## Section I

### DEMOGRAPHIC INFORMATION AND PROJECTION

*Provide a table and chart of the region's population during the past ten (10) years with a projection for the next five (5) years. Provide a breakdown by sub-table and sub-chart, or some similar method to detail county and municipality populations. Considering the trends, discuss the affect on the solid waste infrastructure needs over the next five (5) years.*

#### Population Trends in Shelby County

According to the U.S. Census (American Community Survey), Shelby County's 2016 estimated population projection is 959,361. The 2021 estimated population projection represents growth to 985,379 or an increase of 1.03%. As shown in Table 1.1 below, five-year population projections for each municipality indicate a positive-growth trend.

Conservative population projections often do not reflect economic, social and political influences and it becomes necessary to use caution when making budgetary decision in capital planning. Shelby County and its residing cities population reflects modest growth and routine decisions toward investing in their solid waste program may have significant success with modest incremental increases in their monetary investments.

Because of Shelby County Solid Waste Board's responsibility to review Annual Progress Reports and assess the report's findings, envisioning the need to expand solid waste services, their recommendations may prompt local official to seek funding priorities toward their recommending findings for the county. County leadership continue to express interest in the expansion of recycling services as an effort to divert waste from landfills.

Table 1.1 County/City Population and Projections

| Year | County Pop | Arlington | Bartlett | Collierville | Germantown | Lakeland | Memphis | Millington | Unincorp |
|------|------------|-----------|----------|--------------|------------|----------|---------|------------|----------|
| 2007 | 918,592    | 8,833     | 52,225   | 41,229       | 38,395     | 10,760   | 647,852 | 10,253     | 109,046  |
| 2008 | 921,610    | 9,727     | 53,893   | 42,566       | 38,545     | 11,316   | 647,531 | 10,227     | 107,803  |
| 2009 | 924,627    | 10,622    | 55,562   | 43,902       | 38,694     | 11,873   | 647,210 | 10,202     | 106,561  |
| 2010 | 927,644    | 11,517    | 57,231   | 45,239       | 38,844     | 12,430   | 646,889 | 10,176     | 105,318  |
| 2011 | 932,613    | 11,775    | 57,636   | 45,773       | 39,020     | 12,602   | 650,195 | 10,326     | 105,286  |
| 2012 | 937,763    | 12,032    | 58,042   | 46,308       | 39,196     | 12,774   | 653,500 | 10,476     | 105,435  |
| 2013 | 943,045    | 12,290    | 58,447   | 46,842       | 39,372     | 12,946   | 656,806 | 10,626     | 105,716  |
| 2014 | 948,437    | 12,548    | 58,852   | 47,376       | 39,548     | 13,118   | 660,112 | 10,776     | 106,107  |
| 2015 | 953,899    | 12,805    | 59,258   | 47,911       | 39,724     | 13,290   | 663,417 | 10,926     | 106,568  |
| 2016 | 959,361    | 13,063    | 59,663   | 48,445       | 39,900     | 13,462   | 666,723 | 11,076     | 107,029  |
| 2017 | 964,804    | 13,252    | 60,051   | 48,894       | 40,109     | 13,604   | 669,496 | 11,132     | 108,266  |
| 2018 | 970,212    | 13,441    | 60,439   | 49,342       | 40,318     | 13,746   | 672,269 | 11,188     | 109,468  |
| 2019 | 975,626    | 13,631    | 60,826   | 49,791       | 40,528     | 13,888   | 675,041 | 11,245     | 110,677  |
| 2020 | 981,022    | 13,820    | 61,214   | 50,239       | 40,737     | 14,030   | 677,814 | 11,301     | 111,867  |
| 2021 | 985,379    | 14,009    | 61,602   | 50,688       | 40,946     | 14,172   | 680,587 | 11,357     | 112,018  |

Sources: U.S. Census and ESRI Community Profile  
 Projections: Memphis Area Association of Governments

Figure 1.1

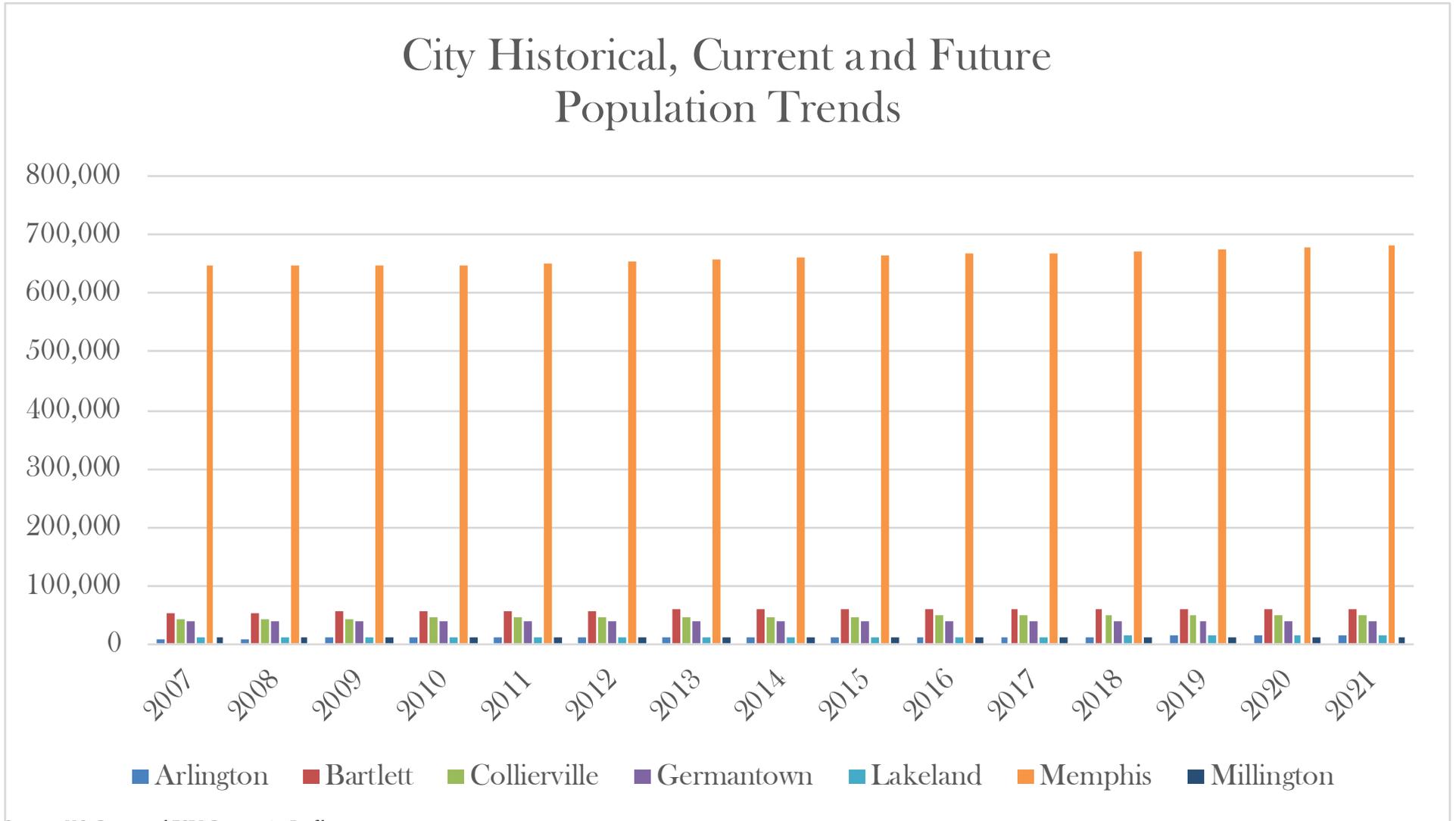


Figure 1.2

## County Population Trends



Sources: U.S. Census and ESRI Community Profile

## Section II

### ECONOMIC ACTIVITY WITHIN THE REGION

Provide a table and chart showing the region's economic profile for the county and its municipalities for the last ten (10) years with a projection for the next five (5) years. This can be accomplished by using the following economic indicators:

- Taxable sales, property tax generation, and per capita income
- Evaluation by break down of each economic sector
- County or municipal budgeting information
- Other commonly accepted economic indicators

### Employment and Unemployment Profile

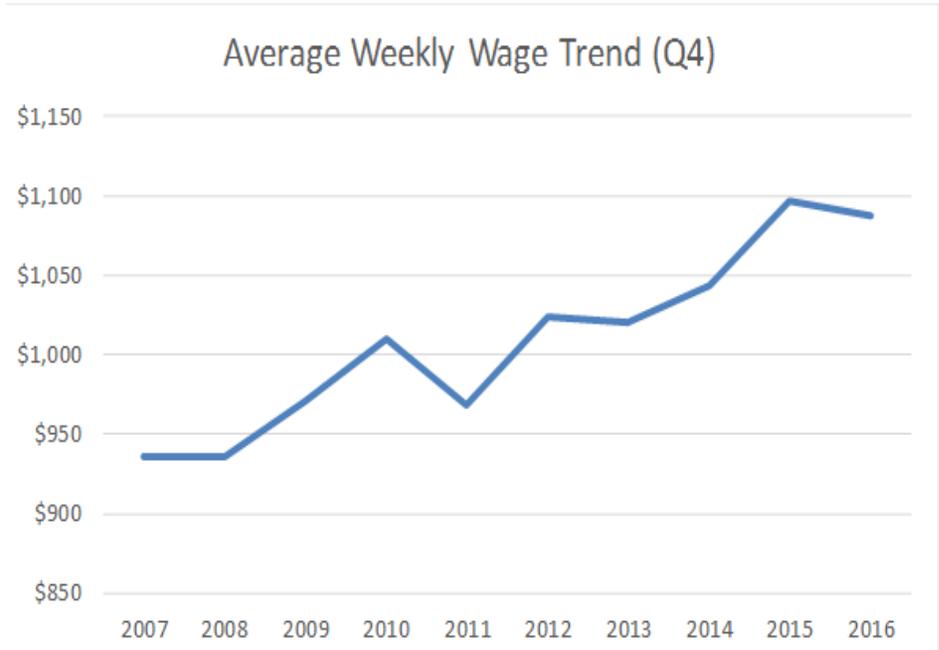
The state and county experienced a higher unemployment rate in recent years than the national average. From 2004 to 2013, the national average for unemployment was 6.89%. During the same time, the state and local unemployment rate average was higher at 7.38% and 8.55%, respectively. As with the national economy, the higher unemployment rate can be attributed to the Great Recession of 2009, however, the rate has dropped since in the county since its peak of 10.1% in 2009.

The unemployment rate is presently 7.8% according to the September 2016 Labor Force Estimates from the TN Dep. of Labor and Workforce Development. The unemployment rate has decreased over the last year. Lower unemployment is expected to continue with the county experiencing new economic development.

### Labor Wages

According to U.S. Bureau of Labor Statistics, Shelby County average weekly wages continue to trend up since 2007 (\$936) and is currently for the end of the fourth quarter of 2016 is at \$1,087. It is believed by many employers that a limited qualified labor force requires higher wages to compete for skilled workers.

Figure 2.1



U.S. Bureau of Labor Statistics

### Shelby County Median Household Income Indicators

Household incomes often reflect the purchasing power of a community. This data can provide insight in the potential waste stream for both recyclables and waste headed to landfills by understanding the varied waste types. Figure 2.2 reflects estimated median household incomes for each city and the Shelby County for 2016. Figure 2.3 provide growth rate for median household income for Shelby County and residing communities between 2010 and 2021.

Figure 2.2

Source: ESRI Community Profile

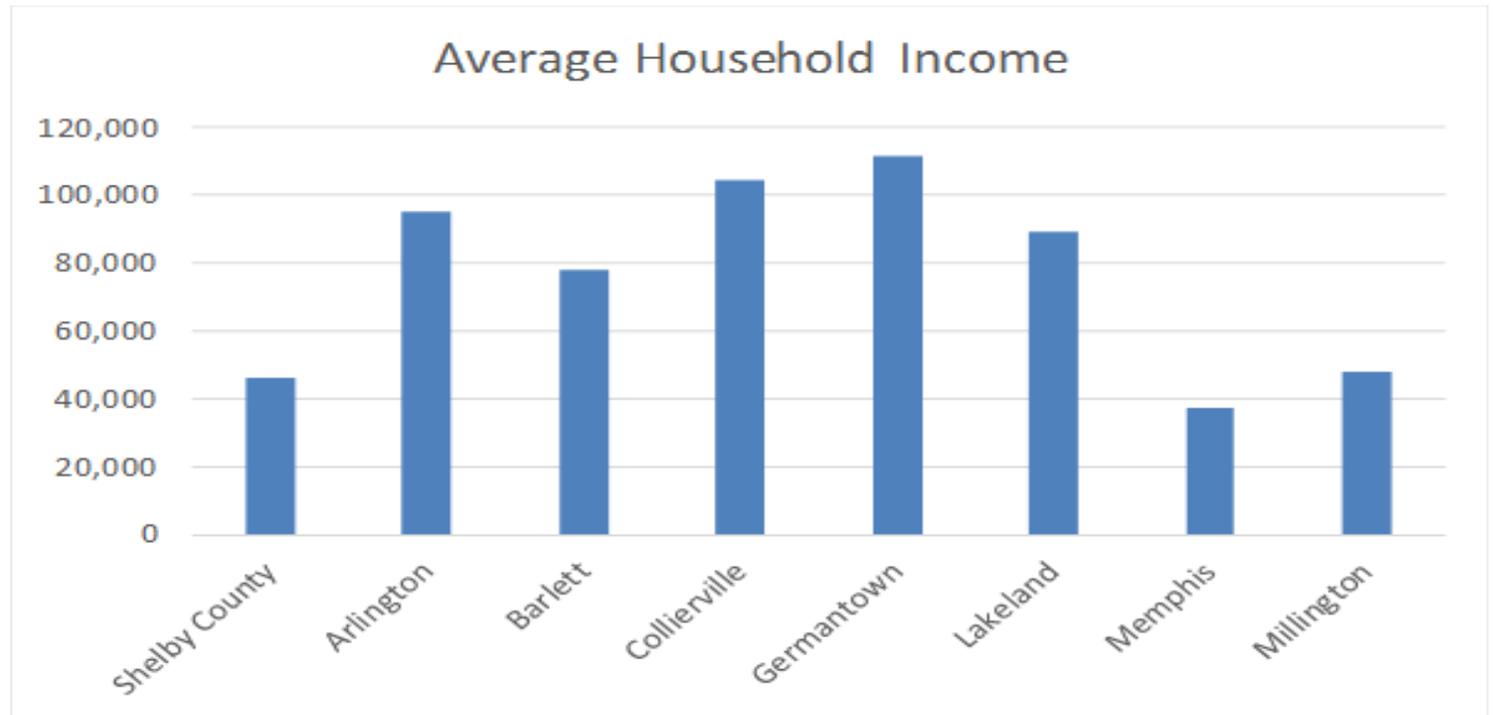
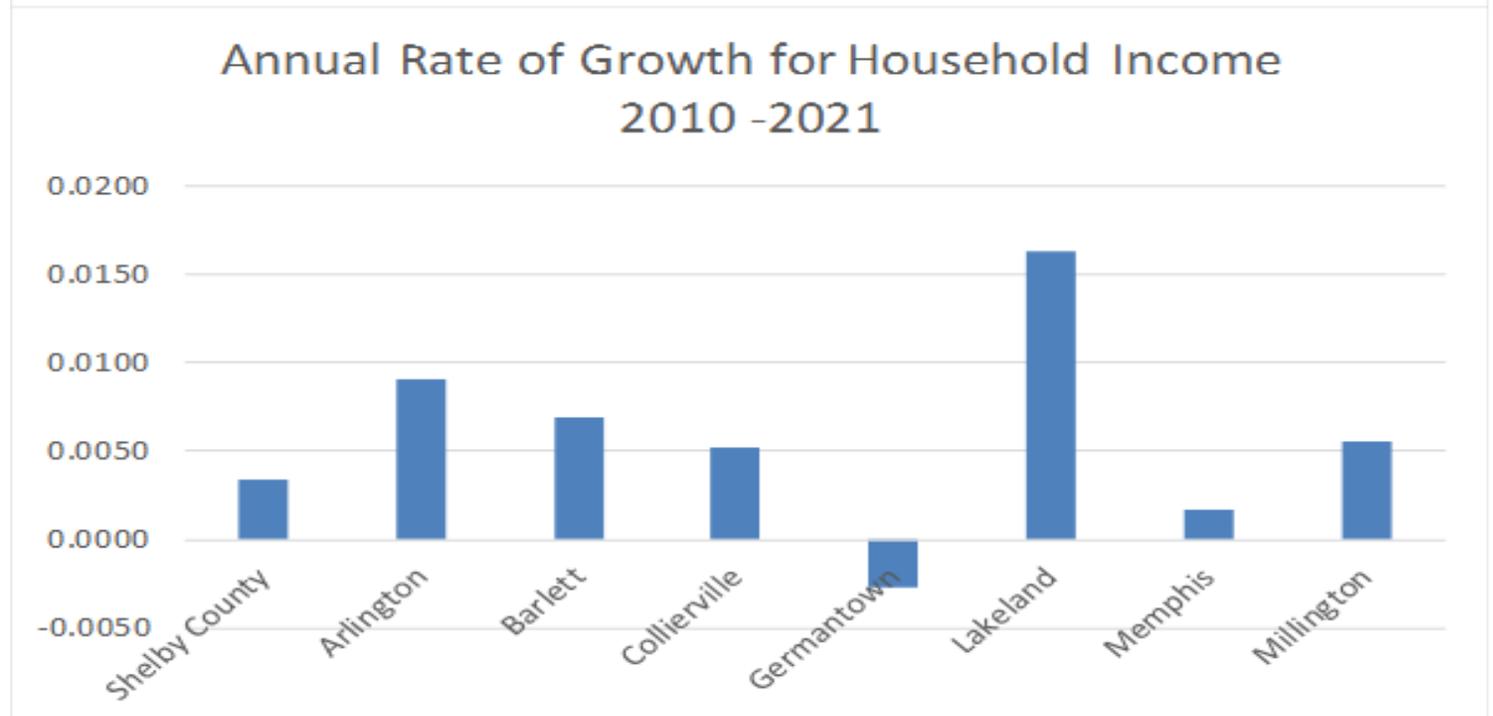


Figure 2.3

Source: ESRI Community Profile



## Section III

### SOLID WASTE STREAM CHARACTERIZATION

*Elaborate on the region's solid waste stream. Compare the current waste stream with trend anticipated over the next five (5) years, and discuss how this new total will be handled. Include in this discussion how problem wastes like waste tires, used oil, latex paint, electronics and other problem wastes are currently handled and are projected to be handled in the next five (5) years. What other waste types generated in this region require special attention? Discuss disposal options and management of these waste streams as well as how these waste streams will be handled in the future. Include in this discussion how commercial and industrial wastes are managed. Also, provide an analysis of any wastes entering or leaving the region, noting the source and amounts of such wastes.*

#### Current MSW Stream

In the most recent Shelby County Solid Waste Annual Progress Report (2016), the total Municipal Solid Waste (MSW) stream as defined by the Environmental Protection Agency *is more commonly known as trash or garbage—consists of everyday items we use and then throw away, such as product packaging, grass clippings, furniture, clothing, bottles, food scraps, newspapers, appliances, paint, and batteries. This comes from our homes, schools, hospitals, and businesses.* Shelby County reported the collection of 1,084,438 tons of MSW. This total of 836,957 tons was reported disposed in Class I landfills, and 786,753 tons being diverted outside the State of Tennessee.

The primary composition of the MSW stream originates from residential disposal. It is estimated that citizens make 37% of the MSW stream. The remaining MSW stream is estimated to be 27% commercial, 7% institutional, and 29% industrial. According to Shelby County Annual Progress Report for 2016 (Table 3.1) both North and South Shelby County landfills receives a fairly close even distribution of municipal solid waste.

Table 3.1

| Class I Disposal Sites                              |           |
|---|-----------|
| MSW deposited in North Shelby Co. Class I Landfill  | 342,522.0 |
| MSW deposited in South Shelby Co. Class I Landfill  | 494,435.0 |
| Total MSW deposited                                 | 836,957.0 |
| Source: Shelby County Annual Progress Report (2016) |           |

Waste streams for all classes will most likely to continue a steady upward trend. Most likely a major factor is the county and cities policies toward pro-development. Economic development success does drive new business growth and often has the potential of increase waste output for construction and debris (C&D). Table 3.2, the 2016 Shelby County Landfill Reports provide a breakdown of the amount and transport location of C&D for the county.

Table 3.2

| Class II, III, IV Disposal Sites                           | Reported Year (April 2016) |
|--|----------------------------|
| MSW deposited in North Memphis Class III Landfill          | 112,500.0                  |
| MSW deposited in Chandler Demolition Class III/IV Landfill | 0.0                        |
| MSW deposited in E-PLEX Class III IV Landfill              | 744,961.0                  |
| MSW deposited in Frayser Class III IV Landfill             | 41,792.0                   |
| Total MSW deposited  | 899,253.0                  |
| Source: Shelby County Landfill Report (2016)               |                            |

Table 3.3 provide a detailed break-down of all recycling for both private and public sectors. Development policies continue to favor higher densities in communities due to rising land values, declining availability of suitable development parcels and increase consumer choice for more urban lifestyles. Recycling may assume a greater importance and acceptance by urban dwellers as governments increase their recycling awareness programs to these densely populated enclaves.

Note that for many communities there is no accounting for recycling or waste diversion reported. Forecasting solid waste needs within the next five years is generally projected by but not solely projected by population growth. According to Table 1.1 it appears that a very modest population growth is expected for the region. Unless there is some unexpected major employer(s) to descend upon the region, current solid waste capacities provide sufficient abilities to accommodate future growth.

Table 3.3

| Recycling and Waste Diversion in Tons (Private and Public) |         |          |          |         |       |          |           |             |       |          |           |                 |           |
|--|---------|----------|----------|---------|-------|----------|-----------|-------------|-------|----------|-----------|-----------------|-----------|
| Commercial Recycling                                       | Metal   | Fiber    | Plastics | Glass   | Other | C&D      | Batteries | Auto Fluids | Tires | Misc.    | Recycling | Waste Diversion | Total     |
| E-PLEX   | 1,530.0 | 48.0     | 33.0     | 0.0     | 140.0 | 69,418.0 | 0.0       | 8.7         | 147.0 | 15,351.0 | 86,675.7  | 117,382.0       | 204,057.7 |
| Central Paper Stock  | 0.0     | 18,000.0 | 1,300.0  | 0.0     | 0.0   | 0.0      | 0.0       | 0.0         | 0.0   | 0.0      | 19,300.0  | 0.0             | 19,300.0  |
| A. Kaarchmer & Sons  | 1,440.0 | 0.0      | 0.0      | 0.0     | 0.0   | 0.0      | 0.0       | 0.0         | 0.0   | 0.0      | 1,440.0   | 0.0             | 1,440.0   |
| Heritage Crystal-Clean                                     | 27.1    | 0.0      | 0.0      | 0.0     | 0.0   | 0.0      | 0.0       | 3,903.5     | 0.0   | 0.0      | 3,930.6   | 0.0             | 3,930.6   |
| Memphis Wrecking   | 0.0     | 0.0      | 0.0      | 0.0     | 0.0   | 15,000.0 | 0.0       | 0.0         | 0.0   | 0.0      | 15,000.0  | 0.0             | 15,000.0  |
| 1-800 Got Junk?  | 59.0    | 21.0     | 0.0      | 0.0     | 14.0  | 0.0      | 0.0       | 0.0         | 5.0   | 0.0      | 99.0      | 3.0             | 102.0     |
| Jones Mulching   | 0.0     | 0.0      | 0.0      | 0.0     | 0.0   | 0.0      | 0.0       | 0.0         | 0.0   | 0.0      | 0.0       | 354.0           | 354.0     |
| Michael's Tree Service                                     | 0.0     | 0.0      | 0.0      | 0.0     | 0.0   | 0.0      | 0.0       | 0.0         | 0.0   | 0.0      | 0.0       | 178.0           | 178.0     |
| Nature's Earth Products                                    | 0.0     | 0.0      | 0.0      | 0.0     | 0.0   | 0.0      | 0.0       | 0.0         | 0.0   | 0.0      | 0.0       | 95.1            | 95.1      |
| Naval Support Act. Mid South                               | 0.0     | 0.0      | 0.0      | 0.0     | 0.0   | 0.0      | 0.0       | 0.0         | 0.0   | 0.0      | 0.0       | 0.1             | 0.1       |
| Yardworks  | 0.0     | 0.0      | 0.0      | 0.0     | 0.0   | 0.0      | 0.0       | 0.0         | 0.0   | 0.0      | 0.0       | 63,000.0        | 63,000.0  |
| Sub-total  | 3,056.1 | 18,069.0 | 1,333.0  | 0.0     | 154.0 | 84,418.0 | 0.0       | 3,912.1     | 152.0 | 15,351.0 | 126,445.2 | 181,012.2       | 307,457.4 |
| Municipal & County Recycling                               |         |          |          |         |       |          |           |             |       |          |           |                 |           |
| Arlington  | 13.7    | 0.0      | 0.0      | 0.0     | 0.0   | 60.0     | 0.0       | 0.0         | 0.0   | 719.0    | 792.8     | 300.0           | 1,092.8   |
| Bartlett   | 0.0     | 0.0      | 0.0      | 6.9     | 0.0   | 0.0      | 0.0       | 0.0         | 0.0   | 852.4    | 859.3     | 21,818.0        | 22,677.3  |
| Collierville   | 0.0     | 0.0      | 0.0      | 0.0     | 0.0   | 0.0      | 0.0       | 0.0         | 0.0   | 3,775.0  | 3,775.0   | 4,369.0         | 8,144.0   |
| Germantown   | 232.4   | 1,500.6  | 200.1    | 368.3   | 15.6  | 0.0      | 0.0       | 12.2        | 0.0   | 0.0      | 2,329.2   | 183.2           | 2,512.4   |
| Lakeland   | 12.3    | 0.0      | 0.0      | 0.0     | 3.6   | 0.0      | 0.0       | 0.0         | 0.4   | 793.1    | 809.4     | 2,566.2         | 3,375.6   |
| Memphis  | 434.0   | 9,702.0  | 1,591.0  | 3,940.0 | 0.0   | 0.0      | 0.0       | 0.0         | 0.0   | 0.0      | 15,667.0  | 25,786.0        | 41,453.0  |
| Millington1  | 25.3    | 43.9     | 25.3     | 25.3    | 0.0   | 0.0      | 0.0       | 2.5         | 5.3   | 0.0      | 127.5     | 10.0            | 137.5     |
| Shelby County  | 191.0   | 133.0    | 14.0     | 0.0     | 50.1  | 100.0    | 7.0       | 24.3        | 0.0   | 4.9      | 524.3     | 1,284.0         | 1,808.3   |
| Sub-total  | 908.8   | 11,379.5 | 1,830.3  | 4,340.5 | 69.3  | 160.0    | 7.0       | 38.9        | 5.7   | 6,144.4  | 24,884.5  | 56,316.3        | 81,200.8  |
| Combined Totals  | 3,964.9 | 29,448.5 | 3,163.3  | 4,340.5 | 223.3 | 84,578.0 | 7.0       | 3,951.0     | 157.7 | 21,495.4 | 151,329.7 | 237,328.5       | 388,658.2 |

Source: 2016 Municipal Solid Waste Planning Region Recycling Reports

## Waste Entering or Leaving the County

The majority of the county's 1,736,210 tons of MSW were transported from the municipalities to Shelby County's two major landfills in 2016 (BFI North and South Shelby Landfills). Some municipalities within the county contract with private haulers. Waste Pro, Republic Services, Waste Connections and Waste Management are private haulers contracted within the county by municipalities. A total of 37,719.10 tons of MSW was transported into the both Shelby County Landfills in 2016 from outside county sources. Table 3.4 provides a county-to-county break-down of the amount and to which landfill. Solid waste flow provides strong indication of the regional significance and importance for multi-jurisdictional cooperation and collaboration. Understanding each other's current and future needs will avoid an over saturation of landfills and their associated services.

In conclusion, waste management operations in Shelby County is fundamentally traditional for all jurisdictions. Communities choosing to contract their services are going through the bidding process primarily on cost and quality of service. Communities operating their own solid waste program, provides service management not much different than any other department in the country. This report notes no significant issues with either format.

Table 3.4

| From County                                 | Tonnage    | Shelby County Landfill      |
|---|------------|-----------------------------|
| Fayette                                     | 2,039.98   | (Shelby) BFI North Landfill |
| Fayette                                     | 6563.9     | (Shelby) BFI South Landfill |
| Lauderdale                                  | 2,354.27   | (Shelby) BFI North Landfill |
| Tipton                                      | 22,318     | (Shelby) BFI North Landfill |
| Tipton                                      | 170        | (Shelby) BFI South Landfill |
| Dyer  | 148.91     | (Shelby) BFI North Landfill |
| Gibson                                      | 174.09     | (Shelby) BFI North Landfill |
| Hardeman                                    | 6.19       | (Shelby) BFI South Landfill |
| Haywood                                     | 1,407.16   | (Shelby) BFI North Landfill |
| Haywood                                     | 2.85       | (Shelby) BFI South Landfill |
| Humphreys                                   | 1,239.33   | (Shelby) BFI North Landfill |
| Humphreys                                   | 122.51     | (Shelby) BFI South Landfill |
| Madison                                     | 114.41     | (Shelby) BFI North Landfill |
| Marshall                                    | 81.76      | (Shelby) BFI North Landfill |
| Marshall                                    | 964.24     | (Shelby) BFI South Landfill |
| Obion                                       | 11.5       | (Shelby) BFI North Landfill |
| Outside Shelby County                       | 29,889.41  | (Shelby) BFI North Landfill |
| Outside Shelby County                       | 7,829.69   | (Shelby) BFI South Landfill |
| Within Shelby County                        | 342,522.00 | (Shelby) BFI North Landfill |
| Within Shelby County                        | 494,435.00 | (Shelby) BFI South Landfill |
| Source: TDEC Solid Waste Origin Report 2016 |            |                             |

## Five-Year Waste Stream Projection

Table 3.5 and Table 3.6 represents a five-year projection for MSW for residential and non-residential development. Based upon modest county population and labor force growth, it appears that Shelby County and its municipalities will continue its current ability to manage each of the solid waste streams. Any unforeseen natural or man made disaster could challenge both the county and cities' abilities to manage any significant increase in C&D.

Table 3.5

| Shelby County Five-Year Per Capita MSW Rate of Change Population(Tons) |            |               |
|--|------------|---------------|
| Year   | Population | MSW (Tonnage) |
| 2016   | 957,457    | 1,084,438     |
| 2017   | 962,436    | 1,090,077     |
| 2018   | 967,440    | 1,095,745     |
| 2019   | 972,471    | 1,101,443     |
| 2020   | 977,528    | 1,107,171     |
| 2021   | 982,611    | 1,112,928     |
| 2022   | 987,721    | 1,118,715     |

Source: ESRI Community Profile  
Source: Shelby County Landfill Report (2016)

Table 3.6

| Shelby County Five-Year Economic Sectors MSW Projected Growth Employment(Tons) |                        |                        |                        |                        |                        |                        |                        |
|--|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| Economic Sectors   | 2016 Employment (Tons) | 2017 Employment (Tons) | 2018 Employment (Tons) | 2019 Employment (Tons) | 2020 Employment (Tons) | 2021 Employment (Tons) | 2022 Employment (Tons) |
| Commercial   | 69,305 (292,789)       | 69,513 (293,676)       | 69,721 (294,557)       | 69,931 (295,441)       | 70,140 (295,441)       | 70,351 (296,327)       | 70,562 (297,216)       |
| Institutional  | 58,652 (75,911)        | 59,414 (76,898)        | 60,187 (77,898)        | 60,969 (78,910)        | 61,762 (79,936)        | 62,565 (80,176)        | 63,378 (81,218)        |
| Industrial   | 50,772 (314,487)       | 50,467 (312,600)       | 50,165 (310,724)       | 49,864 (308,860)       | 49,564 (207,007)       | 49,267 (305,165)       | 48,971 (303,334)       |

Source: ESRI Community Profile  
Source: Tennessee Department of Environment and Conservation  
Source: U.S. Bureau of Labor Statistics

## Materials in MSW

There exist no study or analysis of the characterization (types) of MSW within Shelby County. The U.S. Environmental Protection Agency has determined at the national level the following distribution of MSW types. Similarities in the various amounts by type of materials may be found in landfills for Shelby County.

*Total MSW generation in 2014 was 258.5 million tons. Organic materials such as paper and paperboard, yard trimmings and food continued to be the largest component of MSW. Paper and paperboard accounted for over 26 percent, and yard trimmings and food accounted for another 28.2 percent. Plastics comprised about 13 percent of MSW; rubber, leather, and textiles accounted for over nine percent; and metals made up nine percent. Wood followed at over six percent, and glass over four percent. Other miscellaneous wastes made up approximately three percent of the MSW generated in 2014.*

Source: U.S. Environmental Protection Agency: Advancing Sustainable Materials Management: 2014 Fact Sheet (November 2016)

## Section IV

### REGIONAL COLLECTION SYSTEMS

*Describe in detail the waste collection system in the county and each municipality, including a narrative of the life cycle of solid waste from the moment it becomes waste (loses value) until it ceases to be a waste by becoming a useful product, residual landfill material or an emission to air or water. Label all major steps in this cycle noting all locations where wastes are collected, stored or processed along with the name of operators and transporters for these sites.*

#### Regional (County/City) Solid Waste Management

Waste management is regulated under Subtitle D of the Resource Conservation and Recovery Act (RCRA). The primary goal of RCRA is to encourage solid waste management practices that promote environmentally sound disposal methods and maximize the use of materials recovered from waste and foster resource conservation. The U.S. Environmental Protection Agency (U.S. EPA) implements RCRA.

RCRA Subtitle D strongly encourages states to develop and adopt statewide solid waste management plans that attempt to assess solid waste generation and management within the state and the state's anticipated direction toward managing its waste under a specific time schedule.

Municipal and county governments historically led the way to coordinate and ensure that a collection system for refuse, recyclables, and landscape waste is in place for municipal and county residents. Governments offer a wide range of services from curbside collection to drop-off services; contract for services partially or entirely to nonprofit or for-profit service organization; or have residents privately arrange for services. Four common types of contractual arrangements typically used for collection within cities and counties exist:

**Municipal/County service.** Municipal/county staff collect waste with municipal/county owned equipment.

**Municipal/county contract.** One or more private haulers operate under contract to the municipality/county. The municipality/county collect fees or taxes, then pays the waste hauler(s) for contracted services.

**Franchise contract.** The municipality grants or sells hauling privileges (franchise) to one or more private haulers for waste collection services in the municipality/county. The service provider collects the fees from the customer (residents/businesses).

**Private contract.** Under private contract collection, the individual resident or business contracts directly with the private waste hauler for waste collection services. The only involvement by the government is the licensing of the solid waste hauler.

Table 4.1 describes how the county region total waste stream is managed currently and expected management practice for the next 5 years. Shelby County, Arlington, Bartlett, Collierville, Germantown, Lakeland, Memphis, & Millington are listed separately. Because of the use of the same solid waste infrastructure, the operations of those communities contracting their services to a vendor or the communities choosing to operate their solid waste program in-house, is not significantly different.

Table 4.1

| Jurisdictions        | Solid Waste and Recyclable Stream Collection   | BOPAE & Recyclables<br>(Batteries, Oil, Paint, Antifreeze and Electronics)   | Other Problem Waste Types |
|----------------------|--|--|---------------------------|
| <b>Shelby County</b> | All unincorporated county households privately contract solid waste collection. The HHW facility is operated by Shelby County with the financial support of Arlington, Bartlett, Collierville, Germantown, Lakeland, Memphis, Millington, and Shelby County. Household waste final destination is unknown for unincorporated residents because of individual preference.   | 1. Shelby County receives BOPAE for the unincorporated count and cities. Residents can bring up to 15 gallons and/or 100 lbs. of materials. Terms for frequency of use.  | None to note              |
| <b>Arlington</b>     | The town competitive bid contract for all curb side solid waste and recyclable collection with Waste Pro for 3,982 households. Scheduled weekly pickups and special by request pickup included. Final destination of collected waste is sent to the landfill is primarily North Shelby Landfill.   | 1. Only provide a semi-annual local collection of hazardous materials. City adheres to county HHW policy.  | None to note              |
| <b>Bartlett</b>      | City collects all solid waste materials for 21,243 households and provide three (3) commercial and residential recycling drop-off centers. Scheduled weekly pickups and special by request pickups included. North Shelby Landfill is the primary final destination for the city's solid waste.  | <ol style="list-style-type: none"> <li>1. The city uses the county's HHW site and adheres to county policies. No annual city collection of HHW.</li> <li>2. Bartlett offers three (3) recycling centers: <ul style="list-style-type: none"> <li>• 5250 Shelter Run Lane</li> <li>• 5890 Stage Road</li> <li>• 7684 Hwy 79</li> </ul> </li> <li>3. Received recyclable materials are transported to Re-Community in Memphis, TN by the Town of Bartlett.</li> </ol> | None to note              |
| <b>Collierville</b>  | Town currently collects all solid waste materials from 100% of the town's 16,758 households. Scheduled weekly pickups and special by request pickup included. Waste Pro offers back door trash pick-up at additional consumer cost. The city has contracts with Waste Pro and BFI Waste Systems to transport collected waste materials from Collierville to the South Shelby landfill. In addition, Waste Management and Waste Connection uses their transfer station to further move Collierville's waste to Mississippi landfills. | <ol style="list-style-type: none"> <li>1. The city uses the county's HHW site and adheres to county policies. No annual local collection of HHW.</li> <li>2. Recyclables are transported to Re-Community in Memphis, TN by the Town of Collierville.</li> </ol>  | None to note              |
| <b>Germantown</b>    | City currently contract for the collection all solid waste materials from 100% of the town's 14,910 households. Scheduled weekly pickups and special by request pickup included. Waste Pro offers back door trash pick-up at additional consumer cost. The city has contracts with Waste Pro Germantown to the South Shelby landfill.  | <ol style="list-style-type: none"> <li>1. The city uses the county's HHW site and adheres to county policies. No annual local collection of HHW.</li> <li>2. Electronics and used oils are collected locally.</li> <li>3. Recyclables are transported to Re-Community in Memphis, TN by Waste Pro.</li> </ol>  | None to note              |
| <b>Lakeland</b>      | Competitive bid contract with Republic Service for all solid waste services providing curb side pick-up for 4,724 households. Residents can with city permission opt out of city collection services. Scheduled weekly pickups and special by request pickup included. Recyclables are collected twice a month by Republic Service.  | 1. The city uses the county's HHW site and adheres to county policies. No annual local collection of HHW.  | None to note              |

Table 4.1 Cont.

| Jurisdictions     | Solid Waste and Recyclable Stream Collection   | BOPAE & Recyclables<br>(Batteries, Oil, Paint, Antifreeze and Electronics)   | Other Problem Waste Types |
|-------------------|--|--|---------------------------|
| <b>Memphis</b>    | City currently collects all curb side solid waste pick up and recyclables for 257,238 households. Scheduled weekly pickups and special by request pickup included. Final destination of collected solid waste is both North and South Shelby Landfills   | <ol style="list-style-type: none"> <li>1. The city uses the county's HHW site and adheres to county policies. No annual local collection of HHW.</li> <li>2. Memphis transports recyclables to Re-Community from four (4) additional drop-off centers by the City of Memphis: <ul style="list-style-type: none"> <li>• Mud Island Drive @ north entrance</li> <li>• Moore Ed, 300 yards off Germantown Pkwy.</li> <li>• 3910 Ridgeway, the city owns this facility, but managed by ReCommunity.</li> <li>• 3197 Farrisview Blvd</li> </ul> </li> </ol> | None to note              |
| <b>Millington</b> | City currently collects all solid waste for 4,275 households. Allied Waste collects on demand residential and commercial recyclable materials. Scheduled weekly pickups and special by request pickup included. North Shelby Landfill is the primary final destination for the city's solid waste. | <ol style="list-style-type: none"> <li>1. The city uses the county's HHW site and adheres to county policies. No annual local collection of HHW.</li> <li>2. The city has a drop-off center for recyclables located: <ul style="list-style-type: none"> <li>• 4658 Biloxi Ave</li> </ul> </li> </ol>   | None to note              |

Sources: ESRI Community Profile

Sources: Municipal Websites and staff contact

**ReCommunity** is major for profit recycling center committed to transforming waste into useful commodities. Communities are using this organization as one of the primary recipients of recyclable products.

## Section V

### SOLID WASTE MANAGEMENT INFRASTRUCTURE

*Provide organizational charts of each county and municipality's solid waste program and staff arrangement. Identify needed positions, facilities, and equipment that a fully integrated solid waste system would have to provide at a full level of service. Provide a scale county level map indicating location of all facilities including convenience centers, transfer stations, recycling centers, waste tire drop-off sites, used oil collection sites, paint recycling centers, all landfills, etc. Identify all current revenue sources by county and municipality that are used for materials and solid waste management. Identify any short comings in service and note what might be needed to fill this need.*

#### Shelby County

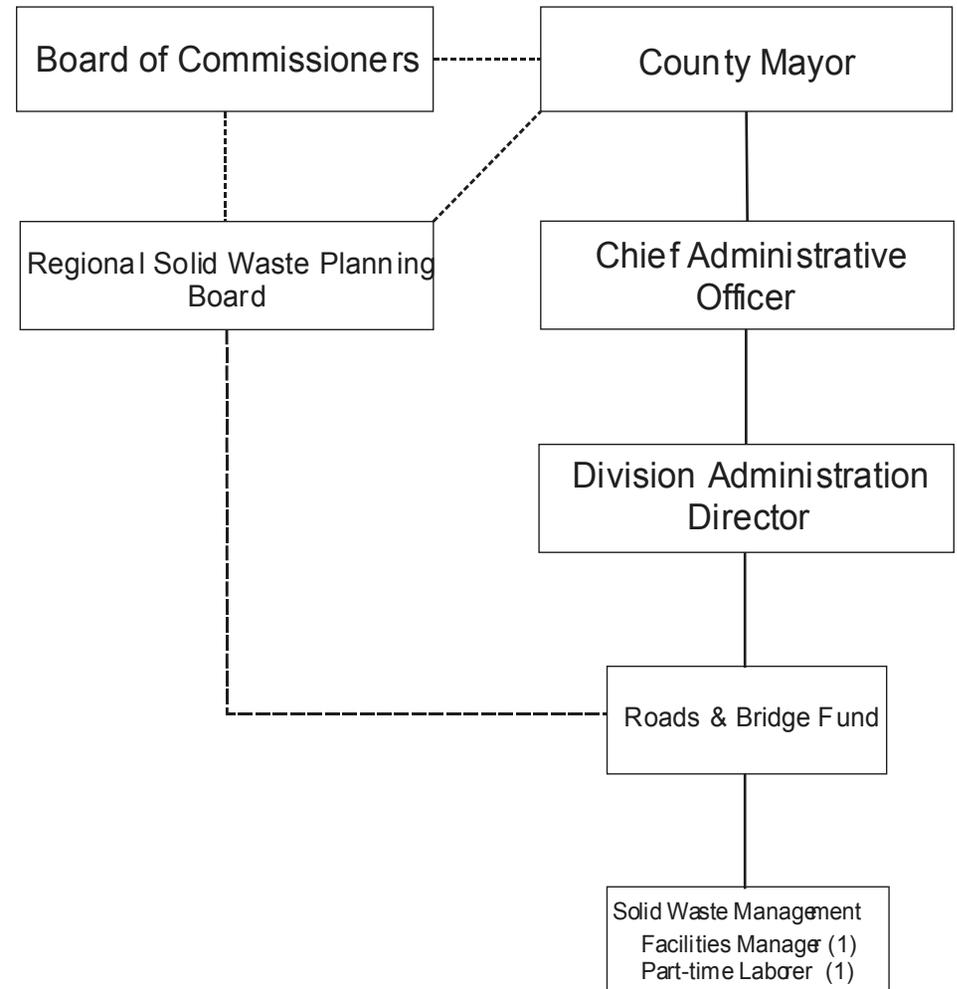
The partial organizational chart is provided below for operations and chain of command for the Shelby County Solid Waste Department. Shelby County operates under a strong county mayor government. The Board of Commissioners pass ordinances and a budget. The Board of Commissioners often must approve the Mayor's appointees to boards and commissions.

Shelby County has no formal solid waste division or department due to residents living in unincorporated Shelby County responsibility for the disposal of their household waste. Unincorporated Shelby County residents have options to either contract with a solid waste vendor or deliver their trash to a landfill. Shelby County has one full-time and one part-time employee managing the county's Household Hazardous Waste facility. The City of Memphis receives state funding for the HHW facility and sub-contracts with Shelby County operate and manage the HHW facility.

Shelby County, facilities and equipment consist of the following: As previously documented, Shelby County does not manage a solid waste operation and a capital equipment need does not exist.

Figure 5.1

### Shelby County Organizational Chart



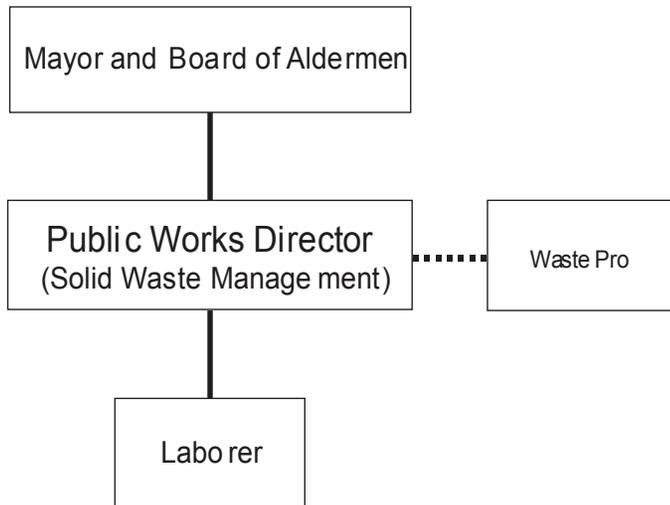
### The Town of Arlington

The Town of Arlington has no in-house solid waste activity and therefore has no staff. The solid waste contract with Waste Pro requires direct reporting to the Director of Public Works. The Director reports all activity of the solid waste vendor in his monthly reports to the Mayor and Board of Aldermen.

The Town of Arlington facilities and equipment consist of the following:  
 (1) Claw Truck

Figure 5.2

### Town of Arlington Organizational Chart



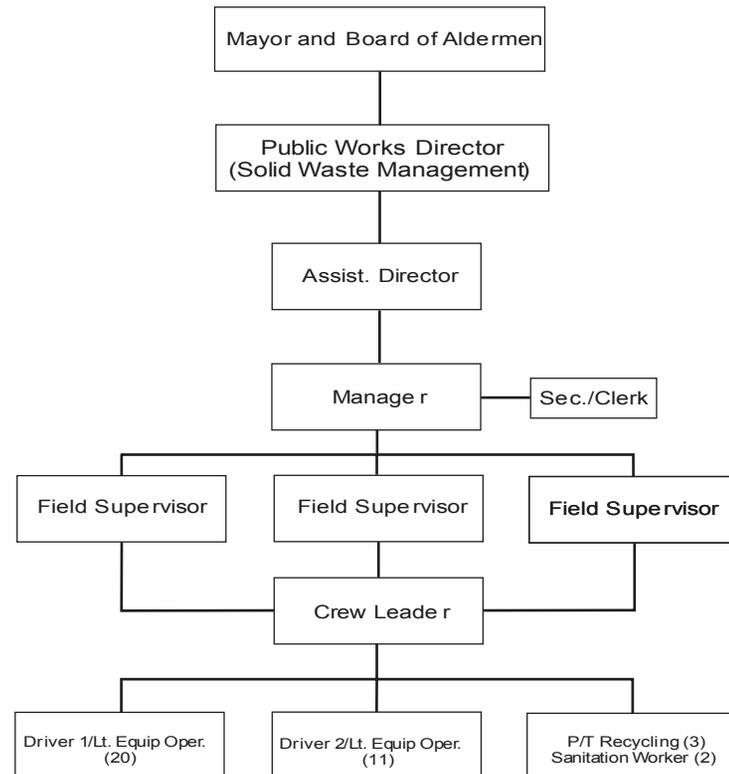
### The City of Bartlett

The City of Bartlett manages a full-service solid waste department with a total compliment of thirty-seven (37) full-time employees and five (5) part-time employee. The Public Works Director is directly responsible for the management of the city’s solid waste operation and reports directly to the Mayor and Board of Aldermen. The following straight line organizational chart represent the flow of management and communication for solid waste activities.

The City of Bartlett facilities and equipment consist of the following: 15 garbage packers, 2 mini packers, 13 knuckle booms, 5 dump trucks, 7 leaf machines, 4 cab truck tractors, 6 walking floor trailers, 2 rubber tire loaders, 2 roll off trucks, 13 recycling bins, 6 pick-up trucks, (1) 3,000 sq. ft. building and (1) 3,300 sq. ft. transfer/tipping floor building.

Figure 5.3

### City of Bartlett Organizational Chart



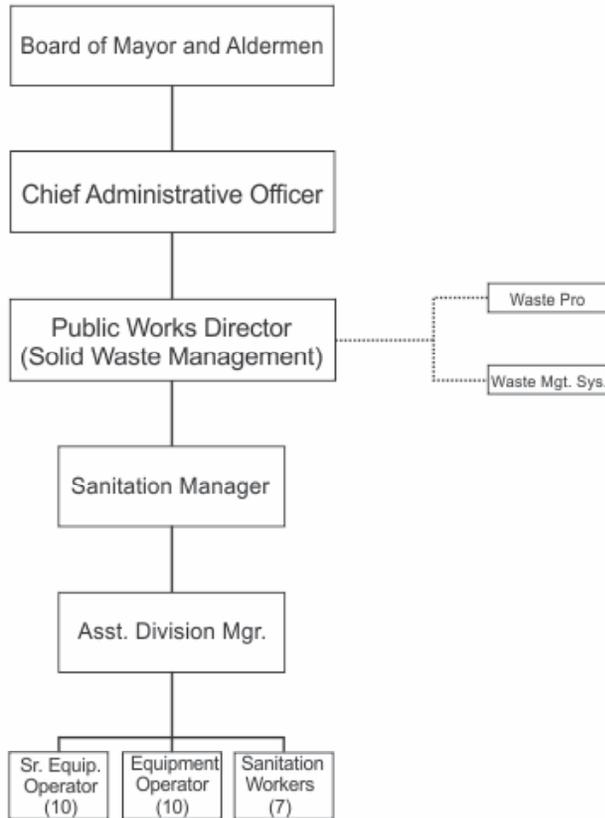
## The Town of Collierville

The Town of Collierville manages a full-service solid waste department with a total compliment of 30 full-time employees. The Public Works Director is directly responsible for the management of the city's solid waste operation and reports directly to the Mayor and Board of Aldermen. Solid waste vendors report directly to the Public Works Director. The following straight line organizational chart represent the flow of management and communication for solid waste activities.

The Town of Collierville facilities and equipment consist of the following: The City operates 4 automated garbage trucks, 4 automated recycle trucks, 3 rear loading garbage trucks, 4 brush trucks, 4-5 loose leaf vacuums.

Figure 5.4

### Town of Collierville Organizational Chart



## The City of Germantown

The City of Germantown has no in-house solid waste activity and therefore has no staff. The solid waste contract with Waste Pro requires direct reporting to the Community Service Coordinator, who is responsible for report development to the Neighborhood Service Manager. The Manager reports all activity of the solid waste vendor in his monthly reports to the Town Administrator, Mayor and Board of Aldermen.

The City of Germantown facilities and equipment consist of the following: The City of Germantown contracts its solid waste and recycling service, therefore no need for capital equipment.

Figure 5.5

### City of Germantown Organizational Chart



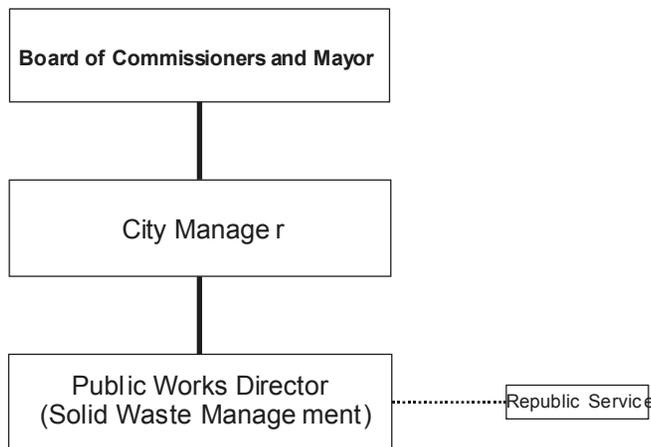
## The City of Lakeland

The City of Lakeland has no in-house solid waste activity and therefore has no staff. The solid waste contract with Republic Services requires direct reporting to the Director of Public Works. The Director reports all activity of the solid waste vendor in his monthly reports to the City Manager, Mayor and Board of Aldermen.

The City of Lakeland facilities and equipment consist of the following: The City of Lakeland contracts its solid waste and recycling service, therefore no need for capital equipment.

Figure 5.6

### City of Lakeland Organizational Chart



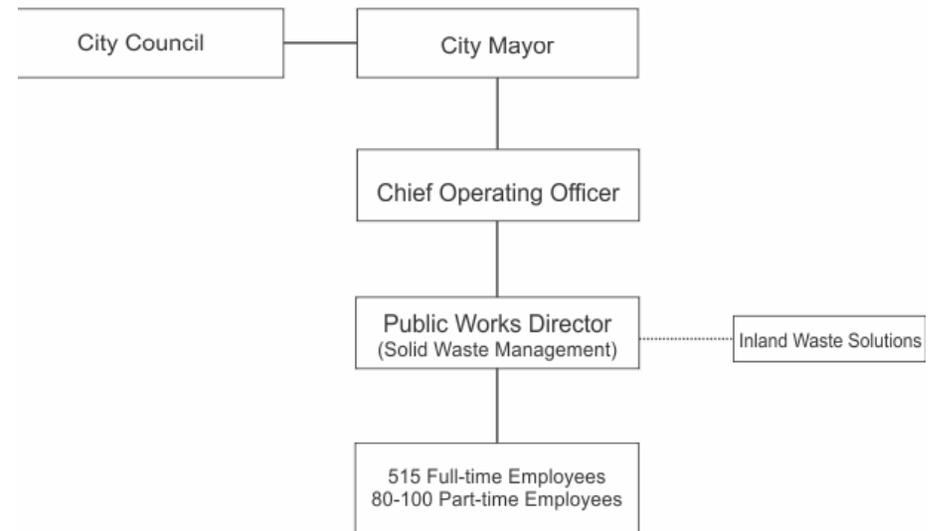
## The City of Memphis

The City of Memphis manages a full-service solid waste department. The Public Works Director is directly responsible for the management of the city's solid waste operation and reports directly to the Chief Operating Officer. Solid waste vendors report directly to the Public Works Director. The following straight line organizational chart represent the flow of management and communication for solid waste for the 515 full-time and 80-100 part-time employees.

The City of Memphis facilities and equipment consist of the following: 7 front end loaders and 32 transfer trailers

Figure 5.7

### City of Memphis Organizational Chart



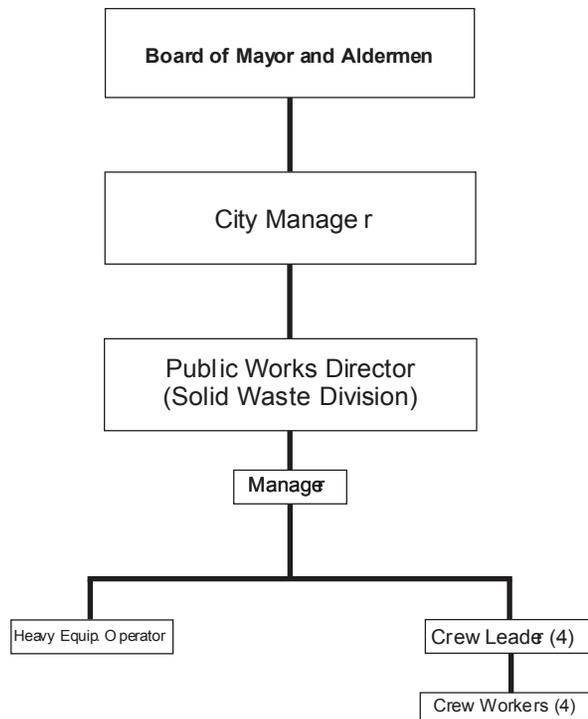
## The City Millington

The City of Millington manages a full-service solid waste department. The Public Works Director is ultimately responsible for the management of the city's solid waste operation and has a full-time manager overseeing the daily operation of solid waste activities. The Public Works Director reports directly to the City Manager and provides a monthly report to the Board of Mayor and Aldermen. The following straight line organizational chart represent the flow of management and communication for solid waste for the eleven (11) full-time employees.

The City of Millington facilities and equipment consist of the following: 2008 Ford F150 pickup, 2003 GMC Boom Truck, 2003 Sterling Rear loader, 2008 Ford F750 Boom Truck, 2008 International Rear Loader, 2007 International Box Truck, 2011 Ford F750 Boom Truck, 2013 International Rear Loader, (2) 30 Yd. Roll Off Containers for Recycling. There was no equipment request for 2017-2018.

Figure 5.8

### City of Millington Organizational Chart



As indicated by the organization charts of each community regardless if solid waste service is contracted or provided as a city service, one of the key components to recycling is an absence of a line item for community education. No organization is represented by a public affairs or public information officer with a primary responsibility to educate and inform the residential and business communities of the importance of recycling. Further discussion on a regional strategy will follow in **Section XI, Sustainable Goals Consistent with the State Plan.**

## Solid Waste and Recycling Revenue Sources (County/Municipalities)

Most communities have a solid waste program requiring the funding of the operation from outside sources apart from general funding. Placement of those operation funds in what is called an Enterprise Fund or some finance directors will label this account as a Special Fund, both serving the same purpose. The Municipal Securities Rulemaking Board define an Enterprise Fund as the following:

*A fund established by a governmental entity to account for operations of an enterprise activity. Enterprise funds generally are segregated as to purpose and use from other funds and accounts of the governmental entity with the intent that revenues generated by the enterprise activity and deposited to the enterprise fund will be devoted principally to funding all operations of the enterprise activity, including payment of debt service on securities issued to finance such activity. In some cases, however, the governmental entity may be permitted to use funds in an enterprise fund for other purposes and to use other funds to pay costs otherwise payable from the enterprise fund.*

Each county and city primarily will secure funding for a solid waste program from similar sources, but the most common are user or customer fees. Table 5.1 provides a listing of funding sources. Note the different labeling for each line item, but most of the terminology have similar meanings.

Table 5.1

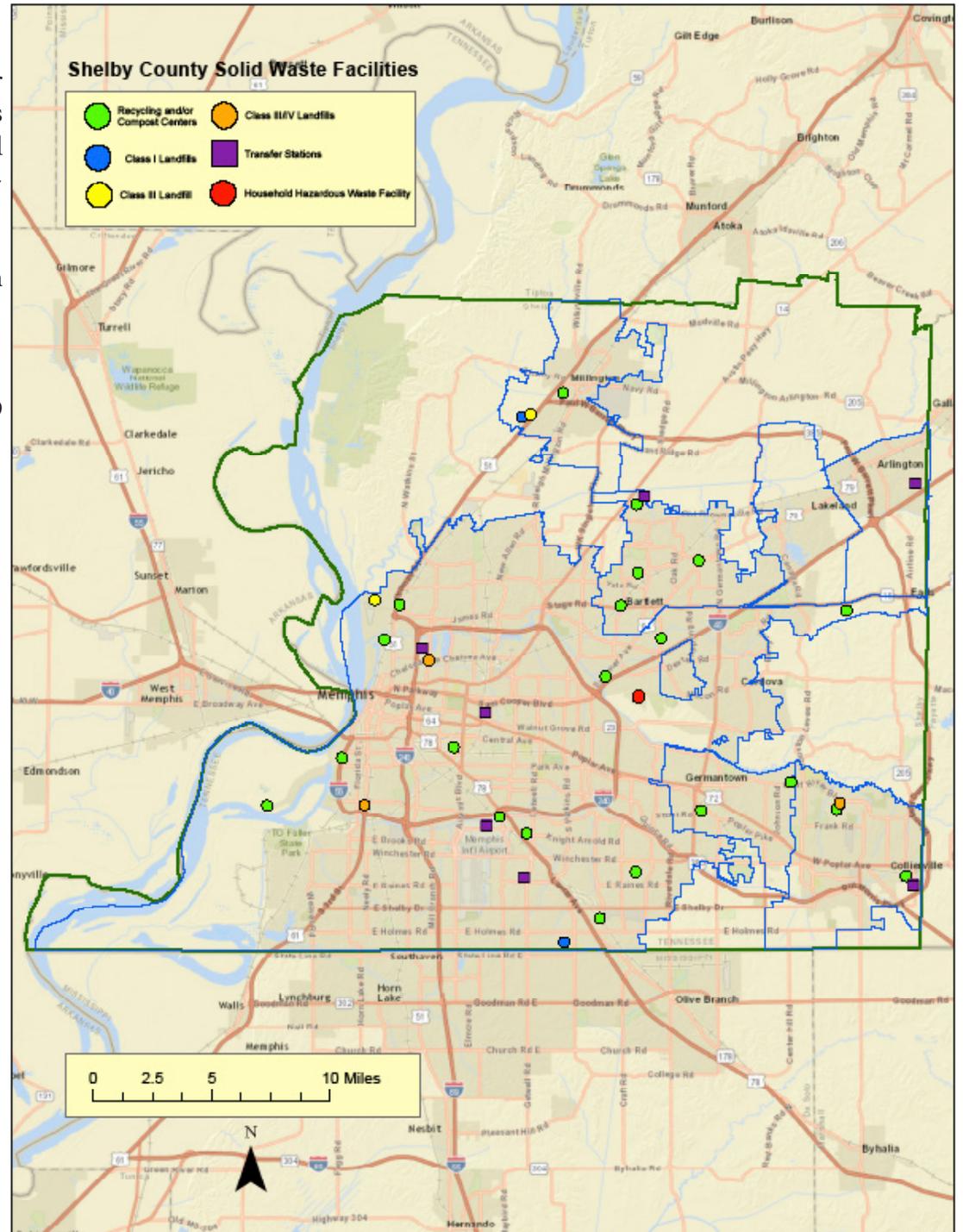
| <b>Solid Waste Funding Sources (Budget Line-item Classifications)</b> |                                   |                                |
|---|-----------------------------------|--------------------------------|
| <b>Shelby County</b>  | <b>Arlington</b>                  | <b>Bartlett</b>                |
| Charges for Service   | Fund Balance                      | TN Recycling Rebate            |
| Fines, Fees & Permits   | Refuse Collection                 | Sanitation Fees (Res./Comm.)   |
|   | Interest Earnings                 | Recycling Fees                 |
|   | Operating transfer from Gen. Fund | Carts (Residential/Commercial) |
|   |                                   | Special Sanitation Pick up     |
|   |                                   | Appliances                     |
|   |                                   | Other Revenue                  |
| <b>Collierville</b>   | <b>Germantown</b>                 | <b>Lakeland</b>                |
| TN Recycling Grant  | Fixed Service Fee                 | Charges for Service            |
| Solid Waste Collection Fee  | Other Revenues                    | Miscellaneous                  |
| Special Refuse Pick-up Fee  |                                   |                                |
| Composted Leaves  |                                   |                                |
| Public Auction  |                                   |                                |
| Cart Establishment Fee  |                                   |                                |
| Miscellaneous Refunds   |                                   |                                |
| Recycling Revenues  |                                   |                                |
| Donations   |                                   |                                |
| <b>Memphis</b>  | <b>Millington</b>                 |                                |
| Contributed from Fund Balance   | Residential Sanitation Fees       |                                |
| Local Taxes   | Discounted Forfeited              |                                |
| Use of Money and Property   |                                   |                                |
| Federal Grants  |                                   |                                |
| State Grants  |                                   |                                |
|   |                                   |                                |
| Sources: 2017-2018 Adopted and Proposed Budgets (City Websites)       |                                   |                                |

## Shelby County Solid Facilities Map

Shelby County has an inventory of solid waste landfills, transfer stations and recycling centers located throughout the county's footprint. Observation of the location of these facilities reveal that many of them are the result of parochial convenience within political boundaries.

Further discussion on a regional strategy will follow in **Section XI, Sustainable Goals Consistent with the State Plan.**

Figure 5.9



## **Section VI**

### **PUBLIC PARTICIPATION**

*Describe current attitudes of the region and its citizens towards recycling, waste diversion, and waste disposal in general. Where recycling is provided, discuss participation within the region. Indicate current and ongoing education measures to curb apathy or negative attitude towards waste reduction. Are additional measures needed to change citizen's behaviors? If so, what specific behaviors need to be targeted and by what means?*

#### **Current Attitudes Concerning Recycling, Waste Diversion, and Waste Disposal**

Shelby County officials currently demonstrates a significant amount of interest in recycling, waste diversion, and waste disposal by providing substantive public information to their residents and businesses. The County and member cities encourages and promote citizens to use the household hazardous waste (HHW) facility operated by Shelby County. Similar to most urban cities and counties, illegal dumping of hazardous waste materials, results in environmental and health danger to the public. Effective public and private information resources is ultimately a vital source of public education to reduce this threat. The Solid Waste Board strives to improve and encourage mitigation strategies for batteries, oils, paints, antifreeze, and electronics, (BOPAE) and household hazardous waste (HHW). Distribution of literature, posting signage, and/or public web sites appears common forms of public communication. Common concerns by citizens and landfill users are costs associated with tipping fees, manpower, and equipment. Resolution to citizen complaints concerning landfills most often receive investigation by local governments and Shelby County Solid Waste Board.

#### **Education Measures**

Based on city and county budgets, community education primarily receives funding for littering through the state's Litter Grant program. A few cities provide in-kind contribution, such as personnel tasked with public appearances to schools and civic groups discussing the taxpayer cost of littering. There appears no line item for community education for recycling from either the general fund or the solid waste enterprise fund. The following section narrates programs that were conducted in 2016 by both public and private organization educating the public about recycling and littering. All information was obtained from city and county websites.

Table 6.1

| Sponsor              | Education Program Narrative   |
|----------------------|---|
| Town of Arlington    | <p>Arlington provides its citizens with a website link to inform residents of the Hazardous Household Waste facility operated and located within Shelby County. This measure is an on-going public information tool.</p> <p>Arlington used both an informational brochure and the town's website to announce the transition of their recycling container to the 96 gallon. Also, both information mediums helped citizens understand the town's dedication and position for recycling. Both programs target the general public, while the brochures (5,000) targeted households.</p>                |
| City of Bartlett     | <p>The Bartlett Channel, a public access cable channel provide spot announcements concerning HHW and recycling. This channel targets only cable subscribers. For Your Information (FYI) is shown eight times per day.</p>   |
| Town of Collierville | <p>The Town of Collierville Environmental Commission has the primary task of promoting recycling as well as other environmental issues in the town. This eight member commission plan and implement educational resources for recycling and at the same time make recommendations to elected officials for improving recycling efforts. Recycling brochures are designed and recommended for distribution to community residents. In 2016, the Commission recommended the redesign and message for the recycling brochure. Their target audience is for the general population of Collierville.</p> |

| Sponsor          | Education Program Narrative   |
|------------------|---|
| City of Lakeland | <p>The City of Lakeland uses their cable public access channel to forward their message about recycling. In addition to their public access channel, the city uses their website to promote the city's solid program. They entitled it 3-N-1 Services (Garbage-Recycle-Yard). This city-wide web base message promoted education for trash pick-up, recycling instructions and benefits and yard material pick-up. Lakeland also promote the following solid waste issues on their website:</p> <ul style="list-style-type: none"> <li>• Adopt-A-Street (Litter abatement program)</li> <li>• Community Clean Up Days</li> <li>• Free Firewood</li> <li>• FOG: Fats, Oils, Grease</li> <li>• Keep Lakeland Beautiful</li> <li>• Litter, Storm Water Management</li> </ul> |

| Sponsor            | Education Program Narrative  |
|--------------------|--|
| City of Memphis    | <p>Distribution of information and education about solid waste and recycling is found on the city's website, Twitter, Facebook and the cable public access channel 19. Memphis outreach is provided in the following primarily by Memphis City Beautiful and Clean Memphis. Their goals is to educate and provide hands on involvement to keep Memphis clean through litter abatement, beautification and recycling. The following programs are under their guidance:</p> <ul style="list-style-type: none"> <li>• Beautiful Your School Contest</li> <li>• America Recycles Day</li> <li>• Faith In Action Memphis Cleanup</li> <li>• Sustainable Schools Challenge</li> <li>• Nonconnah Corridor Education and Engagement Program</li> <li>• Recycling</li> <li>• Tiger Football Venue for Recycling Education and Public Awareness</li> </ul> |
| City of Germantown | <p>Germantown's solid waste and recycling efforts are guided by their twelve member Environmental Commission. The Commission advises the elected official on issues regarding the general environmental welfare of the community. Education for recycling primarily is provide on the city's website. The City promotes the following event:</p> <ul style="list-style-type: none"> <li>• Amnesty Dumpster and Recycling Day - Collection of unwanted items not picked up by the solid waste vendor. Electronic pickup and paper shredding is provided.</li> <li>• Public education is primarily provided on city's website, social media, direct mail and public information channel.</li> </ul>  |

| Sponsor            | Education Program Narrative   |
|--------------------|---|
| City of Millington | <p>The City of Millington provides education primarily through their city's website. The majority of information presented is general regarding the city regulation for waste pick-up.</p>  |
| Shelby County      | <p>The County's website serves as the primary source of public education. The county's website features backyard compo sting, Clean Builders Guide (recycling and litter control) and Household Hazardous Waste control and disposal. The county has developed a Clean Builders Brochure available at various county sites.</p> |

Governments' responses to recycling are varied and may only be of value based upon federal and state mandates. Because local governments are faced with a multitude of issues that have a direct effect on the electorate, their priorities are driven toward issues such as public safety, quality streets/roads, sanitation (sewer) and education. Their budgets provide a snapshot of their financial priorities by the funding approved for each line item.

## Section VII

### REGIONAL SOLID WASTE REDUCTION GOAL

*The Solid Waste Management Act of 1991 requires all regions to reduce the amount of waste going into Class I landfills by 25%. Amendments to the Act allow for consideration of economic growth, and a “qualitative” method in which the reduction rate is compared on a yearly basis with the amount of Class I disposal.*

*Provide a table showing the reduction rate by each of these goal calculation methodologies. Discuss how the region made the goal by each methodology or why they did not. If the region did not meet the 25% waste reduction goal, what steps or infrastructure improvements should be taken to attain the goal and to sustain this goal into the future.*

#### Variables Affecting Regional Waste Reduction Efforts

According to Tennessee Department of Environment and Conservation (TDEC) officials, challenges to Shelby County meeting all four waste reduction goals is due to the inaccuracy of base year datum. For this reason, Shelby County one of the four goals are achieved. There are several reasons these figures are inaccurate.

1. Most disposal contracts in the 1990’s established fees based on cubic yards and reporting tonnage figures required estimating how many cubic yards of waste weighed a ton.
2. The landfill operators depend on haulers to accurately report the origin of the MSW. There was no system in place in 1995 to determine if the origin was accurate. Currently, the hauler is still the first source of information for the landfill operators to initiate the reporting process to TDEC.
3. Many private haulers bring waste to the BFI North and South Landfills, both in state and out of state. The county cannot account or verify the origins of the MSW being brought into the county since the landfill operators have the responsibility to report these figures to TDEC.

Shelby County did meet the Qualitative – Real Time Method of waste reduction by showing a real-time diversion rate of 32% and as a result exceeded the state’s mandate of waste diversion in landfills.

TABLE 7.1

| <b>Waste Reduction Goal Calculation Method</b>                |                         |
|---|-------------------------|
|   | Qualitative - Real Time |
| Shelby County   | 32%                     |
| 25% Waste Reduction Goal Achieved                             | Yes                     |
| Source: Shelby County/Memphis Area Association of Governments |                         |

## Section VIII

### SOLID WASTE DISPOSAL CAPACITY

Provide a chart indicating current collection and disposal capacity by facility site and the maximum capacity the current infrastructure can handle at maximum throughput. Provide this for both Class I and Class III/IV disposal and recycled materials. Identify and discuss any potential shortfalls in materials management capacity whether these are at the collection or processor level.

Table 8.1

| Site Names  | Annual Tons Disposed by Shelby County | Solid Waste Permit # | Current Disposal (daily throughput ton per day) | Maximum Disposal Capacity (daily throughput ton per day) | Projected Life of Facility   |
|---|---------------------------------------|----------------------|---|--|--|
| BFI North Shelby County (Class I/III)             | 836,957                               | SNL 79000024         | 2,300   | 5,000  | 38+ years remaining life   |
| BFI South Shelby County (Class I)                 | 237,329                               | SNL 790000135        | 2,300   | 5,000  | 35+ years remaining life   |
| North Memphis (Class III)                         | 112,500                               | DML 791060224        | 651   | 450  | 1+ year remaining life   |
| E-PLEX (Class III,IV)                             | 768,001                               | DML 79000050         | 2,800   | 2,100  | 10+ years remaining life   |
| Frayser Business Center Demolition (Class III/IV) | 41,792                                | DML 790123           | 156   | 85   | 4 years remaining life   |
| Chandler Demolition (Class III/IV)                | 0                                     | DML 790000074        | 0   | 0  | 4 years remaining life   |
| Transfer Station Site Name                        | Total Solid Waste                     | Transfer Permit #    | Out of state/county amounts received            | Amounts transferred out of county & state                | Locations  |
| Waste Connections                                 | 189,598                               | 790001022            | 53,009  | 189,598  | NE Mississippi Regional Landfill<br>Walnut, MS<br>(Permit # 262000055) |
| Waste Management                                  | 110,517                               | 790001072            | 14,474  | 96,044   | Tunica County<br>Robinsonville, MS<br>(Permit # 266000033)             |

Source: County Landfill Reports, November 2016  
Transfer Station Reports, November 2016

\*Note: Annual tonnage disposed includes the towns of Arlington, Bartlett, Collierville, Lakeland, Memphis, Millington, Unincorp. Shelby Co.

No potential shortfalls in materials management capacity at the collection or processor level are foreseen. Unless there is a tremendous spike in projected development growth for the entire county and/or man-made or natural disaster causing great infrastructure damage, current landfill capacity is available. Once again, unforeseen natural disasters such as a hurricane, a five-hundred year flooding event or a Class 5 tornado and the creation of waste debris of a huge proportion may over extend current operations suited for “normal” waste output. Currently measuring above normal waste flow during a catastrophic event is possible, but determining waste origin may prove challenging.

## Section IX

### UNMET FINANCIAL NEEDS

*Complete the chart below and discuss unmet financial needs to maintain current level of service. Provide a cost summary for current year expenditures and projected increased costs for unmet needs.*

All cities and counties in the State of Tennessee are required to submit a balance budget (revenues = expenditures). Their budget reflects anticipated and often unanticipated expenditures. Typically, unanticipated expenditures may arise from some eruption or damage to infrastructure. Often a key piece of capital equipment (back end loader, ladder truck, city hall roof, etc.) that require a substantial amount of funds to repair can occur for many communities. Personnel issues such as increase cost of health insurance premiums can result in hundreds of thousands of dollars to meet. Whatever the issue or event, these unexpected costs require attention of city officials. Funds are often captured in the budget's Fund Balance line item of both the General and Enterprise Funds. These funds accumulated over a period due to excess revenues over expenditures. Because solid waste and recycling activities are found within an enterprise fund, access toward the use of the funds often requires a budget amendment by the governing body.

Another issue is the fluctuations in the economy may drive up the cost of doing government business, in areas such as fuel, materials and equipment. Typically, these fluctuations are relatively small and may not impact a city/county budget.

Other very important unmet financial need arises when budget priorities are given to other operational activities of the city/county. Often a Department Head will request additional vehicles or equipment and may not receive approval by his or her manager. Or should the vehicles make it to the budget, approval is denied by the governing body because of other priorities.

Solid waste and recycling programs operated by the county is limited in

scope due to the county solid waste program requirement of residents and non-residential users to contract for their own services. Shelby County sub-contracts with the City of Memphis to manage and operate the Hazardous Household Waste program and facility and is funded by the state grant for Hazardous Household Waste management.

Table 9.1 prepared by Shelby County officials detail the unmet needs for Shelby County:

**Table 9.1**

| EXPENDITURES  |                     |                     |                                       |
|---|---------------------|---------------------|---------------------------------------|
| Description   | Present Need\$/Year | Unmet Needs \$/Year | Total Needs (Present + Unmet \$/Year) |
| Salary and Benefits   |                     |                     |                                       |
| Sanitation Management                                       |                     |                     |                                       |
| Transportation/Hauling                                      |                     |                     |                                       |
| Collection and Disposal Systems                             |                     |                     |                                       |
| Equipment   |                     |                     |                                       |
| Sites   |                     |                     |                                       |
| Convenience Center  |                     |                     |                                       |
| Transfer Station  |                     |                     |                                       |
| Recycling Center  |                     |                     |                                       |
| MRF   |                     |                     |                                       |
| Problem Waste Centers ( <b>Household Hazardous Waste</b> )  | \$219,000           | \$900               | \$219,900                             |
| Landfills   |                     |                     |                                       |
| Sites   |                     |                     |                                       |
| Operation   |                     |                     |                                       |
| Closure   |                     |                     |                                       |
| Post Closure Care   | \$113,997           | \$152,876           | \$266,873                             |
| Highway Litter & Trash Collection                           | \$0                 | \$230,700           | 230,700                               |
| Other Waste Collection ( <b>Household Hazardous Waste</b> ) |                     | \$0                 | 85,000                                |
| Administration (supplies, communication costs, etc.)        |                     |                     |                                       |
| Education   |                     |                     |                                       |
| Public  |                     |                     |                                       |
| Continuing Ed.  |                     |                     |                                       |
| Capital Projects  |                     |                     |                                       |
| <b>Total Expenditures</b>                                   |                     |                     | <b>\$802,473</b>                      |
| REVENUES  |                     |                     |                                       |
| Host Agreement Fee  |                     |                     |                                       |
| Tipping Fees  |                     |                     |                                       |
| Property Taxes  |                     |                     |                                       |
| Sales Taxes (Local)   |                     |                     |                                       |
| Surcharges  |                     |                     |                                       |
| Disposal Fees   |                     |                     |                                       |
| Collection Charges  |                     |                     |                                       |

|   |           |     |                  |
|---|-----------|-----|------------------|
| Table 9.1 (Con't.)                                    |           |     |                  |
| Industrial or Commercial Charges                      |           |     |                  |
| Residential Charges                                   |           |     |                  |
| Convenience Centers Charges                           |           |     |                  |
| Transfer Station Charges                              |           |     |                  |
| Sale of Recyclable Materials                          | \$22,068  | \$0 | \$22,068         |
| Other sources: (Grants, bonds, interest, sales, etc.) | \$250,000 | \$0 | \$250,000        |
| <b>Total Revenues</b>                                 |           |     | <b>\$272,068</b> |

## Section X

### CURRENT REVENUE SOURCES

*Compare Revenue Sources for the Region's Current Solid Waste Programs with Projected Future Demands. Identify Any Potential Shortfalls in that Capacity. Identify all current revenue sources by county and municipality that are used for materials and solid waste management. Project future revenue needs from these categories and discuss how these needs will be met.*

Most governments budget their service needs in what is defined as incremental budgeting. Meaning that spending is measured in small increased amounts (or decreases) over a period of time against revenue stream. Most finance and/or city managers conservatively project the amounts of revenues expected to come to the city and form a balance budget on those expectations. Most administrators will project the useful life of capital equipment and budget for capital equipment replacement and at the same time budget for normal maintenance and repairs. Often during times for which revenues are lower than expected, capital equipment needs are delayed until more affordable opportunities arise, meaning more revenue funding.

Elected officials are more reluctant to raise taxes of any sort to meet the budget needs of the government based upon the “no more taxes” movement within some communities. Predicting shortfalls based upon future demands absent of the social and political factors become more of a guessing game than one of measured quantifiable prediction. For instance, a rise in health insurance cost can often result in a significant Reduction In Personnel (RIP) that can challenge a solid waste operation. This cost demand is too volatile to predict over any period of time. Another example is a significant reduction in federal and state funding that often occurred and had a significant effect on local government operations. Without an intimate knowledge of the operations of each community and due to the potential of unforeseen revenue shortfalls and emergency expenditures, projecting beyond two years may proved extremely difficult for the purpose of this report. Because several cities contract with private haulers, their operation cost if fixed to often a five (5) year contract with some contractual clauses allowing for cost of living or consumer price index increases for their operating expenses. Looking at a five (5) year horizon is more than enough to provide insight into the unmet needs for each community.

Table 10.1

| EXPENDITURES   |                     |                     |                                       |
|--|---------------------|---------------------|---------------------------------------|
| Description  | Present Need\$/Year | Unmet Needs \$/Year | Total Needs (Present + Unmet \$/Year) |
| Salary and Benefits                                  | \$34,930,593        | \$0                 | \$34,930,593                          |
| Sanitation Management                                |                     |                     |                                       |
| Transportation/Hauling                               | \$5,490,850         | \$0                 | \$5,490,850                           |
| Collection and Disposal Systems                      |                     |                     |                                       |
| Equipment  | 2,251,200           | \$0                 | \$2,251,200                           |
| Sites  |                     |                     |                                       |
| Convenience Center                                   |                     |                     |                                       |
| Transfer Station                                     |                     |                     |                                       |
| Recycling Center                                     |                     |                     |                                       |
| MRF  |                     |                     |                                       |
| Problem Waste Centers                                | \$10,091            | \$0                 | \$10,091                              |
| Landfills  |                     |                     |                                       |
| Sites  | \$0                 | \$8,000,000         | \$8,000,000                           |
| Operation  |                     |                     |                                       |
| Closure  |                     |                     |                                       |
| Post Closure Care                                    | \$113,997           | \$0                 | \$113,997                             |
| Highway Litter & Trash Collection                    | \$25,000            | \$1,725,000         | \$1,750,000                           |
| Other Waste Collection                               | \$85,000            | \$0                 | \$85,000                              |
| Administration (supplies, communication costs, etc.) | \$16,376,074        | \$0                 | \$16,376,074                          |
| Education  |                     |                     |                                       |
| Public   | \$12,250            | \$2,703,950         | \$2,716,200                           |
| Continuing Ed.                                       | \$12,000            | \$0                 | \$12,000                              |
| Capital Projects                                     | \$2,424,200         | \$363,630           | \$2,787,830                           |
| <b>Total Expenditures</b>                            | <b>\$61,721,164</b> | <b>\$12,792,580</b> | <b>\$74,513,744</b>                   |
| REVENUES   |                     |                     |                                       |
| Host Agreement Fee                                   |                     |                     |                                       |
| Tipping Fees   |                     |                     |                                       |
| Property Taxes                                       | \$113,789           | \$0                 |                                       |
| Sales Taxes (Local)                                  |                     |                     |                                       |
| Surcharges   |                     |                     |                                       |
| Disposal Fees  |                     |                     |                                       |

Table 10.1 (Con't.

|   |                     |            |                     |
|---|---------------------|------------|---------------------|
| Collection Charges                                    |                     |            |                     |
| Industrial or Commercial Charges                      | \$24,500            | \$0        |                     |
| Residential Charges                                   | \$73,749,591        | \$0        |                     |
| Convenience Centers Charges                           |                     |            |                     |
| Transfer Station Charges                              |                     |            |                     |
| Sale of Recyclable Materials                          | \$8,000             | \$0        |                     |
| Other sources: (Grants, bonds, interest, sales, etc.) | \$535,800           | \$0        |                     |
| <b>Total Revenues</b>                                 | <b>\$74,431,680</b> | <b>\$0</b> | <b>\$74,431,680</b> |

**Shelby County and Municipal Solid Budgets**

The following tables are taken directly from the budgets of Shelby County and each of the county’s municipalities. Their line-items reflects how budget dollars are allocated to fund and expend for solid waste operations. Note the similarities and differences in line-item budgets among the different communities. As shown, each budget for solid waste management and operation requires a balance between revenues and expenditures.

Table 10.2a

| Arlington   | FY 2017-2018     |
|---|------------------|
| <b>Revenues<sup>1</sup></b>   |                  |
| Fund Balance  | \$0              |
| Refuse Collection   | \$945,250        |
| Interest Earnings   | \$2,000          |
| Operating transfer from General Fund  | \$0              |
| <b>Total Revenues</b>   | <b>\$947,250</b> |
| <b>Expenses</b>   |                  |
| Salaries  | \$42,000         |
| OASI (Employer's Share)   | \$3,100          |
| Hospital and Health Insurance   | \$6,500          |
| Workman's Compensation  | \$3,500          |
| Other Employer's Contribution (6%)  | \$3,000          |
| Employee Education  | \$500            |
| Collection Fees   | \$830,000        |
| Clothing and Uniforms   | \$650            |
| Capital Outlay  | \$0              |
| Postclosure Care Costs  |                  |
| Memberships, Registration Fees  | \$4,800          |
| Other Professional  | \$12,000         |
| Repair & Maintenance Services   | \$41,200         |
| <b>Total Expenditures</b>   | <b>\$947,250</b> |
| <sup>1</sup> Arlington receives \$4,000 per year from the Operation and Maintenance Grant (TN Department of Environment and Conservation) |                  |

Table 10.2b

| Bartlett                                | FY 2017-2018       |
|---|--------------------|
| <b>Solid Waste Revenues<sup>1</sup></b> |                    |
| TN Recycling Rebate                     | \$5,000            |
| Sanitation Fees-Residential             | \$6,000,000        |
| Sanitation Fees-Commercial              | \$24,000           |
| Recycling Fees                          | \$8,000            |
| Carts-Commercial                        | \$500              |
| Special Sanitation Pick up              | \$500              |
| Carts-Residential                       | \$20,000           |
| Appliances                              | \$3,000            |
| Other Revenue                           | \$0                |
| <b>Total Solid Waste Revenues</b>       | <b>\$6,061,000</b> |
| <b>Solid Waste Expenditures</b>         |                    |
| Personnel                               |                    |
| Supervisor Salaries                     | \$83,864           |
| Employee Wages                          | \$1,582,831        |
| Overtime Wages                          | \$225,000          |
| Contracted Services                     | \$180,412          |
| Part-time                               | \$39,225           |
| Vacation Pay                            | \$0                |
| Sick Pay                                | \$0                |
| Longevity Pay                           | \$45,751           |
| Bonus                                   | \$3,793            |
| Employee Health Insurance               | \$409,932          |
| Employee Life Insurance                 | \$5,333            |
| Worker's Compensation Insurance         | \$92,287           |
| Unemployment Compensation               | \$0                |
| Retiree Health Insurance                | \$83,335           |
| FICA                                    | \$141,507          |
| Pension Contribution                    | \$211,873          |
| Contributory Retirement Plan            | \$7,666            |
| <b>Total Personnel</b>                  | <b>\$3,112,809</b> |
| Operations                              |                    |
| Other Professional Services             | \$0                |
| Dues & Subscriptions                    | \$220              |

Table 10.2b (Con't.)

| Bartlett                    | FY 2017-2018 |
|-----------------------------|--------------|
| Utilities                   | \$11,000     |
| Phone-Local                 | \$1,350      |
| Long Distance               | \$0          |
| Cellular Phones             | \$1,500      |
| Shop Allocation             | \$100,000    |
| Vehicle Maintenance         | \$450,000    |
| Equipment Maintenance       | \$55,000     |
| Radio Maintenance           | \$0          |
| Building Maintenance        | \$1,000      |
| Office Supplies             | \$1,000      |
| Printing                    | \$750        |
| Petroleum Supplies          | \$275,000    |
| Clothing & Uniforms         | \$15,000     |
| Operating Supplies          | \$28,000     |
| Cleaning Supplies           | \$2,000      |
| Fill Sand, Dirt & Gravel    | \$3,000      |
| Small Tools                 | \$2,500      |
| Equipment Leasing           | \$300        |
| Property Insurance          | \$681        |
| Vehicle & Equip Insurance   | \$43,000     |
| General Liability Insurance | \$14,000     |
| Landfill Fees               | \$962,000    |
| State Fees                  | \$23,000     |
| Damage Claims               | \$10,000     |
| Miscellaneous Other Expense | \$3,000      |
| Total Operation             | \$2,003,301  |
| Transfer Out                |              |
| Transfer To Debt Service    | \$163,000    |
| Total Transfer Out          | \$163,000    |
| Capital                     |              |
| Building Improvements       | \$13,000     |
| Communication Equipment     | \$200        |

Table 10.2b (Con't.)

| Bartlett  | FY 2017-2018       |
|---|--------------------|
| Data Equipment  | \$0                |
| Vehicles  | \$884,000          |
| Other Equipment   | \$78,000           |
| Walking Floor Trailer Carts   | \$75,000           |
| Total Capital   | \$1,050,200        |
| <b>Total Solid Waste Expenditures</b>   | <b>\$6,329,310</b> |
| Net From Operations   | -\$268,310         |
| Beginning Fund Balance  | \$1,214,666        |
| Ending Fund Balance   | \$946,356          |
| <sup>1</sup> Bartlett receives \$20,000 per year from the Operation and Maintenance Grant (TN Department of Environment and Conservation) |                    |
| <sup>1</sup> Bartlett received \$10,764 from TN Department of Environment and Conservation in the form of a Recycling Rebate FY 2016-17   |                    |

Table 10.2c

| Collierville  | FY 2016-2017       |
|---|--------------------|
| <b>Revenues<sup>1</sup></b>   |                    |
| Collection Fees   | \$4,010,500        |
| Cart Fees   | \$60,000           |
| Recycling Grant   | \$4,200            |
| <b>Total Revenues</b>   | <b>\$4,074,700</b> |
| Expenses  |                    |
| Personnel   | \$1,806,588        |
| <b>Operating Expense</b>  | <b>\$1,532,905</b> |
| Capital Outlay  | \$621,000          |
| Debt Service  | \$54,989           |
| <b>Total Expenses</b>   | <b>\$4,015,482</b> |
| <sup>1</sup> Collierville receives \$15,000 per year from the Operation and Maintenance Grant (TN Department of Environment and Conservation) |                    |
| <sup>1</sup> Collierville received \$8,979 from TN Department of Environment and Conservation in the form of a Recycling Rebate FY 2016-17    |                    |

Table 10.2d

| Germantown  | FY 2017-2018       |
|---|--------------------|
|   |                    |
| <b>Revenues:<sup>1</sup></b>  |                    |
| Fixed Service Fee   | \$4,942,000        |
| Other Revenues  | \$61,000           |
| Transfer In   | \$0                |
| <b>Total Revenues</b>   | <b>\$5,003,000</b> |
| <b>Expenses By Category</b>   |                    |
| Communication   | \$25,000           |
| Personnel   | \$110,000          |
| Professional Fees   | \$0                |
| Supplies  | \$38,000           |
| Contract Services   | \$4,609,000        |
| Utilities   | \$0                |
| <b>Total Expenses</b>   | <b>\$4,782,000</b> |
| Excess (Deficit)  | \$221,000          |
| Total Net Position  |                    |
| Beginning   | \$822,000          |
| Ending  | \$1,033,000        |
| Capital Outlay  | \$170,000          |
| <sup>1</sup> Germantown receives \$15,000 per year from the Operation and Maintenance Grant (TN Department of Environment and Conservation) |                    |
| <sup>1</sup> Germantown received \$7,211 from TN Department of Environment and Conservation in the form of a Recycling Rebate FY 2016-17    |                    |

Table 10.2e

| Lakeland                         | FY2017-2018        |
|----------------------------------|--------------------|
| <b>Revenues<sup>1</sup></b>      |                    |
| Solid Waste Fees                 | \$1,234,802        |
| Interest Earned - Checking       | \$1,500            |
| <b>Total Solid Waste Revenue</b> | <b>\$1,236,302</b> |
| <b>Expenditures</b>              |                    |
| Regular Employee Wages           | \$18,211           |
| Overtime Wages                   | \$200              |
| Subtotal Personnel Expenditures  | \$18,411           |
| FICA (Employer's Share)          | \$1,408            |
| Insurance                        | \$4,229            |
| Retirement                       | \$1,583            |
| HAS Retirement                   | \$0                |
| Work Comp                        | \$44               |
| Education/Training               | \$250              |
| Uniforms                         | \$0                |
| Subtotal Fringe Benefits         | \$7,514            |
| Postage                          | \$2,500            |
| Printing                         | \$3,000            |
| MLGW Collection Fees             | \$25,000           |
| Subtotal General Office Services | \$30,500           |
| Other Professional Services      | \$5,000            |
| Subtotal Professional Services   | \$5,000            |
| Repair & Maintenance Vehicles    | \$0                |
| Subtotal Repair & Maintenance    | \$0                |
| Travel                           | \$0                |
| Meals & Entertainment            | \$0                |
| Subtotal Travel                  | \$0                |
| Other Contracted Service         | \$15,000           |
| Contracted Service               | \$36,850           |
| Litter Control                   | \$25,000           |
| Keep Lakeland Beautiful          | \$12,000           |
| Contingency                      | \$1,000            |

Table 10.2e (Con't.)

| Lakeland   | FY2017-2018        |
|--|--------------------|
| Fuel   | \$0                |
| Subtotal Supplies  | \$89,850           |
| Capital Outlay-Vehicle   | \$60,000           |
| Subtotal Capital   | \$60,000           |
| <b>Total Solid Waste Expenditures</b>  | <b>\$1,111,275</b> |
| <sup>1</sup> Lakeland receives \$4,000 per year from the Operation and Maintenance Grant (TN Department of Environment and Conservation) |                    |
| <sup>1</sup> Lakeland received \$2,307 from TN Department of Environment and Conservation in the form of a Recycling Rebate FY 2016-17   |                    |

Table 10.2f

| Memphis  | FY 2016             |
|--|---------------------|
| Contributed from Fund Balance  | \$0                 |
| Local Taxes  | \$113,789           |
| Charges for Services   | \$55,773,539        |
| Use of Money and Property  | \$0                 |
| Federal Grants   | \$0                 |
| State Grants   | \$73,000            |
| Other Revenues   | \$250,000           |
| <b>Total Revenues<sup>1</sup></b>  | <b>\$56,210,328</b> |
| Personnel Services   | \$29,117,592        |
| Materials and Supplies   | \$12,746,110        |
| Capital Outlay   | \$500,000           |
| Grants and Subsidies   | \$0                 |
| Service Charges  | \$15,801,502        |
| Transfer Out   | \$5,055,687         |
| <b>Total Expenditures</b>  | <b>\$63,220,891</b> |
| Increase(Decrease) in Net Assets   | (\$7,010,563)       |
| <sup>1</sup> Memphis receives \$50,000 per year from the Operation and Maintenance Grant (TN Department of Environment and Conservation) |                     |
| <sup>1</sup> Memphis received \$141,089 from TN Department of Environment and Conservation in the form of a Recycling Rebate FY 2016-17  |                     |

Table 10.2g

| Millington                     | FY 2017          |
|--------------------------------|------------------|
| <b>Revenues<sup>1</sup></b>    |                  |
| Residential Sanitation         | \$740,000        |
| Discounts Forfeited            | \$20,000         |
| Revenues from Fees             | \$760,000        |
| Interest Income                | \$100            |
|                                |                  |
| Interest Income                | \$100            |
| FEMA-TEMA Reimbursement        | \$0              |
| TEMA Reimbursement             | \$0              |
| Misc Revenue                   | \$0              |
| Auction Proceeds               | \$0              |
| Planned Use of F/Y Funds       | \$0              |
| Total Other Income             | \$0              |
| <b>Total Revenues</b>          | <b>\$760,100</b> |
|                                |                  |
| <b>Residential Solid Waste</b> |                  |
| Salaries                       | \$386,640        |
| Overtime                       | \$1,000          |
| Vacation pay at Retirement     | \$1,900          |
| reimb for billing by City Hall | \$38,075         |
| Allocate PW Director           | \$17,046         |
|                                | \$444,661        |
| Fringe Benefits                |                  |
| Health Insurance               | \$73,535         |
| Life Insurance                 | \$2,005          |
| FICA                           | \$24,151         |
| Medicare                       | \$5,648          |
| Retirement                     | \$34,616         |
| Workers Comp Insurance         | \$23,565         |
| Medical Testing                | \$500            |
| Insurance-Retirees             | \$3,100          |
| Total Fringe Benefits          | \$167,120        |
| Total Residential Personnel    | \$611,781        |

Table 10.2g (Con't.)

| Millington   | FY 2017          |
|--|------------------|
| <b>Operating Expenditures</b>  |                  |
| Training & Travel  | \$1,000          |
| Advertising  | \$1,000          |
| Telephone Expense  | \$800            |
| Contracts  | \$0              |
| Audit  | \$1,795          |
| R & M Equipment  | \$3,000          |
| R & M Vehicle  | \$23,000         |
| Maintenance Agreement  | \$6,100          |
| Fuel Billed by Public Works  | \$30,000         |
| Repairs by PW Shop   | \$25,000         |
| Waste Disposal   | \$23,000         |
| Operational Supplies   | \$7,000          |
| Equipment Purchase   | \$4,000          |
| Uniforms   | \$4,500          |
| Gas & Oil (purchased direct)   | \$0              |
| Expendable Furn & Equip  | \$1,500          |
| General Liability  | \$3,300          |
| Errors & Omissions   | \$310            |
| Auto Liability Insurance   | \$8,454          |
| Truck Purchases  | \$0              |
| Contingency  | \$4,560          |
| Total Residential Operation  | \$148,319        |
| <b>Total Expenditures</b>  | <b>\$760,100</b> |
| Net From Operation   | \$0              |
| <sup>1</sup> Millington receives \$7,000 per year from the Operation and Maintenance Grant (TN Department of Environment and Conservation) |                  |
| <sup>1</sup> Millington received \$2,026 from TN Department of Environment and Conservation in the form of a Recycling Rebate FY 2016-17   |                  |

Table 10.2h

| Shelby County  | FY 2017          |
|--|------------------|
| <b>General Fund Revenue<sup>1</sup></b>  |                  |
| State of Tennessee Revenues  | \$85,000         |
| Federal & Local Reimbursement  | \$115,000        |
| Journal Adjustment (Shelby Cty)  | \$50,000         |
| <b>Total Revenue</b>   | <b>\$250,000</b> |
| <b>General Fund Expense</b>  |                  |
| Salaries - Regular Pay   | \$53,555         |
| Salaries - Other Compensation  | \$402            |
| Fringe Benefits  | \$14,280         |
| Supplies & Materials   | \$8,548          |
| Services & Other Expenses  | \$1,150          |
| Professional & Contract Services   | \$228,924        |
| Rent, Utilities & Maintenance  | \$10,091         |
| Interfund Services   | \$2,050          |
| Operating Transfer In  | -\$50,000        |
| Planned Change in Fund Balance   | -\$50,000        |
| <b>Total Transfers and Expenditures</b>  | <b>\$219,000</b> |
| <sup>1</sup> Shelby County receives \$50,000 per year from the Operation and Maintenance Grant (TN Department of Environment and Conservation) |                  |

## Section XI

### Sustainable Goals Consistent with the State Plan

*Discuss the region's plan for managing its solid waste system over the next five (5) years. Identify any deficiencies in that plan and offer recommendations for eliminating these deficiencies. Suggest and list the specific ways in which the region can improve its solid waste program to reach a level of waste reduction above that of the goal and provide long term sustainability to the current solid waste collection system.*

*Show how the region's plan supports the statewide Solid Waste Management Plan.*

Under the Tennessee Solid Waste Act of 1991 requires each Tennessee county to develop a regional solid waste reduction plan reducing waste flow into landfills by 25%. Under this legislative mandate, Shelby County Municipal Solid Waste Region Board commissioned a study in 1994 toward the development of a planned strategy reducing waste into existing landfills. The plan outlined several factors toward waste streaming into landfills and set forth several goals, objectives and implementation strategies toward reducing the waste stream flow into landfills. The following goals are documented from the 1994 Shelby County Municipal Solid Waste Region Board.

Table 11.1

| 1994 Shelby County Municipal Solid Waste Plan Goals and Objectives   |               |                   |
|--|---------------|-------------------|
|  | In Compliance | Not In Compliance |
| <b>WASTE REDUCTION</b>   |               |                   |
| Goal: Reduce by 25 percent the amount of Shelby County's solid waste being disposed of in Class I landfills.   | Yes           |                   |
| <b>WASTE COLLECTION/TRANSPORTATION GOAL</b>  |               |                   |
| Goal: Assure that first-quality solid waste collection and transportation services are available to all residents and businesses in Shelby County.   | Yes           |                   |
| <b>RECYCLING</b>   |               |                   |
| Goal: Increase recycling opportunities for residents and businesses in Shelby County.  | Yes           |                   |
| Objective: Emphasize recycling of yard wastes in the residential sector; paper products in the commercial and institutional sectors; and paper, wood, plastics, and other materials as warranted in commercial, industrial, and institutional sectors. | Yes           |                   |
| Objective: Create new recycling opportunities for residents of single-family and multifamily dwellings for students, and for employees of businesses, government offices, and schools.   | Yes           |                   |
| Objective: Emphasize convenience and voluntary participation in recycling programs.  | Yes           |                   |

Table 11.1 (Con't.)

| 1994 Shelby County Municipal Solid Waste Plan Goals and Objectives  |               |                   |
|---|---------------|-------------------|
|   | In Compliance | Not In Compliance |
| Objective: Provide informational, educational, and promotional material and programs to facilitate high levels of participation in recycling programs and to achieve reduction in the general of waste. | Yes           |                   |
| <b>COMPOSTING, SOLID WASTE PROCESSING, WASTE TO ENERGY &amp; INCINERATION CAPACITIES</b>  |               |                   |
| Goal: Increase composting/mulching opportunities for residents and businesses in Shelby Co.   | Yes           |                   |
| Goal: Encourage the development of solid waste processing and waste-to-energy programs and facilities in Shelby County by private industry.   | Yes           |                   |
| Goal: Encourage the development and expansion of markets for recycled and composted products.   | Yes           |                   |
| <b>DISPOSAL CAPACITY</b>  |               |                   |
| Goal: Assure that first-quality solid waste disposal services are available to all residents and businesses in Shelby County.   | Yes           |                   |
| Goal: Assure that landfills in Shelby County have adequate capacities in future years to meet the county's future disposal needs.   | Yes           |                   |
| <b>PUBLIC INFORMATION AND EDUCATION</b>   |               |                   |
| Goals: Increase environmental education programs and information services for citizens and businesses in Shelby County.   | Yes           |                   |
| Objective: Focus educational efforts on reducing paper waste from the commercial sector and yard waste from the residential sector.   | Yes           |                   |
| <b>HOUSEHOLD HAZARDOUS WASTES</b>   |               |                   |
| Goal: Assure that residents of Shelby County have access to collection and disposal services for household hazardous waste and other problem wastes.  | Yes           |                   |

**Summary**

Shelby County's regional plan approach to solid waste management touches all the elements within the state's management plan. The regional solid waste plan provides for lofty goals and objectives, if implemented will address all solid waste management needs for the county region. Although the county's solid waste management plan addresses the "theoretical" framework of the state's initiatives, it does so with a very outdated plan (1994). In twenty-three years, the social-economic dynamics of the county region has most certainly change. More residents, more businesses, more industries, more politics and more varied opinions about "trash" and how to manage it. This give more importance to the need of having a document

that guides the community regardless how the dynamics of community transition. Prior to assessing the current plan's **Strengths, Weaknesses, Opportunities and Threats (SWOT)**, the initial premise needed is for the development of a new plan, not an update of the existing 1994 solid waste management plan. Table 11.2 provide observations of the state of the region solid waste management program.

Table 11.2

**Strengths Weaknesses, Opportunities and Threats**

| Strengths:   |
|--|
| Dedicated and engaged Regional Solid Waste Planning Board  |
| Local officials support for rationale solid waste management   |
| City and county personnel innovative and professional approaches to doing more with less   |
| Private sector's ability to meet solid waste demands at competitive price points for communities   |
| Moderate financial challenges and competition for limited public funds for solid waste management  |
| Adequate infrastructure (landfill, transfer station, recycling centers, etc.) for solid waste life cycle   |
| Weaknesses:  |
| Outdated and inadequate county Municipal Solid Waste Regional Plan   |
| Lack of a Capital Improvement Planning (and Budgeting) from many cities enabling a more accurate representation of need  |
| Municipal Solid Waste Regional Plan lacks measurable milestones reflecting desired goals and objectives  |
| Insufficient encouragement and guidance for cooperation and collaboration among neighboring communities for solid waste services to ensure an economy of scale pricing favorable to the consumer |
| Plan provides little guidance for future location of recycling centers to higher density centers. Closer location of recycling centers may encourage more frequent use by households.            |
| Weak penetration for recycling message to all sectors of the community   |
| Opportunities  |
| Land availability to develop econo-friendly solid waste facilities (transfer stations, recycling centers, compost centers, etc.,)  |
| Improve recycling and composting message to all community sectors  |
| Identification of tangible and measurable milestones that are common among all governments   |
| Identify creative sources of funding for solid waste programs  |

| Threats  |
|--|
| Incremental shift from attaining the state 25% reduction of solid waste into the landfills             |
| Increase belief that partial successes for waste reduction will achieve total regional reduction goals |
| Favoring general budget decisions against the needs of solid waste operations                          |
| Undervalue solid waste management innovation in lieu of financial constraints                          |

**Five Year Horizon**

The report's prescribed five year horizon to assess the state of affairs for Shelby County solid waste operation(s), only results in the status quo for the individual communities and county. Reaching the twenty-five percent (25%) goal will continue as mandated by the state. This is done with average community education toward a volunteer recycling program. Collaborative work with universities and the private sector toward the development of value added products from solid waste materials may be necessary to move beyond the minimum achievement. A continued citing an emphasis for locating recycling centers near or within densely populated census tracts. The question, can recycling centers portray a more sanitized appearance? If so, their location near residential areas may not invoke the "Not In My Back Yard" (NIMBY) reaction. An emphasis on design, landscape and custodial maintenance is key in penetrating the often occasional thought of responsibility of recycling. As cited from the Tennessee Advisory Commission On Intergovernmental Relations recent report for the expenditure of \$8,000,000 for a new landfill facility in Shelby County offers opportunity for discussion in the future. Certainly, the location, funding, environmental review and approval may prove a longer time frame of five years.

What is certain for the next five years, is that the Shelby County Regional Solid Waste Planning Board is needed to provide more strategic guidance to the elected officials. Their guidance must include creative and innovative approaches that anticipates the potential changes for this county.

