

# **Southeast Tennessee Municipal Solid Waste Region**

## **MCMINN COUNTY**

### **Solid Waste Needs Assessment**



**Fiscal Year 2016**

The Solid Waste Management Act of 1991 requires Tennessee local governments to prepare and maintain a comprehensive plan for managing their solid waste through modern, integrated, efficient systems. To assure that such planning is carried out on a solid foundation of relevant and objective knowledge of local conditions, the Act requires that the Development District staff coordinate, conduct and maintain an assessment of the solid waste needs for each municipal solid waste planning region. This assessment shall be revised every five years [T.C.A. 68-211-811].

*Please provide the following information as the core foundation of the region's needs. The Needs Assessment is an attempt to outline the obstacles, difficulties, and needs unique to the region's handling and ideal disposal of its solid waste flow. You are encouraged to expound on the following items and provide additional information as warranted. While there is no required format, we suggest that you use the following format. Information should be researched and answered thoroughly, with improvement of the region in mind.*

The Solid Waste Management Act of 1991 (SWMA) was written to avert extreme financial hardships that could have occurred if small local governments were suddenly required to upgrade landfills to meet Resource Conservation and Recovery Act (Subtitle D) regulations. The Tennessee Department of Environment & Conservation promulgated rules to implement Subtitle D included provisions requiring landfill operators to line facilities with impermeable clay and synthetic materials; install leachate collection systems and monitoring wells; and provide thirty years of post-closure care. These were, at the time, extremely expensive changes in the development and operation of disposal facilities, and there was fear in the legislature that some counties would not have a disposal option.

To ensure that local governments were protected from high costs and lack of disposal capacity, the SWMA promoted regional landfills, an attempt to guide small counties into alliances with other counties. Theoretically, small counties would form a regional board that would then settle on a disposal site, and each local government would share in the cost of operation. The law even has a provision that would allow local governments to require all entities within their respective jurisdictions to dispose of their waste at the regional landfill. The premise behind the latter concept proved to be unconstitutional (see *Carbone vs Clarkstown*, U.S. Supreme Court, May 1994). While acknowledging that the flow control provision existed, no county in the State was willing to pledge public funds to facilities that may not receive enough waste to garner the tipping fees needed to meet costs.

During the same period in the early 1990s, the Tennessee Valley Authority was exploring ways to integrate solid waste into fuel supply systems at power plants that had the existing technology to properly combust waste material. One of these plants was in Kingston, and local officials became interested in combining their respective waste streams, closing most of their landfills, and hauling everything to a waste-to-energy facility.

Engineers working with TVA had prepared studies for other power plants and suggested the Watts Bar site as an alternative because two moth-balled fossil fuel plants are located there. The engineers recommended installing a companion boiler system that would utilize existing infrastructure and reduce the haul distance for all southeast Tennessee counties. Other infrastructure planned for the site included a materials recovery facility (MRF), which would have diverted enough material to meet the SWMA waste reduction goal. This situation was the catalyst for the formation of the Southeast Tennessee Municipal Solid Waste Planning Region, which includes all the counties within the Southeast Tennessee Development District: Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea, and Sequatchie. Without the flow control provision, commitments from all counties and cities were vital in bringing this project to fruition.

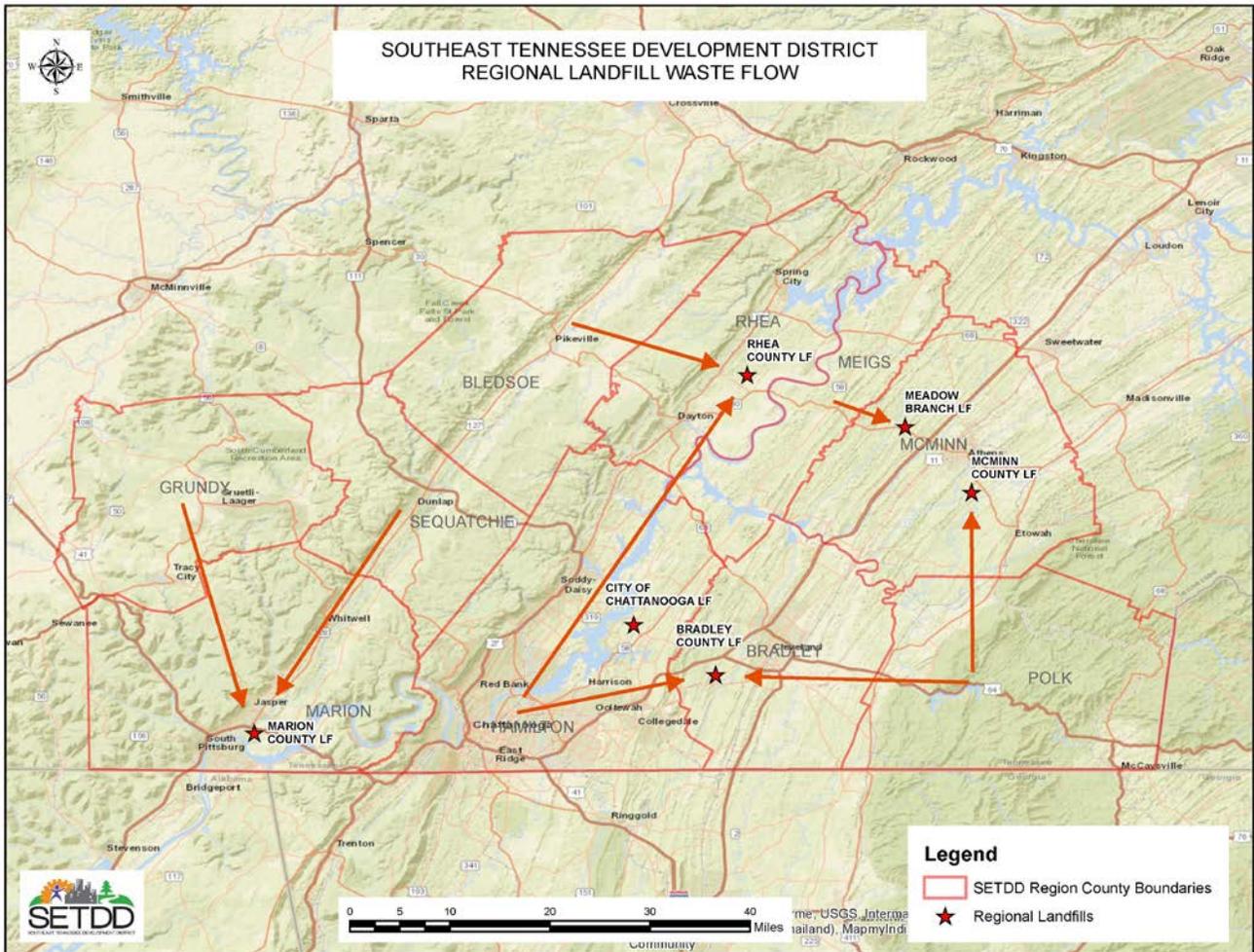
After the completion of studies funded by TVA, the utility lost interest in the project. No official reason was ever conveyed, but the decision was probably since any emissions from the proposed plant would have a potential impact on the Cherokee National Forest and the Smokey Mountain National Park. TVA's involvement in the project was crucial because the utility had existing infrastructure and would have bought the steam produced by the plant. Tipping fees would have been a reasonable \$35 per ton, including MRF operations. Without TVA, the Board could not finance a stand-alone facility because tipping fees would have reached \$100 or more, far above existing landfill disposal costs.

The failure to implement the waste-to-energy project did not deter the Board from remaining a regional planning entity. Board members were comfortable with the situation and wished to remain together if other regional opportunities arose.

Saving landfill space was a primary goal of the SWMA. Many experts believed early on that the cost per ton of garbage would be in the \$40 - \$90/ton range at Class I facilities. Consequently, recycling, waste diversion, and saving landfill space became paramount goals. High tipping fees failed to materialize, however, as competition and economies of scale drove down development costs. Subsequently, many cities and counties found themselves with expensive recycling and waste diversion programs. Studies by several jurisdictions showed costs of \$280+ to recycle a ton of waste material versus \$25-\$28 dollars to simply dump it in the landfill. It is no surprise that many cities dropped their recycling programs since law did not require them to have one in any case, and shifted most of the burden to county governments, which were required to meet SWMA goals. There were no crises, no shortage of landfill space, and most of the landfill operators were marketing their space to most sectors in Tennessee and surrounding states. The more waste coming into the landfill, the more revenue for the operators. Few landfill operators were (or are) working diligently to save space; they are generally selling as much space as possible for the best price.

In Southeast Tennessee, there are six (6) operating Class I Landfills. SANTEK Environmental, Inc. operates two of these facilities for Bradley and Rhea Counties respectively. SANTEK can generally landfill all the waste that it can attract to either landfill. In return, the counties get

reduced or no disposal costs, income from disposal operations, and assistance with programs, including the State’s Household Hazardous Waste collection events. There are considerable benefits to all parties in this relationship, especially to the county taxpayers.



Meadow Branch, a private landfill located in McMinn County, provides disposal for Meigs and Polk Counties in Southeast Tennessee, along with Knox, Loudon, and Monroe Counties, which are outside the region. McMinn County receives a host fee for Meadow Branch, and operates its own C & D landfill, which also accepts waste from outside the region.

Marion County’s landfill is operated by a Waste Disposal, Inc. Like the other landfills, waste is accepted from any source. In the past, landfill operators have received waste from Dade County, Georgia, Jackson County, Alabama, and both Hamilton and Franklin Counties in Tennessee. The landfill routinely accepts all of Grundy and Sequatchie County’s waste but do not have any out-of-state disposal contracts.

Chattanooga operates the sixth landfill in the region. It is a facility that originally belonged to Hamilton County, but when the city’s Summit Landfill was closing, the city and county came to

an agreement that allowed Chattanooga to own and operate the landfill. This landfill could accept waste from other areas, but there are currently no customers. About 64 percent of the Chattanooga/Hamilton County waste stream, over 200,000 tons annually, goes to the SANTEK landfill in neighboring Bradley County.

The following is a detailed description of McMinn County's waste collection, diversion, and disposal system and how these programs function in relation to other parts of the Region. Every attempt has been made to provide an objective assessment of the County's infrastructure and program needs based on the legal requirements of the SWMA.

**Item 1-Demographic Information & Projections**

*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.*

**Table 1.1-Municipal & County Historical Population & Population Projections**

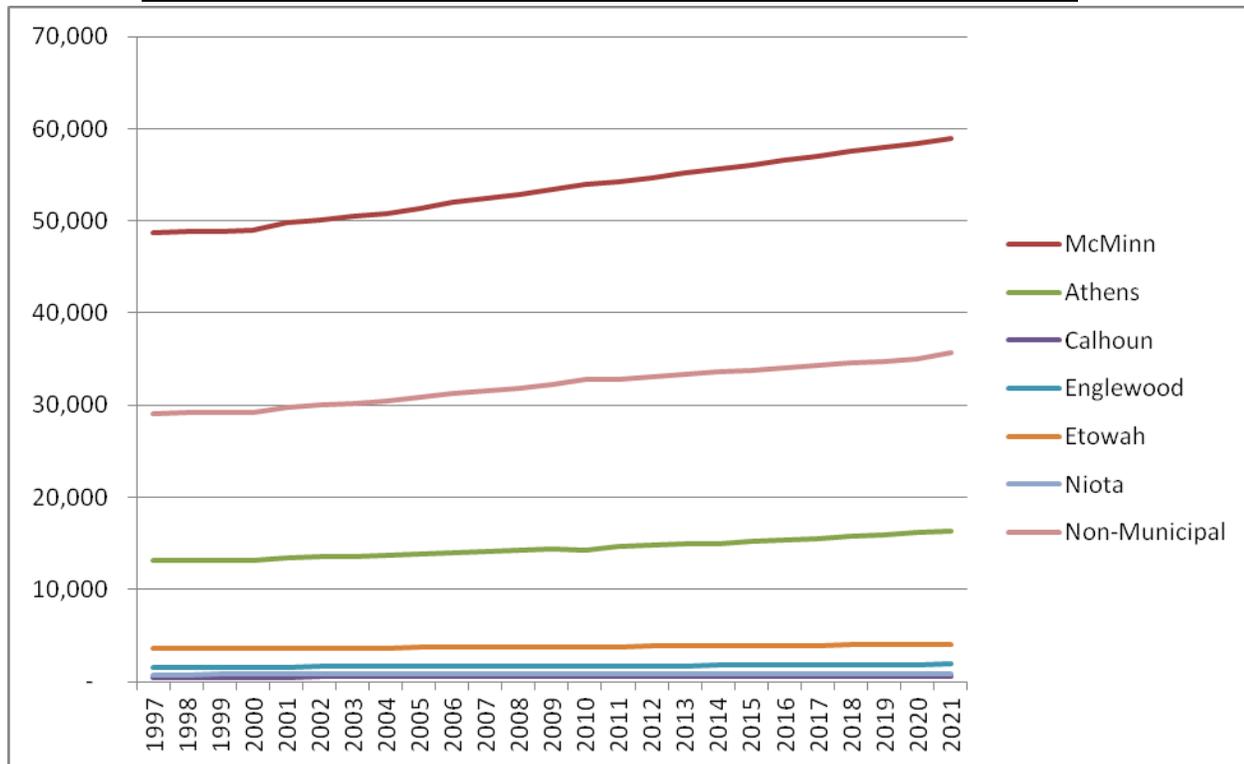
| Year | McMinn | Athens | Calhoun | Englewood | Etowah | Niota | Non-Municipal |
|------|--------|--------|---------|-----------|--------|-------|---------------|
| 2010 | 52,266 | 13,458 | 490     | 1,532     | 3,490  | 719   | 32,577        |
| 2011 | 52,404 | 13,683 | 497     | 1,566     | 3,587  | 752   | 32,319        |
| 2012 | 52,707 | 13,753 | 497     | 1,566     | 3,589  | 753   | 32,549        |
| 2013 | 53,010 | 13,823 | 498     | 1,567     | 3,591  | 753   | 32,778        |
| 2014 | 53,313 | 13,893 | 498     | 1,568     | 3,593  | 753   | 33,008        |
| 2015 | 53,616 | 13,904 | 498     | 1,569     | 3,594  | 754   | 33,297        |
| 2016 | 53,919 | 14,034 | 499     | 1,570     | 3,596  | 754   | 33,466        |
| 2017 | 54,222 | 14,104 | 499     | 1,570     | 3,598  | 754   | 33,697        |
| 2018 | 54,525 | 14,174 | 499     | 1,571     | 3,600  | 754   | 33,927        |
| 2019 | 54,828 | 14,244 | 500     | 1,572     | 3,601  | 755   | 34,156        |
| 2020 | 55,135 | 14,315 | 500     | 1,573     | 3,603  | 755   | 34,389        |
| 2021 | 55,435 | 14,385 | 500     | 1,573     | 3,605  | 756   | 35,721        |

**Sources:** Historic statistics are derived from U.S. Census Bureau data. Projections are based on mathematical regression line equations.

McMinn County’s population grew at a steady pace over the last decade, increasing about 6.2 percent between 2000 and 2010. This growth was primarily due to economic activity that occurred in and around the Cities of Athens and Etowah. Current growth has slowed to 2.5 percent over the last five years, but projections indicate a growth rate near 6 percent over the planning period, which is much in line with growth over the previous decade.

After the 2000 biennial census, Athens/McMinn County was deemed large enough to become a Metropolitan Statistical Area. This Census Bureau designation is a precursor to status as a Metropolitan Statistical Area, which would bring additional federal funding opportunities.

**Chart 1.1- Municipal & County Historical Population & Population Projections**



**Sources:** Historic statistics are derived from U.S. Census Bureau data. Projections are derived from a step-down method using Tenn. Dept. of Health estimates.

The impact of population growth on the solid waste collection and disposal system is probably minimal given the growth pattern illustrated in the previous graph. There are no indications that the population will increase to the extent that solid waste services will be under any strain to maintain existing levels of service. The county and its municipalities could cope with similar population increases in the last decade and should be able to handle future needs.

**Item 2-Analysis of 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*

McMinn County has maintained a consistent level of economic development over the past ten years and that trend is expected to continue. There are no indications of any negative economic events in the near future.

**Table 2.1-McMinn County Economic Indicators- Historical & Projections**

| Year | Total in Laborforce | Employment | Unemployed |         | Per Capita Income | Retail Sales (\$1,000's) |
|------|---------------------|------------|------------|---------|-------------------|--------------------------|
|      |                     |            | Total      | Percent |                   |                          |
| 2006 | 25,008              | 23,585     | 1,423      | 5.7%    | 26,519            | 602,350                  |
| 2007 | 24,906              | 23,530     | 1,376      | 5.5%    | 27,620            | 614,277                  |
| 2008 | 24,033              | 21,934     | 2,099      | 8.7%    | 27,918            | 601,065                  |
| 2009 | 23,549              | 20,252     | 3,297      | 14.0%   | 27,579            | 523,863                  |
| 2010 | 22,839              | 19,978     | 2,861      | 12.5%   | 28,478            | 547,451                  |
| 2011 | 23,065              | 20,491     | 2,574      | 11.2%   | 29,604            | 570,486                  |
| 2012 | 23,640              | 21,479     | 2,161      | 9.1%    | 30,843            | 612,786                  |
| 2013 | 22,913              | 20,844     | 2,069      | 9.0%    | 31,194            | 608,561                  |
| 2014 | 22,454              | 20,778     | 1,676      | 7.5%    | 31,886            | 621,039                  |
| 2015 | 22,608              | 21,134     | 1,474      | 6.5%    | 33,020            | 639,831                  |
| 2016 | 22,134              | 20,294     | 1,840      | 8.3%    | 33,385            | 626,335                  |
| 2017 | 21,894              | 20,121     | 1,773      | 8.1%    | 34,103            | 632,949                  |
| 2018 | 21,654              | 19,948     | 1,706      | 7.9%    | 34,822            | 639,563                  |
| 2019 | 21,414              | 19,776     | 1,639      | 7.7%    | 35,540            | 646,178                  |
| 2020 | 21,174              | 19,603     | 1,571      | 7.4%    | 36,258            | 652,792                  |
| 2021 | 20,934              | 19,430     | 1,504      | 7.2%    | 36,977            | 659,407                  |

**Sources:** Historic employment data, U. S. Dept. of Labor; Per capita income data, U.S. Bureau of Economic Analysis; Retail data, Tenn. Dept. of Revenue.

All state and local area dollar estimates are in current dollars (not adjusted for inflation).

As is apparent from the foregoing table, McMinn County suffered from the downturn that occurred in 2008. Unemployment went from 5.5 percent in 2007 to 14 percent in 2009. Although the economy has recovered to some degree, unemployment is still higher than the pre-recession period. Per capita incomes increased by 25 percent from 2000 to 2008 but only increased about 16% from 2008 to 2015. Likewise, retail sales have suffered, increasing only 6 percent from 2008 to 2015 versus a 26 percent increase between 2000 and 2008.

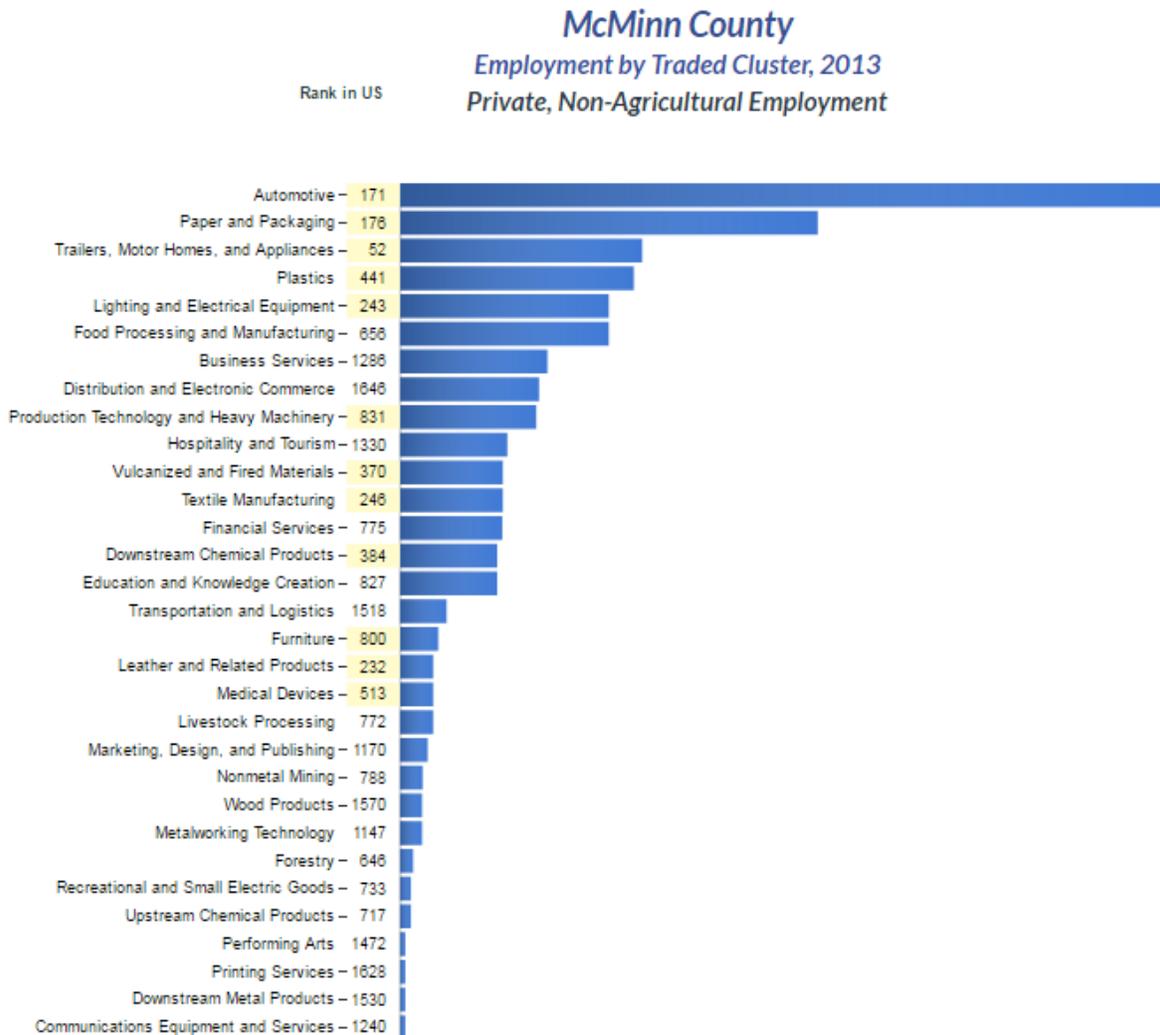
Within Tennessee, McMinn County ranks tenth in manufacturing capacity. Although there are larger industrial concentrations in the more populous metropolitan areas, McMinn County and its municipalities have plenty of expansion potential with few environmental problem areas; direct access to a major interstate system; access to port facilities on the Hiwassee River; and major rail lines, CSX and Norfolk-Southern, that run north/south through the county. In

addition, the county is located exactly halfway between the Chattanooga and Knoxville metropolitan areas.

These strategic advantages have led to great industrial development in McMinn County recently. Since 2010, McMinn County has been awarded several new industrial projects and expansion of existing plants. These projects include: Denso (Athens-2015 Expansion), Resolute Forest Products (Calhoun-2014 Expansion), and HP Pelzer Automotive Systems (Athens-2013 New Location). Source: McMinn County Economic Development Authority (<http://makeitintheminn.org/home>)

These new employment opportunities helped to reduce the unemployment rate as is reflected in Table 2-1, and projections describe a fairly flat trajectory for employment over the next five years, primarily due to the lingering effects of the 2008 recession. Even though the county has experienced a decrease in unemployment, this does not necessarily translate to an increase in solid waste since the population has not increased markedly, and new jobs were likely filled from local sources rather than from immigrants from other parts of the country.

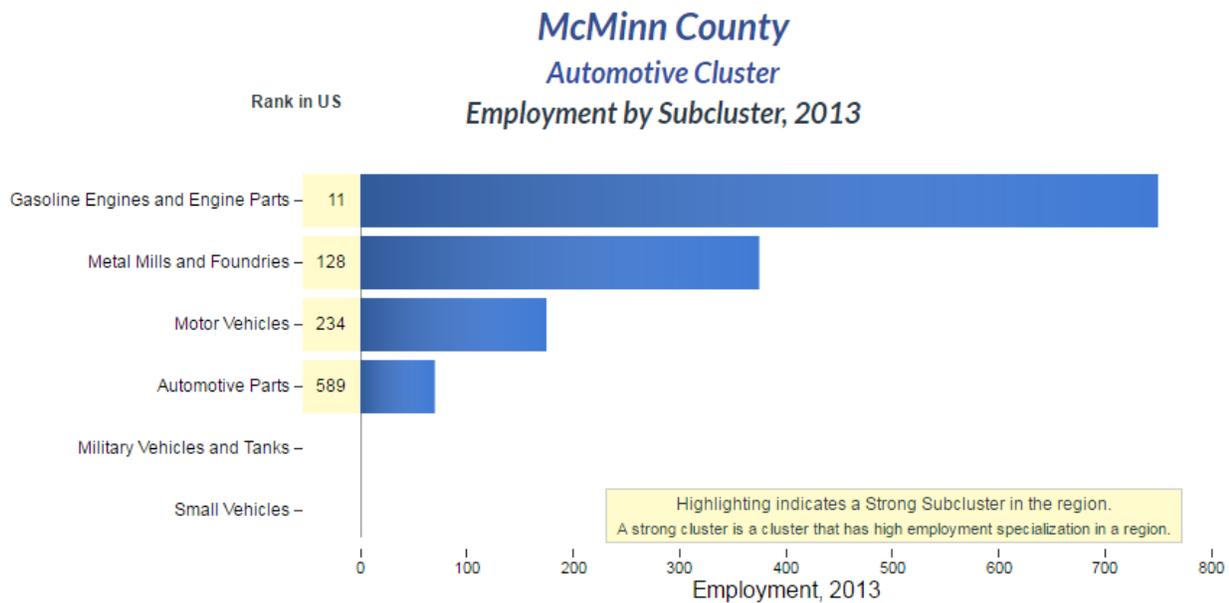
**Illustration 2.1-McMinn County Employment Traded Cluster**



As the illustration above indicates, McMinn County's most important economic sectors include automotive (Denso, JM Huber, ThyssenKrupp Waupaca) and Paper (Resolute Forest Products).

Illustrations 2.2 and 2.3 show that McMinn County's economy is highly reliant on the automotive cluster, in its manufacturing economy. The county ranks 11<sup>th</sup> in the US in the Gasoline Engines and Engines Parts economic sector. So, once can see from the data, the county's economy is highly reliant and dependant on the worldwide automobile manufacturing sector.

**Illustration 2.2-McMinn County Employment within Automotive Cluster**



**Illustration 2.3-McMinn County Cluster Portfolio & Top Clusters by Employment**



Source: [U.S. Cluster Mapping Project](#), Institute for Strategy and Competitiveness, Harvard Business School.

Although agriculture is an important sector for the McMinn County economy, employment is limited to 213 workers per the USDA 2012 Census of Agriculture. Of that number 162 workers were employed 150 days or less, meaning that 76% of this work force was only employed part time. Consequently, this sector of the economy has a minimal impact on the total employment picture for the county. The USDA data indicate that gross farm income amounts to only a little over \$2 million.

Barring any downturn in the automotive sector, McMinn County’s economic development should continue an upward curve. A reduction in vehicle sales associated with possible fuel price increases could have an impact on the local economy, but that is a global issue beyond the scope of this assessment.

**Item 3-Characterization of the Solid Waste Stream**

*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.*

There is a potential significant impact of Class II facilities (Table 3.1) operated by Resolute Forest Products Inc., a large paper manufacturing plant located in Calhoun, which is just across the Hiwassee River from Charleston and draws a significant portion of its workforce from Bradley and McMinn counties.

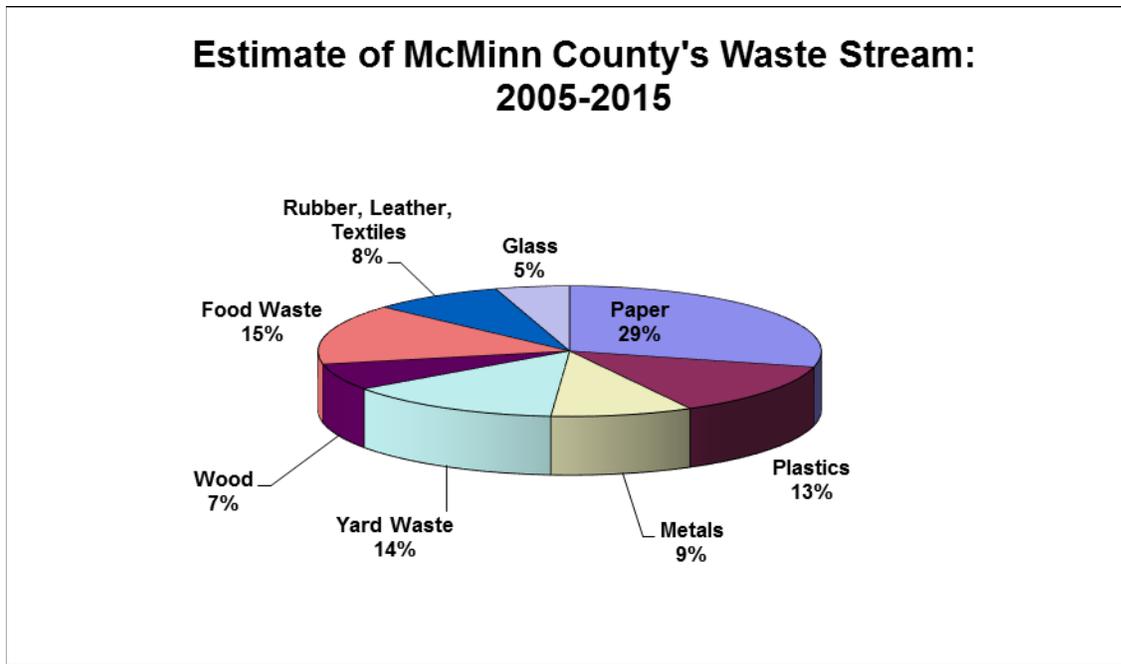
Waupaca Foundry operates a Class II facility at its plant in Etowah. This plant can produce large volumes of foundry sand, castings, and other wastes. In addition, J.M. Huber Corp. operates two landfills. There is obviously a considerable amount of material that is disposed of in these landfills, but there are no statutory requirements to report the quantities of waste sent to these landfills.

**Table 3.1 Class II Landfills**

|              |  |
|--------------|--|
| IDL540000067 | RESOLUTE FOREST PRODUCTS SOUTHERN PAPER LANDFILL |
| IDL540000079 | RESOLUTE FOREST PRODUCTS NEWSPRINT LANDFILL      |
| IDL540000100 | WAUPACA FOUNDRY, INC.                            |
| IDL540000058 | J.M. Huber Industrial Landfill                   |
| IDL540000010 | J.M. Huber Demolition Landfill                   |

Very little change is expected in waste stream composition over the next five (5) years unless one of the Class II facilities closes, and that waste goes to a public landfill in the region. This could (and has) happened without the knowledge of county officials, so spikes sometimes occur in Class I waste. Class II materials have never been quantified, and there is no requirement for industries to disclose that information. Consequently, there could be huge variations in the waste stream of a county that has a significant industrial base, and that increase could, within a short period, nullify all waste reduction efforts.

**Figure 3.1 Waste Stream Characterization**



**Source: Municipal Solid Waste in the U.S. 2011, National Service Center for Environmental Publications, EPA, 2013**

As is apparent from Figure 3.1, paper, yard, and wood waste make up almost half of the waste stream. This is obviously where the county and its municipalities should focus their efforts at waste reduction.

Per the 2015 Annual Report, nearly 19% of the McMinn County waste stream was diverted to the Class III/IV landfill. This probably accounts for much of the wood and yard waste as displayed in Figure 3-1 above as well as other non-MSW waste. The Class III/IV landfill accounts for most waste diversion since recycling programs only reduce MSW by about 7% annually. This figure will likely increase, however, as the City of Etowah implements a more ambitious recycling program in early 2017 to include cardboard, mixed paper, and plastics in its waste reduction program.

Much of the non-municipal areas have curbside service from local haulers that do not offer recycling service. It would likely be difficult for these haulers to provide curbside recycling service since they are small operations without access to a processing facility. Referring to Table 1.1, the population served by these haulers is approximately 33,297 or 62% of the population. A new convenience center at the Meadow Branch Landfill will help provide recycling service to this population.

**Table 3.2-County Collection Systems**

| Jurisdiction/<br>Sector                                | Collection  | Disposal Options  | Current<br>Problem Waste<br>Handling   | Future Problem<br>Waste Handling  | Other Problem<br>Waste   |
|--|---|---|--|---|--|
| <b>McMinn County</b>                                   | One county convenience center.<br><br>Available to all residents, including those within municipal areas. | The county convenience center is located at the Class I facility. | <b>Waste Tires:</b><br>Liberty Tire<br><br><b>Automotive Fluids:</b><br><b>Used Oil:</b><br>Convenience Center<br><br><b>Paint:</b> State program<br><br><b>Electronics:</b><br>None | <b>Waste Tires:</b><br>Continue contracting.<br><br><br><br>State program | HHW collected at mobile collection event.  |
| <b>Athens</b>  | Curbside collection provided to all city residents.   | Waste is hauled to the Meadow Branch Landfill                     | Electronics and cooking oil  | N/A   | N/A  |
| <b>Etowah</b>  | Curbside collection provided to all city resident. Convenience Center available at Public Works           | Meadow Branch Landfill  | Latex & Oil-based Paint  | N/A   | N/A  |
| <b>Municipalities of Calhoun, Englewood, and Niota</b> | Curbside collection provided to all residents with current jurisdictions                                  | Meadow Branch Landfill  | N/A  | N/A   | N/A  |
| Business   | Contracts with private haulers and self-service by business/industry.                                     | Meadow Branch Landfill  | In-house programs and contractors  | In-house programs and contractors.  | Commercial generation of hazardous waste is regulated by TDEC. Participation in the mobile HHW/CEQG collection service for a fee |

One of the most important recent developments in McMinn County’s Solid Waste system is the continued and future growth of the private Meadow Branch Landfill in McMinn County. Per the 2015 Annual Progress Report, roughly 40% (210,120 tons out of a total 514,208 tons) of Meadow Branch’s waste was imported from outside the Southeast Tennessee Solid Waste Region. Waste Connections Inc. of Knoxville own the Meadow Branch Landfill.

Most of the waste imported to the Meadow Branch is comes from transfer stations. The Knox County TS (106,213 tons in 2015) and Lenoir City TS (41,024 tons in 2015) are the two largest facilities that send waste to McMinn County.

Meadow Branch landfill has doubled in size since 2009 (by opening previously permitted areas). In 2014, Waste Connections Inc.-Meadow Branch Landfill filed a Part I expansion application. This proposed expansion would roughly double the size of the existing landfill.

Since the private Meadow Branch Landfill can operate much cheaper than the public McMinn County Landfill (due to the private landfill's much larger size which helps its economy of scale), most public and private landfill customers in McMinn County have elected to contract with Meadow Branch Landfill due to its ability to offer services (and transportation of Class I waste) at a much lower price than the county landfill. Although the publicly advertised tipping fees at the county landfill is cheaper than Meadow Branch (\$21.00 versus \$43.00), it is likely that Meadow Branch is offering large discounts to large public and private customers that are not available to the public. Therefore, due a steep loss of business and annual loss of revenue, McMinn County voted in January 2016 to no longer accept Class I waste at its landfill. The county is maintaining the permit and not permanently closing so that that it has the leverage to begin accepting waste again should market changes occur in the future.

The county and school's systems can dispose of their waste at Meadow Branch at no charge, and the county receives a host fee of \$1.75 per ton.

### **Attachment 3.1-News Article-Daily Post Athenian-January 6, 2016:regarding McMinn Co. Landfill**

## **County garbage is going private**

Posted: Wednesday, January 6, 2016 11:00 am

McMinn County and Waste Connections have negotiated the terms of an agreement to begin shipping the county's solid waste to the Meadow Branch Landfill.

With the county losing about \$500,000 per year in operating expenses at the McMinn County Sanitary Landfill, as well as at least \$200,000 annually in equipment maintenance costs, the McMinn County Commission decided to look at alternatives. A sustainability study conducted by the University of Tennessee concluded the county landfill would not be profitable as long as Meadow Branch, owned by Waste Connections, continues to operate.

After weighing several options, the McMinn County Landfill Committee unanimously approved a proposal on Tuesday night. All that remains is a vote from the full County Commission. No county property tax dollars are being used to subsidize operations at the county landfill. Instead, a host fee charged to Meadow Branch has made up the shortfall. This host agreement between the two entities expired last week.

"What I'm proposing would technically be an amending or renewing of that contract," said McMinn County Mayor John Gentry.

What Gentry presented is a hybrid of several options. Essentially, the county will continue to collect residential (Class I) waste at the convenience center located at the county landfill. The cost savings comes by, instead, burying the waste at Meadow Branch.

Class I cells are the most expensive to operate. The savings on equipment, manpower and maintenance by suspending Class I operations will dramatically decrease the operating deficit. McMinn County would continue to operate its Class III/IV cell, which is used for construction and debris waste and is less expensive to operate than a Class I cell. The convenience center and recycling center will continue to operate, as well.

County residents will experience no difference in how their waste is collected at the convenience center. In fact, as part of the proposal, Meadow Branch will open a second convenience center at its location at the same rate as the county.

The county landfill's Class I facility is not being closed, but rather temporarily suspending operations with all permits remaining active should the county decide to resume Class I collection in the future. This will effectively increase the lifespan of the facility.

"Once (Meadow Branch) fills up, our grandchildren should be in the catbird seat," said Gentry. "We keep our landfill licensed - totally operational - and I would propose we never quit doing that."

There will still be significant costs associated with the landfill regardless of whether Class I operations cease. These expenses include environmental testing, site monitoring, erosion and sediment control, and other maintenance that remains the responsibility of the county. After subtracting fixed costs, this proposal would reduce the county landfill's operating deficit to \$177,750.

As part of the agreement, Meadow Branch will provide two years of free service to McMinn County Schools. Also, all McMinn County municipalities will be offered a 10 percent discount below current rates, with an additional discount for Englewood and Etowah to compensate for the longer haul to Meadow Branch.

Meadow Branch would also agree to become a funding partner of the McMinn County Economic Development Authority and make a capital contribution for construction of the proposed Center for Advanced Manufacturing and Business Innovation (CAMBI). Meadow Branch would also provide financial support for Keep McMinn Beautiful and provide an annual scholarship for one student at both McMinn County and McMinn Central high schools.

"From day one, it had to be a win-win for both sides," said Steve Keylor, manager of Meadow Branch. "Nothing else was going to work."

If the County Commission votes to approve this agreement, it could still be several months before it becomes effective.

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The county commission approved the agreement referenced in Attachment 3.1, which will guarantee McMinn County with sufficient disposal capacity and provide an additional convenience center, which will meet its statutory requirement for two convenience centers.

The county will continue its contractual, curbside service with local haulers that provide service to most McMinn County’s residents who live outside municipal boundaries.

**Item 4-Solid Waste Collection System**

*Provide a detailed description of 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.*

McMinn County has one convenience center strategically located to maximize access to all residents (see attached map). The center is located at the McMinn County Landfill, and is open Monday through Friday, 7:30 a.m. to 6:00 p.m., Saturday from 8:00 a.m. to 6:00 p.m., and Sunday 1:00 pm to 6:00 pm. One other recycling center is in the City of Athens (see Attachment II for details).

Private contractors operate waste collection services that cover a large part of the county. The county contracts with these haulers to assure service to all areas of the county. However, individual households must pay for the service.

The minimum number of convenience centers required is calculated using the formula that determines a reasonable number by land area rather than population. With a current non-municipal population of about 33,837, the minimum required number of centers would be four (4). However, much of this population is served by local haulers.

**Table 4.1 – Required Waste Collection System: Convenience Center**

|                        | <b>Total Square Miles</b> | <b>Collection Service Provided/Not Populated</b> | <b>Difference</b> | <b>Required Centers</b> | <b>Existing Centers</b> |
|------------------------|---------------------------|--|-------------------|-------------------------|-------------------------|
| McMinn                 | 327                       |  |                   |                         |                         |
| Athens                 |                           | 13.54  |                   |                         |                         |
| Calhoun                |                           | 1.02   |                   |                         |                         |
| Englewood              |                           | 1.70   |                   |                         |                         |
| Etowah                 |                           | 2.77   |                   |                         |                         |
| Niota                  |                           | 2.01   |                   |                         |                         |
| Public Lands/Water     |                           | 2.00   |                   |                         |                         |
| Timber/Fed. Government |                           | 10.00  |                   |                         |                         |
| <b>Total:</b>          | <b>327</b>                | <b>33.04</b>                                     | <b>293.96</b>     | <b>1.63</b>             | <b>1</b>                |

As previously indicated in Section 3, a new agreement with Waste Connections, Inc. will include access to a new convenience center at the Meadow Branch Landfill, which will bring the number of required convenience centers in line with statutory requirements, which are in addition to the higher level of service already in place

## **Recycling**

McMinn County's recycling program is located at the landfill convenience center along with all other waste reduction activities. These include waste tire collection and demolition waste diversion.

### **McMinn County Convenience Center**

#### **Material: Destination**

Cardboard: Westrock  
Mixed Paper/Newsprint: Westrock  
Plastics: Westrock  
Scrap Metals: Seaton Metals  
Used Oil: In-house heating  
Aluminum Cans: Seaton Metals  
Lead Acid Batteries: Local auto parts

Cardboard, paper, metal cans, and plastics are hauled to WestRock in Chattanooga, TN for recycling. Most of the scrap metal is taken to Seaton Metals in Athens.

In addition to the county's program, the cities of Athens and Etowah have centers that accept materials for recycling. Materials recovered are as follows:

### **City of Athens Recycle Center**

#### **Material: Destination**

Aluminum: Seaton Metals  
Metal cans: Westrock  
Cardboard and paper: Westrock  
Plastics, 1 & 2: Westrock  
Glass: Westrock  
Motor oil and antifreeze: Heating public buildings/local auto parts  
Automotive batteries: Local auto parts  
Electronics: Behops Glass Works  
Oil based Paints: Clean Harbors

The city also diverts all brush and yard waste to a facility where it is chipped and/or pulped and used for beneficial city projects.

City of Etowah Convenience Center (new)

Material: Destination

Electronics: Behops Glass Works

Scrap metal: Seaton Metals

Latex: Used for in-house projects

Used motor oil: Public works heating

All other material not listed above becomes residual landfill material subject to decomposition.

**Item 5-Analysis of Existing or Potential Solid Waste Flows within the Region and Between Adjacent Regions**

*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 page-size, scaled county map indicating the location of all solid waste facilities**, including convenience centers, transfer stations, recycling centers, waste tire drop-off sites, used oil collection sites, paint recycling centers, all landfills, etc. Identify any short comings in service and note what might be needed to fill this need.*

McMinn County has a full range of waste collection services from convenience centers to curbside collection available to all county residents.

**Solid Waste Staffing**

The McMinn County's waste collection and disposal system (as of 2015) is organized as follows:

Landfill Manager: 10 Equipment Operators  
1 Administrative person  
2 Part-time workers

Due to the county landfill not accepting waste (for the time being), these staffing numbers could fluctuate in the future. The attached maps provide a view of solid waste facilities located in McMinn County. In general, there are enough facilities available to handle all Class I, recycling, and waste reduction activities. Used oil collection points are somewhat concentrated within the City of Athens.

The City of Athens has a Sanitation Coordinator who supervises a staff of five employees

four equipment operators, and two drivers. In addition to residential waste collection, the city provides collection services to commercial and industrial customers for a fee.

The Town of Englewood contracts with Superior Sanitation for curbside waste collection services. There are no Town employees involved in waste collection or processing.

Etowah’s Sanitation Director supervises 2 drivers and 3 laborers for curbside residential waste collection. Laborers are also responsible for the city’s convenience center.

The county contracts with waste haulers to provide waste collection throughout the county. Local haulers include:

- AW Waste
- J&F Disposal
- K and K Disposal
- Sanders Disposal Service
- Superior Sanitation LLC
- Zter’s Waste Value

Most of the waste reduction gains have come from the inclusion of Class III/IV waste and industrial, in-house programs. If these programs remain permissible methods of waste reduction, the county will be able to meet the “real time” reduction goal.

**Table 5.1: Regional Landfills**

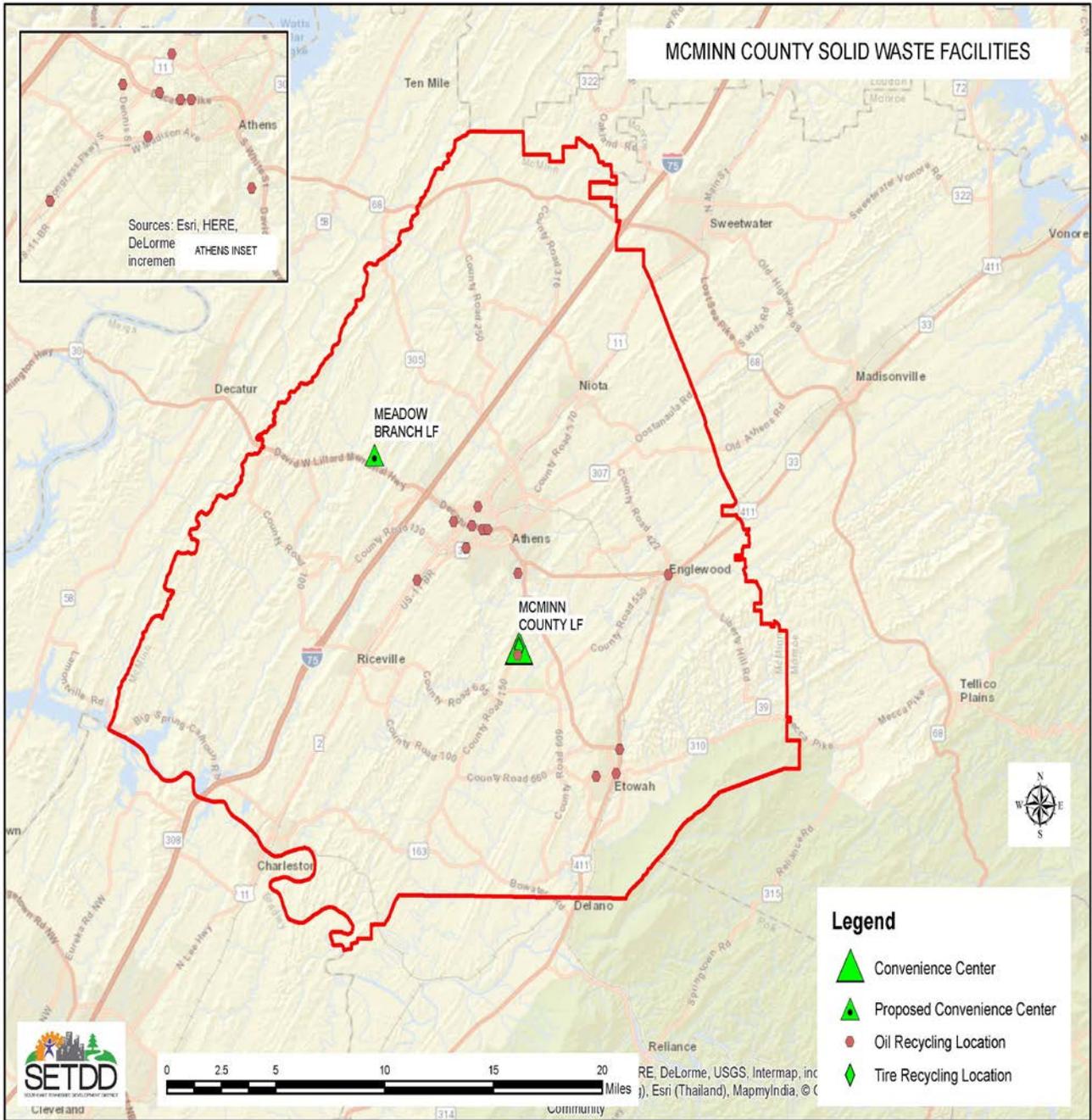
| Site Name(s)            | Annual Tons McMinn County (as of 2015, not accepting waste in 2016) | Permit Number | Current Capacity -as of Jan. 2016 | Maximum Capacity | Projected Life of Facility |
|-------------------------|---|---------------|-----------------------------------|------------------|----------------------------|
| McMinn County Landfill  | 30,000  | SNL 54—0003   | 0 tpd                             | 1,000 tpd        | 19 years                   |
| McMinn Co. Class III/IV | 20,000  | DML 54-0098   | 200 tpd                           | 1,000 tpd        | 19 years                   |
| Meadow Branch Landfill  | 400,000   | SNL 54-0174   | 1,095 tpd                         | 1,200 tpd        | 3.17 years                 |
| Total:                  | 450,000   |               |                                   |                  |                            |

**N/A** = Not available due to private ownership/operation.

Note: Capacity limits are estimates. Landfills can handle all local waste plus large volumes of waste hauled from other counties. Projected life estimates are based on current disposal volumes, which can change considerably in short time periods. The Class III/IV landfill is adjacent to the McMinn County Class I facility.

**Table 5.2: Regional Collection Systems**

| Provider of Service                        | Service Area         | Population Total Under This Service | Frequency of Service (Weekly, Bi-weekly, on call, etc.) | Annual Tonnage Capacity | Type Service (Curbside, Convenience Center, Green Box) |
|--|----------------------|-------------------------------------|---|-------------------------|--|
| McMinn County                              | County-wide drop-off | 53,616                              | As Needed   | 10,000                  | Convenience Center                                     |
| City of Athens                             | City Limits          | 13,634                              | Weekly  | 12,400                  | Curbside   |
| Town of Calhoun                            | City Limits          | 495                                 | Weekly  | 450                     | Curbside   |
| Town of Englewood                          | City Limits          | 1,539                               | Weekly  | 1,400                   | Curbside   |
| City of Etowah                             | City Limits          | 3,500                               | Weekly  | 3,200                   | Curbside   |
| City of Niota                              | City Limits          | 718                                 | Weekly  | 650                     | Curbside   |
| Private Hauler Under Franchise with County | Unincorporated Area  | 20,000 (Estimate)                   | Weekly  | 18,250                  | Curbside   |



# McMinn County Landfill



**Item 6-Analyze Attitude of Region Toward Waste Management in General and Specify Needed Changes and/or Educational Measures**

*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.*

As the Keep McMinn Beautiful website ( [www.ktnb.org/affiliates/mcminn.htm](http://www.ktnb.org/affiliates/mcminn.htm)) states: "Keep McMinn Beautiful organization is volunteer-based, led by a 30-member board of directors serving three-year terms on a rotating basis. The board of directors is appointed by the mayors of each of the municipalities within McMinn County and by the McMinn County Executive. KMB funding comes from TN Department of Transportation Litter Grant Program, the City of Athens, and private donations. This is the primary solid waste education group in the county. KMB works closely with the City of Athens and the County with special events, volunteer recruitment, and other activities."

Current attitudes of the citizens of McMinn County toward recycling and waste reduction efforts have basically been about average for Counties of similar size, population, and economic vitality. While there are some residents that fully support and participate in the drop-off recycling program, most residents are still reluctant to view recycling and waste reduction as an option. The current general feeling is that most residents approve of recycling as an option to waste disposal but are not motivated to participate consistently. If measures could be implemented, a program designed to show the public the environmental and financial benefits to the community of recycling and waste reduction programs should be implemented.

**Item 7-Evaluation of the Waste Reduction Systems for Counties & Municipalities in Region**

*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 it 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.*

The following table generated by the Re-Trac™ program indicates that the county increased the amount of per capita waste but shows a substantial "real time" reduction. This contradiction can only be resolved by the assumption that more waste existed (or came into existence) than was accounted for in previous studies. Unfortunately, we cannot go back to the base year and determine what the actual quantities were, so meeting that goal may be impossibility if the original numbers were inaccurate.

**Chart 7.1-SE TN Solid Waste Planning Region-2015 APR Diversion Rate Table**

SE TN 2014 APR Data

| County            | % Reduction Compared to Base Year | MSW % Reduction Pop Ratio | MSW % Reduction Using Pop Econ Ratio | Real Time Comparison | Maximum % Reduction Qualified For | Is county in Compliance? |
|-------------------|-----------------------------------|---------------------------|--------------------------------------|----------------------|-----------------------------------|--------------------------|
|                   | 23%                               | 23%                       | 11%                                  | 33%                  | 33%                               | Yes                      |
| <b>Bledsoe</b>    |                                   |                           |                                      | 2%                   | 2%                                | No                       |
| <b>Bradley</b>    |                                   |                           |                                      | 12%                  | 12%                               | No                       |
| <b>Grundy</b>     |                                   |                           |                                      | 3%                   | 3%                                | No                       |
| <b>Hamilton</b>   |                                   |                           |                                      | 40%                  | 40%                               | Yes                      |
| <b>Marion</b>     |                                   |                           |                                      | 48%                  | 48%                               | Yes                      |
| <b>McMinn</b>     |                                   |                           |                                      | 30%                  | 30%                               | Yes                      |
| <b>Meigs</b>      |                                   |                           |                                      | 6%                   | 6%                                | No                       |
| <b>Polk</b>       |                                   |                           |                                      | 3%                   | 3%                                | No                       |
| <b>Rhea</b>       |                                   |                           |                                      | 24%                  | 24%                               | No                       |
| <b>Sequatchie</b> |                                   |                           |                                      | 23%                  | 23%                               | No                       |

McMinn County is a part of the Southeast Tennessee Solid Waste Planning Region. The Southeast Tennessee Solid Waste Planning Region has always met the required 25% goal. McMinn County met the goal individually in 2015, with a reduction rate of 31%, primarily because about 19% of the waste stream was diverted to the Class III/IV landfill.

The region did not meet the goal using the base year method, probably because the base year generation rate was incorrect. During the early phases of solid waste planning in Southeast Tennessee there were waste haulers moving materials in and out of neighboring Georgia and Alabama. Often, haulers were not required to report quantities hauled in or out of the state, and landfills in these states did not keep waste origin records. Consequently, base year numbers for the Southeast Tennessee region have always been suspect.

Steps to increase recycling rates include a new recycling center in the City of Etowah, which will be in operation by January 2017. In addition, recycling will be available at a new convenience center located at the Meadow Branch Landfill just west of the City of Athens.

**Item 8-Collection/Disposal Capacity and Projected Life of Solid Waste Sites**

(a) Using the example shown below, provide a chart indicating current collection and disposal capacity by facility site and the maximum capacity the current infrastructure can handle at maximum through put. 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: Regional Landfills**

| Site Name(s)            | Annual Tons McMinn County (as of 2015, not accepting waste in 2016) | Permit Number | Current Capacity -as of Jan. 2016 | Maximum Capacity | Projected Life of Facility |
|-------------------------|---|---------------|-----------------------------------|------------------|----------------------------|
| McMinn County Landfill  | 30,000  | SNL 54—0003   | 0 tpd                             | 1,000 tpd        | 19 years                   |
| McMinn Co. Class III/IV | 20,000  | DML 54-0098   | 200 tpd                           | 1,000 tpd        | 19 years                   |
| Meadow Branch Landfill  | 400,000   | SNL 54-0174   | 1,095 tpd                         | 1,200 tpd        | 3.17 years                 |
| Total:                  | 450,000   |               | 1,295 tpd                         | 3,200 tpd        | 41.17 years                |

Note: Capacity limits are estimates. The Meadow Branch Landfill can handle all local waste plus large volumes of waste hauled from other counties. Projected life estimates are based on current disposal volumes, which can change considerably in short time periods. The Class III/IV landfill is adjacent to the McMinn County Class I facility.

As indicated in Table 8.1, there is enough landfill capacity to handle all of McMinn County’s needs far into the future. From a regional point of view, there is unlikely to be a paucity of capacity within the next decade.

**Item 9-Unmet Financial Needs and Cost Summary**

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

**Chart 9.1**

| <b>EXPENDITURES</b>                                   |                      |                     |                                       |
|---|----------------------|---------------------|---------------------------------------|
| Description   | Present Need \$/year | Unmet Needs \$/year | Total Needs (Present + Unmet) \$/year |
| General Admin   |                      |                     |                                       |
| Transportation/hauling                                |                      |                     |                                       |
| Collection and Disposal Systems                       |                      |                     |                                       |
| Equipment   |                      |                     |                                       |
| Sites   |                      |                     |                                       |
| Convenience Center                                    |                      |                     |                                       |
| Transfer Station                                      |                      |                     |                                       |
| Recycling Center                                      |                      | \$50,000            | \$50,000                              |
| MRF   |                      |                     |                                       |
| Landfills   |                      |                     |                                       |
| Site  |                      |                     |                                       |
| Operation   | \$1,304,468          |                     | \$1,304,468                           |
| Closure   |                      |                     |                                       |
| Post Closure Care                                     | \$159,332            |                     | \$159,332                             |
| Administration (supplies, communication costs, etc.)  |                      |                     |                                       |
| Education   |                      |                     |                                       |
| Public  |                      |                     |                                       |
| Continuing Ed.  |                      |                     |                                       |
| Other   |                      |                     |                                       |
| <b>REVENUE</b>  |                      |                     |                                       |
| Solid Waste Disposal Fee                              | \$1,531,664          |                     | \$1,531,664                           |
| Tipping fees  |                      |                     |                                       |
| Property taxes  |                      |                     |                                       |
| Sales tax   |                      |                     |                                       |
| Surcharges  |                      |                     |                                       |
| Disposal Fees   |                      |                     |                                       |
| Collection charges                                    |                      |                     |                                       |
| Industrial or Commercial charges                      |                      |                     |                                       |
| Residential charges                                   |                      |                     |                                       |
| Convenience Centers charges                           |                      |                     |                                       |
| Transfer Station charges                              |                      |                     |                                       |
| Sale of Methane Gas                                   |                      |                     |                                       |
| Other sources: (Grants, bonds, interest, sales, etc.) | \$35,436             |                     | \$35,436                              |

**Item 10-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. (Use Chart 9 as an example to present data).*

McMinn County's audit shows a beginning loss of \$1,183,719, and at the end of fiscal year 2015, the landfill had made a modest \$103,600 gain against that loss. Due to the previously-discussed loss of county landfill business to the private Meadow Branch landfill, the county had continued to lose both public and private customers and county officials expect a drop in revenue. Due to this continued loss of business and revenue, McMinn County decided to "mothball" its county landfill in January 2016 and to no longer accept Class I waste for the time being. This will allow the county to cut down on expenses, while still leaving future options open, by not outright closing the landfill.

Under "Unmet Needs" an estimate of \$50,000 was included to fund recycling at the convenience center that will be in place at the Meadow Branch Landfill. These funds would be used to purchase a compactor and receiver box for cardboard (about \$25,000 installed); at least three 30 yd<sup>3</sup> roll-off containers for paper and metal; and a used oil collection container.

**Item 11-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**.*

The Southeast Tennessee Region has implemented its original 1994 plan (approved in 1995), which has been updated primarily through annual reports. Each county makes autonomous decisions regarding their respective solid waste systems which do not require the ratification of the regional solid waste board. Taken the region has always met the solid waste reduction goal using "real time" methods.

Goal 1 in the State's Solid Waste Materials Management Plan 2025 is to reduce the per capita waste from 5.17 pounds/person/day to 4 lbs. by 2020 and 3.5 lbs. by 2025 (p.68). Excluding industrial waste at four Class II landfills and Class III/IV waste, McMinn County produced about 74,836 tons per year from a population of about 52,626 in 2015 as listed in the 2014 "TDEC Compliance Formulas. This amounts to 7.8 lbs./person/day, which is far above the State goal for 2020. Per the Environmental Protection Agency, on average, U.S. citizens produced 4.4 lbs./person/day<sup>1</sup>.

If McMinn County's rates are so much higher than the national average, it is probable that the waste generated is from industrial sources that are beyond the control of local governments. It is therefore necessary for the county to determine where the waste is generated before it can develop a plan to deal with the situation. It is evident that an expansion of recycling and waste diversion programs are necessary as well, but the county can only target residential waste because that is all it can control.

Goal 2 indicates a Class III/IV waste reduction goal. Currently, the real-time waste diversion is 19%.

McMinn County has not met Goal 3, which is a 33.9 percent recycling rate, rising to 35% by 2025. For the Region in 2015, the waste reduction was 33%, but that includes waste diverted to Class III/IV landfills, not just recycling.

These goals are very ambitious and will require a large investment in infrastructure and education for the county and the region to meet. In addition, the county will need to determine

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<sup>1</sup> EPA,"Advanced Sustainable Materials Management: Facts and Figures 2013.

where waste is generated to determine if it has the capability to have some control over all the waste streams flowing into the Class I facility.

Waste disposal facilities have sufficient space to handle all the county's waste for more than ten years. There are at least two facilities that can handle McMinn County waste and both are well maintained although one will be "moth balled" as previously discussed under *Item 2*. No improvements are necessary. The recycling program is operated in an efficient manner, there is a concerted effort to collect household hazardous waste, and there are ample methods available to divert materials from the Class I facility.

Problems with waste reduction strategies could arise in the future if Class III/IV landfills are no longer accepted as diversion alternatives. Should this occur, McMinn County would no longer meet the waste reduction goal. Consequently, plans should be in place to mitigate this possibility.

Local recycling programs have been affected by the availability of markets and the price received for materials. McMinn County is midway between Knoxville and Chattanooga, and most end user markets are in these cities. Consequently, haul distances are set at about 50 miles, the distance to either city. Material prices must be at least equal to the cost of getting to the markets, and that is not always the case. However, the County has managed to maintain an effective recycling program and implement a waste diversion system that has saved a large amount of space in the Class I facility. The City of Athens has assisted, not only with a recycling program, but with a wood waste diversion system that effectively diverts most yard waste to a beneficial re-use.

## **Recommendations**

### **Education**

**Recommendation 1:** Include more specific information on the County's website to stress waste reduction, recycling, and available options for diversion.

**Action Item:** Update website

**Recommendation 2:** Advertise locations and hours of operation for recycling centers

**Action Item:** Increase signage, newspaper ads, and on-line resources

### **Facilities and Programs**

**Recommendation 1:** Establish school-based recycling programs

- Action Item 1:** Enlist help of teachers/student organizations  
**2:** Request grant funds from the Solid Waste Management Fund

**Recommendation 2:** Assist local governments with developing and improving recycling programs.

- Action Item 1:** Grant assistance for the City of Etowah's recycle center  
**2:** Technical assistance to develop recycling centers in other municipalities

**Recommendation 3:** Attempt to determine the origin of primary waste streams from industrial, commercial, and institutional sources.

- Action Item 1:** Interview landfill staff and attempt to obtain information from haulers.  
**2:** Contact the U.T. Center for Industrial Services for assistance.

### **Sources:**

- US Census: <http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>
- UTK Center for Business and Economic Research: <http://cber.utk.edu/>
- TN Department of the Comptroller
- U.S. Department of Commerce, Bureau of Labor Statistics
- U.S. Cluster Mapping Project (<http://clustermapping.us/>), Institute for Strategy and Competitiveness, Harvard Business School. Data Sources
- US Bureau of Economic Analysis: <http://www.bea.gov/>
- Southeast Tennessee Comprehensive Economic Development Strategy <http://www.sedev.org/downloads/SETDD2015DraftCEDUpdate.pdf>
- TACIR: <https://www.tn.gov/tacir/>
- USDA, Census of Agriculture 2013
- Environmental Protection Agency, "Advanced Sustainable Materials Management: Facts and Figures 2013".
- Daily Post-Athenian, January 6, 2016

