

ANNUAL REPORT
to the
GOVERNOR and GENERAL ASSEMBLY
on the
SOLID WASTE MANAGEMENT ACT OF 1991
Fiscal Year 2008-2009



Tennessee Department of Environment and Conservation
Division of Solid Waste Management
Solid Waste Assistance Programs
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Introduction

The Solid Waste Management Act of 1991 requires an annual report to be made on Tennessee's Solid Waste Management System (SWMS). The Department of Environment and Conservation (TDEC) Division of Solid Waste Management (SWM) and Office of Environmental Assistance (OEA) have collaborated to produce the 2008-09 Tennessee Solid Waste Management Annual Report. This document is submitted to the Governor and General Assembly as required by Tennessee Code Annotated (TCA) §68-211-873.

Tennessee's SWMS is intended to further the protection of public health and enhance the quality of the environment. Through the SWMS, TDEC acts as a facilitator for waste reduction by collaborating with county and municipal governments, industry and contract agencies. The goal is to coordinate the activities of these groups to maintain adequate health and safety standards, protect the environment through facility design and location, and maximize the utilization of resources that would otherwise be disposed at solid waste facilities

Overview & History

Concern for solid waste issues has been prevalent since the United States Congress enacted the Solid Waste Disposal Act of 1965. During the 1980s, public interest in solid waste management rose to new levels because of shrinking landfill capacity, increasing disposal costs, and opposition to the siting of new landfills. To address this, the Federal government enacted the Resource Conservation and Recovery Act. Subtitle D of this law provides regulatory exemptions and other incentives that encourage the reuse of recoverable material (United States Environmental Protection Agency, Office of Solid Waste, Communications, Information, & Resources Management Division ([US EPA OSW CIRMD], 1998, p. II-1).

Coincidentally, in the late 1980s, local governments in Tennessee were faced with the expensive and often controversial challenge of finding environmentally safe disposal capacity for municipal solid waste. Lawmakers, public administrators, technical assistance providers, and industry collaborated to find a solution. The consensus was that long-range planning was essential for local governments to meet State and Federal mandates regarding modern, safe municipal solid waste disposal. The Act, a direct result of these discussions, placed as one of its major roles development of tools to help local governments, industry, and the public make better choices in dealing with solid waste issues ([US EPA OSW CIRMD], 1998, p. II-2).

By 1995, the Environmental Protection Agency (EPA) had developed an integrated, hierarchical approach to waste management ([US EPA OSW CIRMD], 1998, p. II-3). This was known as the "Integrated Solid Waste Management System." To mirror the waste management system established by EPA, TDEC developed its own SWMS. Tennessee's SWMS is intended to facilitate regulatory activities and enforcement by TDEC. The Act challenged each Region to reduce the amount of solid waste disposed in Class I landfills and incinerators by 25%. Originally, the Act set 1989 as the base year for calculation of the 25% solid waste reduction goal and December 31, 1995, was set as the date to meet the reduction goal (Solid Waste Management Act, Plan for Disposal Capacity & Waste Reduction, 1991).

The Act set forth specific provisions to further this waste reduction goal. One provision was the establishment of the Solid Waste Management Fund (the Fund). The Fund was established to provide financial support in addressing waste avoidance, waste reduction, recycling, composting, and household hazardous waste disposal. As identified by the General Assembly, education, technical assistance, and economic incentives are the tools to be used in support of this mission (Solid Waste Management Act, Solid Waste Management Fund, 1991).

Monies for the Fund are generated from a \$0.90 surcharge assessed on every ton of municipal solid waste disposed in Tennessee's Class I landfills or incinerators. Amendments in 2007 extended the surcharge and increased it from the previous rate of \$0.75 cents per ton to the existing \$0.90 per ton. In addition to the disposal surcharge going to the Fund, retail tire dealers collect a pre-disposal fee for each new tire sold in Tennessee. Amendments in 2007 increased this amount from \$1.00 per tire to the current rate of \$1.35. Tire dealers continue to keep 10 cents per tire to cover administrative costs. The remaining \$1.25 is remitted to the Department of Revenue to be deposited into the Fund (Solid Waste Management Act, Expenditure of Revenues, 1991).

The Act was amended in 1999 and established December 31, 2003, as the date for Municipal Solid Waste Planning Regions (solid waste planning entities) to meet the 25% per capita (by weight) reduction and diversion goal for municipal solid waste (MSW) disposed in Class I landfills or incinerators. The 1999 amendment established 1995 as the new base year (Solid Waste Management Act, Solid Waste Reduction & Diversion Goal, 1991). Additionally, the 1999 amendment allowed for the economic growth of a region to be used as one factor in determining compliance with the 2003 goal (Solid Waste Management Act, Basis for Goal, 1991). Each Region that did not meet the December 31, 2003 deadline was required to have its solid waste program qualitatively assessed to determine if a "good faith" effort was made toward achieving the goal. Rules specifying the methodology to be used for the qualitative assessment of regional solid waste programs were fully promulgated August 6, 2006. The first qualitative assessments were completed in the winter of FY 2008-09.

Amendments to the Act in 2007 deleted the December 31, 2003 deadline for meeting the 25% waste reduction and diversion goal making it an on-going goal. These amendments added a requirement for the regional solid waste plans to include a management plan for disaster debris; clarified sanctions for noncompliance with submittals of regional solid waste plans and updates; added language allowing TDEC to award grants for establishment of permanent household hazardous waste collection sites to municipalities or counties with large populations or high participation at the mobile events; added language that provide for grants to counties or municipalities that own and previously operated old closed landfills without composite liners that are determined to be causing harm to the environment through groundwater contamination; allowed for the Fund to be used for proper disposal of hazardous waste from K-12 schools; increased the tipping fee surcharge as noted previously; and allowed for a thorough review of the waste reduction and diversion goal to consider incentives and disincentives to promote recycling and waste reduction. Certain other housekeeping changes were also included in these amendments.

Waste Reduction Task Force

Upon approval of amendments to the Act, the Department requested that the Solid Waste Advisory Committee begin a review and make recommendations to update the State's waste reduction goal and identify waste reduction practices the State should implement.

In September 2007, the Solid Waste Advisory Committee, acting on amendments to the Solid Waste Management Act directing a review of the State's waste reduction and diversion goal, set up a twenty-three member task force comprised of solid waste professionals from across the state. The members of this task force included those representing local governments (solid waste directors, county and municipal mayors, aldermen, rural, urban, and large cities,) private industry representatives, the environmental sector, and the energy sector.

The Waste Reduction Task Force (WRTF) was supported by a large group of technical assistance providers including the University of Tennessee's County Technical Assistance Service and the Center for Industrial Services, Recycling Marketing Cooperative for Tennessee, and several development districts. Various speakers and organizations were brought in to support and inform the WRTF in their discussion on the many topics reviewed. A professional facilitator was hired for the discussions and to make sure the objectives of the task force were met. Four work groups were further organized by the members of the WRTF to take an even closer look at the topics and make recommendations for action to the entire task force. An eighty (80%) percent consensus of the WRTF was set to move recommendations forward to the Solid Waste Advisory Committee.

Another bill approved in the 2007 legislative session directed the Department to enter into contract with Tennessee State University for a waste characterization study of waste going into Class I landfills and identification of methods of waste reduction. This work was to be undertaken with the final report to coincide with decisions from the WRTF. The waste characterization study was finalized on December 15, 2008. In this study, the impacts of potential future bans of various recyclable materials from landfills are calculated. The report also provides a breakdown of Tennessee's disposal from sampling at two landfills and extrapolates that data into a broad picture of disposal trends statewide. This study with additional data will aid in the development of better waste management strategies in Tennessee.

The WRTF concluded its work in late May 2008 where it recommended sweeping waste reduction reforms that would bring the state more in line with its neighbors and to address the continued increasing disposal rates across the state. The recommended reforms included a new waste reduction and recycling goal making everyone responsible for waste reduction, a series of landfill bans, redefining of some current diversion methods as disposal, infrastructure improvements and monetary changes to tipping fees.

These waste reduction and recycling concepts were approved by the Solid Waste Advisory Committee, with a few modifications and recommended to the Department. The Department drafted rules incorporating the recommendations. The draft rules were presented to the Solid Waste Disposal Control Board for authorization to proceed with the rule making process. Based on comments from the Solid Waste Disposal Control Board, the draft rules were modified after

additional review and consideration of the Solid Waste Advisory Committee. A major change made was removing the requirements for landfill bans. The revised rules were re-presented to the SWDCB in June 2009 and approved for public comment scheduled for September 1, 2009.

Solid Waste Management System

The SWMS is a three-pronged approach to better manage Tennessee's solid waste. This includes providing and promoting technical assistance, education, and diversion/resource recovery. These activities are advanced through the collaborative efforts among TDEC, educational institutions, private organizations, and agencies at all levels of government.

To assist the implementation of the SWMS, the Act made each county a Solid Waste Planning District (Solid Waste Management Act, Municipal Solid Waste Planning District, 1991). The Districts, in turn, were allowed to collaborate with local municipalities and neighboring counties to form MSW Regions (Solid Waste Management Act, Municipal Solid Waste Regions, 1991). The Act requires each MSW region to develop a 10-year disposal plan for their solid waste, provide for solid waste education to its population, and plan to reduce the amount of waste it generates by 25% (Solid Waste Management Act, Municipal Solid Waste Region Plans, 1991).

Along with the 10-year plans, regions must prepare 5-year updates and Annual Progress Reports (APRs) that project foreseeable solid waste disposal requirements and proposed solutions. Sixty-eight regional planning boards have the responsibility for developing the plans and for reporting this information to TDEC. The legislature amended the Act in 2004 to allow the APR to be used in lieu of the regional 5-year capacity update. Each region now uses its APR to project changes in solid waste generation and to modify its 10-year plan (Solid Waste Management Act, Municipal Solid Waste Region Plans, 1991).

To implement the SWMS, TDEC disperses monies from the Fund in the form of grants and contracted services. Grants are given to local governments, educational institutions, MSW Regions, and development districts to aid in solid waste planning. Grants are also available to county and local governments to assist in solid waste facility upgrades, purchase of recycling equipment, recycling of waste tires and collection of household hazardous waste at permanent facilities.

References

- Solid Waste Management Act of 1991 [SWMA], Basis for Goal. §68-211-861(c). (LexisNexis 2001).*
- SWMA, Expenditure of revenues. §68-211-835(d). (LexisNexis 2001).*
- SWMA, Municipal solid waste planning district. §68-211-811(a). (LexisNexis 2001).*
- SWMA, Municipal solid waste region plans. §68-211-814(a). (LexisNexis 2001).*
- SWMA, Municipal solid waste regions. §68-211-813(a). (LexisNexis 2001).*
- SWMA, Plan for disposal capacity & waste reduction. §68-211-813(c). (LexisNexis 2001).*
- SWMA, Solid waste management fund. §68 211-821(a). (LexisNexis 2001).*
- SWMA, Solid waste reduction & diversion goal. §68-211-861(a). (LexisNexis 2001).*
- United States Environmental Protection Agency [US EPA], Office of Solid Waste, Communications, Information, & Resources Management Division. (1998).*

Disposal

Tons of Class I Disposal Per Tennessean Per Year By County

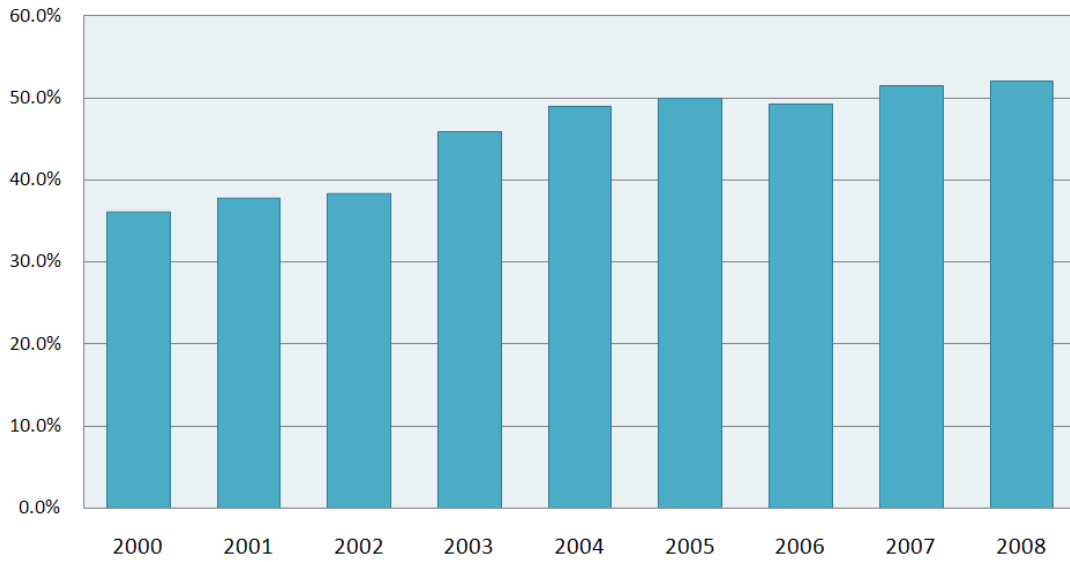
Under the terms of the Solid Waste Management Act of 1991, municipal solid waste planning regions were required to reduce the amount of waste placed into Class I landfills by 25% from a base year measurement taken in 1995. Tennesseans generated 7,013,854 tons of solid waste in 1995, equal to 1.34 tons per person per year. In 2008, Tennesseans generated 13,527,345 tons of solid waste with 6,482,274 tons disposed of in Class I landfills and 7,045,070 tons recycled, reused, or diverted to other disposal facilities. This equates to a disposal rate of 1.04 tons per person. Using the 1995 base year, the per capita waste reduction and diversion rate for 2008 is 21%.

Regions that do not meet the solid waste reduction and diversion goal have their solid waste programs qualitatively assessed to determine if a “good faith” effort was made toward achieving the goal. Rules adopted by TDEC in late 2006 established a method to assess Regions not meeting the goal. Qualitative assessments have been completed on five counties and recommendations for program improvement made for each county.

At the end of FY 2008-09, there were 35 permitted Class I (sanitary) landfills in Tennessee; 19 were publicly owned. There were 68 operating, permitted Class III and IV (construction & demolition) landfills. Approximately 1,721,452 tons of material was diverted away from Class I to Class III and IV landfills in calendar year 2008 according to the regions’ APRs. A total of 506 operating, permitted Convenience Centers are located throughout the state, most of which offer some level of recycling in addition to residential waste collection.

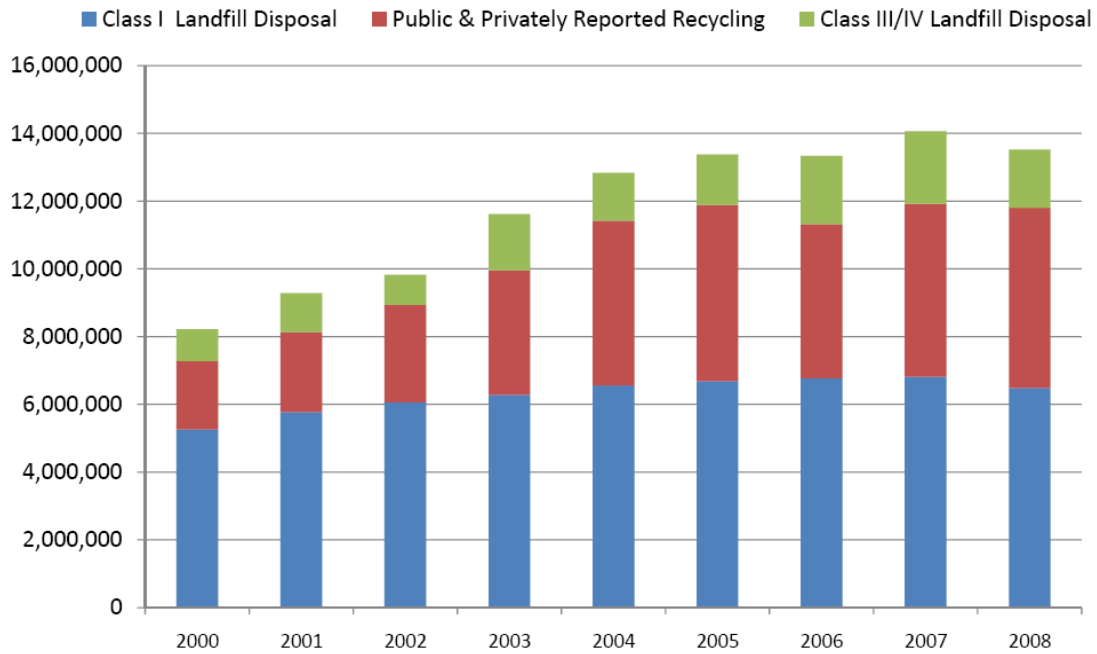
The following charts and tables summarize Tennessee's waste stream from 2000-2008.

Percentage of Waste Stream Diverted from Class I Landfills



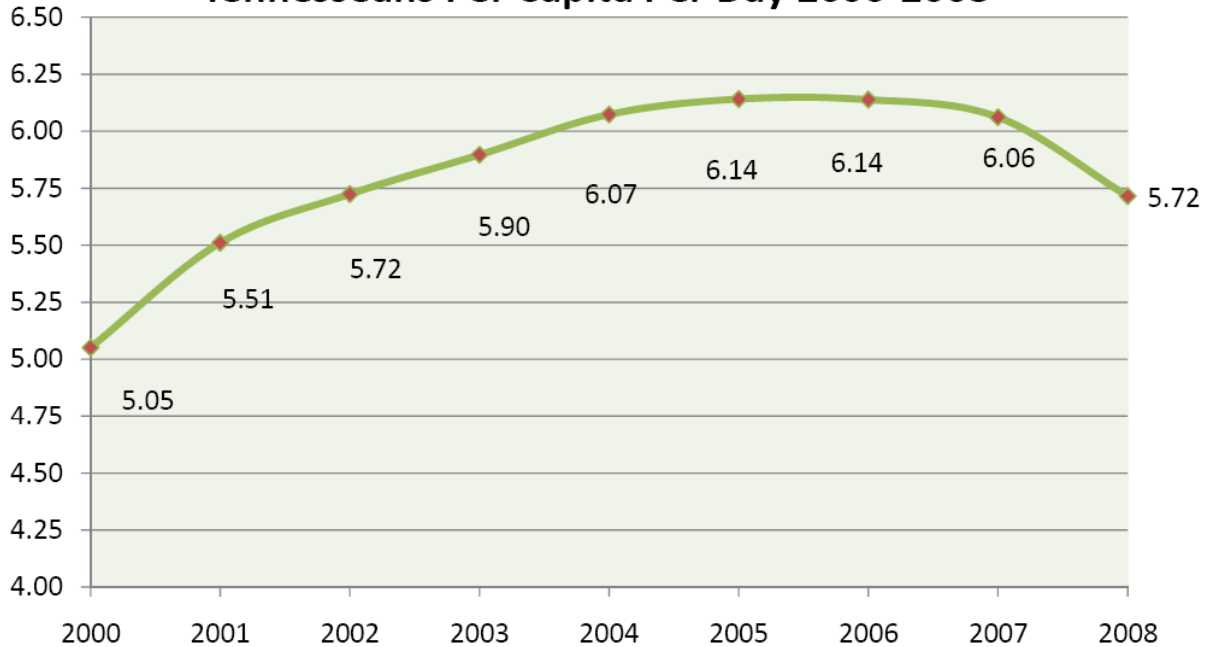
Source: TDEC Municipal Solid Waste Planning Regions Annual Progress Reports 2000-2008

2000-2008 Total Generation in Tons



Source: TDEC Municipal Solid Waste Planning Regions Annual Progress Reports 2000-2008

Pounds of Waste Placed in Class I Landfills by Tennesseans Per Capita Per Day 2000-2008



Source: TDEC Municipal Solid Waste Planning Regions Annual Progress Reports 2000-2008

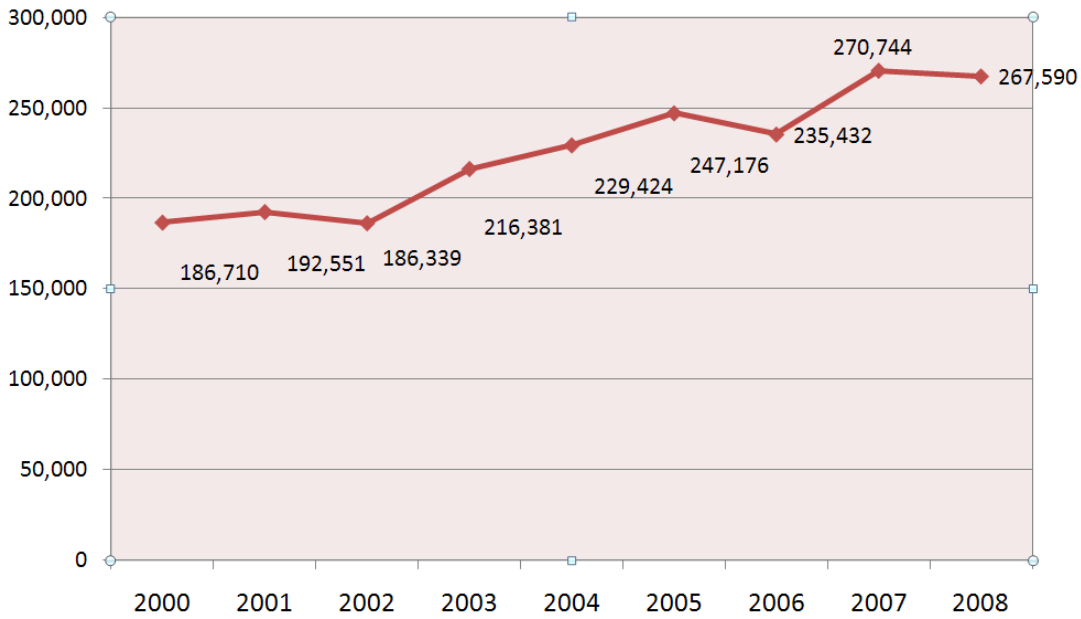
Waste Diversion

The Solid Waste Management Act of 1991 provides a goal for which waste is to be diverted away from Class I landfills. Although there are many ways in which materials might be diverted and beneficially used, publically hosted recycling programs of post-consumer goods are most often collected for benchmarking of programs and for national comparisons.

Through the use of APR's, each region's waste diversion efforts are measured. Most waste reduction efforts are reported through utilization of County Recycling Reports which are categorized as either public or private. For the sake of benchmarking, the following charts outline the post-consumer recycling efforts across the state for paper, metal, glass and plastic.

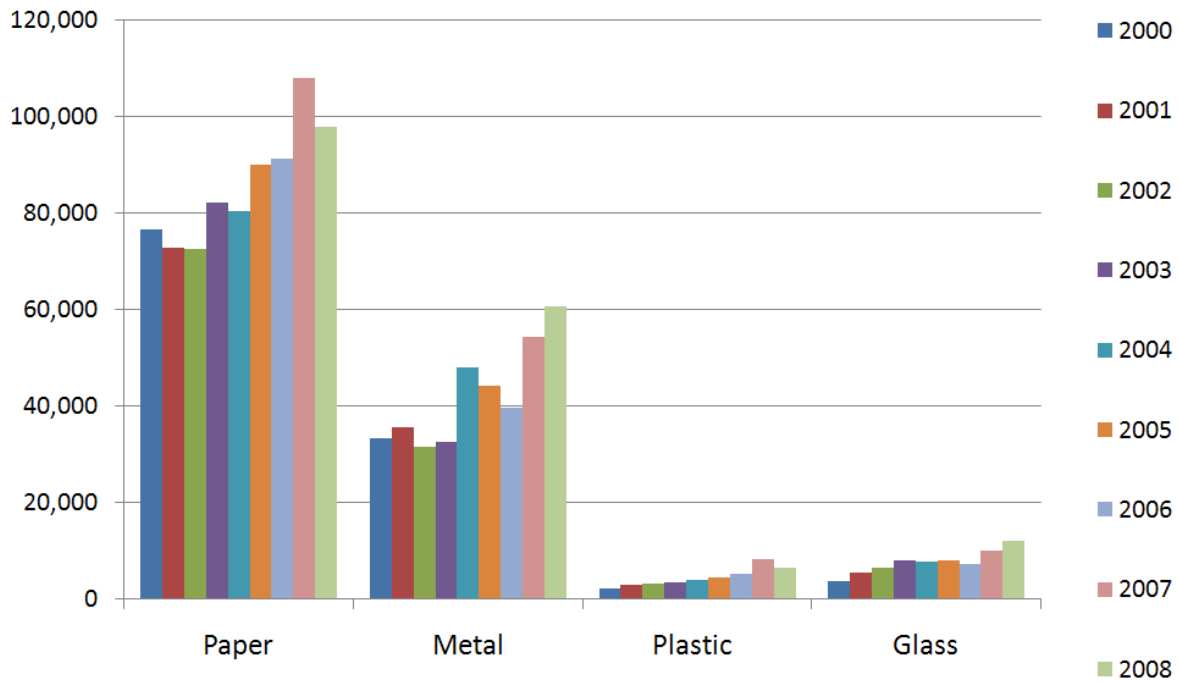
Paper, metal, glass, and plastic recycling is offered to residents and businesses throughout the state through various public collection programs operated or contracted through municipal or county governments.

Publicly Collected Paper, Metal, Plastic and Glass Recycled (in tons)



Source: TDEC Municipal Solid Waste Planning Regions Annual Progress Reports 2000-2008

Major Residential Commodities Recycled By Year 2000-2008 (In Tons)



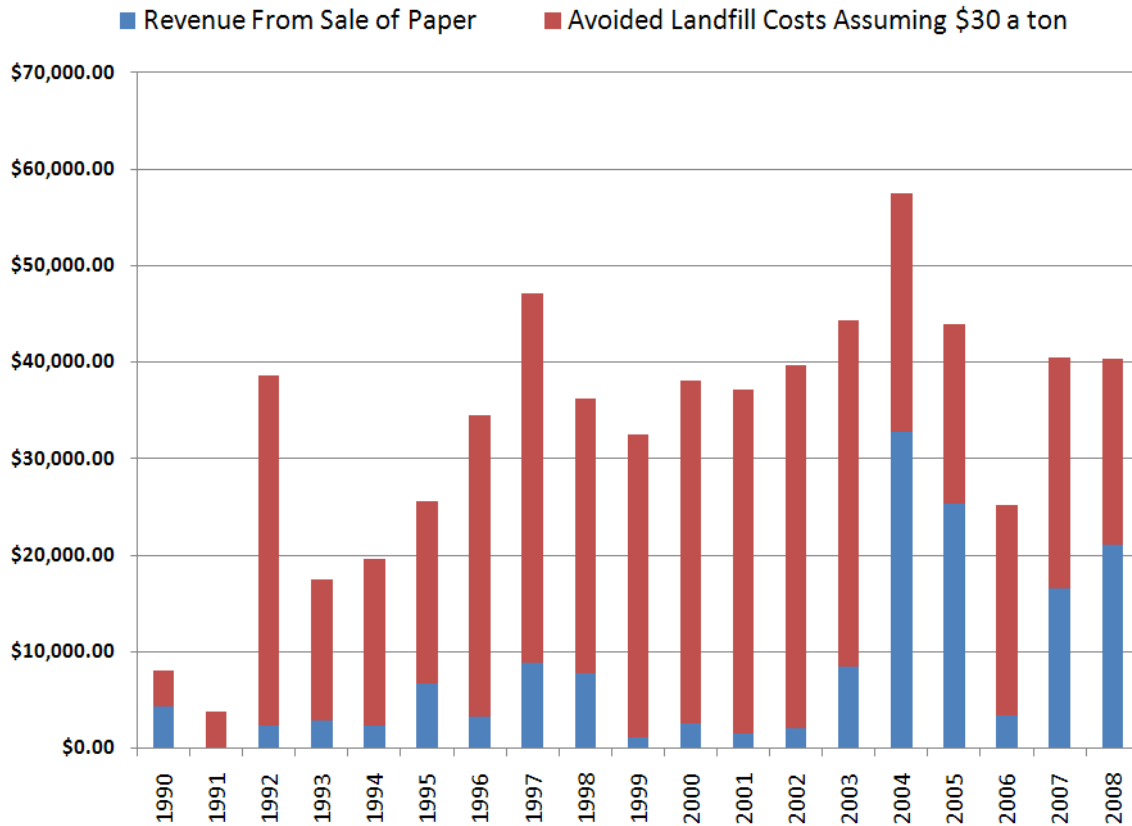
Source: TDEC Municipal Solid Waste Planning Regions Annual Progress Reports 2000-2008

Office of Environmental Assistance Programs

The State Employees Recycling Program

The State Employees Recycling Program (SERP) administered by the Office of Environmental Assistance (OEA), includes more than 24,532 state employees in 114 facilities.

From January 1, 1990 to December 31, 2008, state employees recycled 15,887.3 tons of mixed office paper. This produced revenue of \$153,747.27 for the state, while avoiding \$476,621.00 in landfill disposal costs. These revenues are deposited in the Solid Waste Management Fund to purchase new equipment for the program.



Source: Office of Environmental Assistance State Employee Recycling Program

State Parks Recycling Program

Currently 75 percent of the Tennessee State Park system has viable recycling programs in place, offering recycling opportunities to both staff and visitors. Recycling at the parks is accomplished through partnerships between the parks, SERP, and the local solid waste agencies. The SERP's key role was to provide technical and financial resources and the local programs provided options for recycling the materials. A few parks are serviced by the SERP contractor. A limited number of parks work directly with private vendors to generate revenue for the recyclable materials. The 2008 Seasonal Interpretive Recreation Program adopted recycling as a key project, working to invigorate existing programs and add recycling to parks without programs.

Tennessee Solid Waste Education Project

Tennessee Solid Waste Education Project (TNSWEP) is an educational project supported by the Fund and designed to help Tennessee students, teachers and local officials understand issues about solid waste management, source reduction, recycling, natural resource conservation, and environmental protection.

Since 1995, TNSWEP has provided consulting services, education materials, and training for K-12 teachers and students statewide. The staff coordinates TNSWEP services with TDEC's Green Schools program, and discusses opportunities and needs for incorporating activities relating to the solid waste component of the Tennessee Pollution Prevention Partnership.

In FY 2008-09, TNSWEP staff made 158 classroom presentations, and conducted 13 in-service trainings and curriculum workshop sessions for teachers and other solid waste educators. TNSWEP had more than 28 consultations with schools on the Green Schools and the School Chemical Cleanout programs.

Other notable initiatives included:

- Participating in Project Learning Tree, Project WET and Flying Wild workshops with CENTS program, The National Biology Teachers Association Conference held in Shelby County, the National Association for the Education of Young Children Conference held in Dallas TX attended by more than 10,000 educators
- Expansion of TNSWEP contacts through coordination with the Math-Science Partnership initiative.
- The Tennessee Academic Standards Awareness Workshop attended by more than 100 teachers.
- Incorporated waste management information into lesson plans for an Energy Conservation Program for Alcoa High School at which over 1,100 students benefited.

School Chemical Cleanout Campaign

The Office of Environmental Assistance's (OEA) School Chemical Cleanout Campaign (SC3) is a cooperative effort between the Tennessee Department of Environment and Conservation (TDEC) and Department of Education. It has received support from the Tennessee Organization of School Superintendents, Tennessee Science Teachers Association, and Tennessee Academy of Science. Major grant funding came from the US Environmental Protection Agency Programs of Pollution Prevention and Solid Waste Management.

This opportunity is offered under the umbrella of TDEC's Green Schools Program. TDEC staff researched and developed the SC3 project to clean out legacy chemicals from K-12 public and private schools in Tennessee. The management team is composed of staff from the Office of Environmental Assistance.

The primary goals are:

- To inventory and remove potentially dangerous legacy chemicals from schools.
- To conduct follow-up educational workshops for teachers on safe chemical management, lab safety regulations, and chemical waste disposal.
- To avoid future needs for a disposal program by encouraging Green Chemistry that uses less hazardous materials and Microchemistry in Tennessee K-12 schools.

The program has produced very successful results. By coordinating school cleanouts with TDEC's county Household Hazardous Waste (HHW) collections, disposal costs have been minimized. Schools submit an inventory or photos of unwanted chemicals, and then OEA and the HHW contractor segregate, pack and ship for proper disposal. The majority of the waste is incinerated in a hazardous waste incinerator. All mercury is recycled into new uses.

During FY 2008-09, thirty-four schools which entailed 25,826 students and teachers removed 10,087 pounds of legacy chemicals including 257 pounds of mercury and an estimated 2,957 pounds of formaldehyde.

Since its inception, the SC3 program has removed chemicals from 181 schools improving the health and safety of 143,330 students and 9,555 teachers. The Tennessee SC3 program has removed a total of 50,819 pounds of waste, including 1,085 pounds of mercury and an estimated 15,240 of formaldehyde.

In the fall of 2008, the Tennessee SC3 program assisted the Poarch Band of the Creek Indians in Atmore, Alabama, with a School Chemical Cleanout and mobile Household Hazardous Waste day for the residents of the reservation. The Poarch SC3 program has removed a total of 3,199 net pounds of waste, including 33 pounds of mercury and an estimated 960 pounds of formaldehyde, improving the health and safety of an estimated 2,459 students in five schools.

Technical Assistance

Development Districts

The Development Districts were established to assist local governments with planning and development services while also serving as a forum for local governments to solve common problems associated with economic development, environmental planning and community growth. The Districts assist local governments plan for the future by coordinating the establishment of regional and local priorities. In 1966, the Tennessee General Assembly passed legislation establishing the Development district network across Tennessee. There are 9 Development Districts serving all of Tennessee's 95 counties.

In FY 2008-09, Development Districts assisted local governments with solid waste management issues covering a wide-range of issues. Development Districts assisted in compiling data that was used in the preparation of the Municipal Solid Waste Planning Regions' Annual Progress Reports (APRs). The Districts prepared 36 APRs in FY 2008-09 and reviewed an additional 6 APRs prepared by local governments. In addition to the APR process, Districts continued to maintain regional solid waste plans and completed 12 District Needs Assessment updates required every 5 years by the Solid Waste Management Act.

Recycling Marketing Cooperative for Tennessee

The Recycling Marketing Cooperative for Tennessee (RMCT) is a nonprofit organization established in 1993 whose mission is to market Tennessee's recyclables through community cooperation and education. TDEC contracts with RMCT to help cities and counties market recyclables and provide technical assistance with program development, grant writing, and logistical planning. As the only statewide cooperative in Tennessee, RMCT benefits the Department by fulfilling the responsibilities of the Office of Cooperative Marketing under Section 68-211-826 of the 1991 Solid Waste Management Act. RMCT seeks the most cost effective markets for recyclables and combines materials from small recycling programs and larger programs to minimize transportation costs and maximize recycling monetary income.

During FY 2008-09, RMCT helped local solid waste programs market more than 4,582.65 tons of recyclable materials and collected over \$212,675 for those programs. By diverting recyclable materials from the waste stream and eliminating landfill costs, RMCT efforts saved local solid waste programs over \$146,645 based upon the average reported landfill gate fee of \$32 for disposal. During FY 2008-09, RMCT also provided assistance to 52 counties and 6 cities across Tennessee in marketing materials. RMCT helped multiple communities set up recycling programs and write grants. RMCT's goal beginning in FY 2006-07 was to provide free electronic scrap recycling. In 2009, many counties are now receiving up to \$0.15/pound for the recycled e-scrap. This program has proven very successful diverting 3,801.17 tons of e-scrap in FY 2008-09, saving the state \$2,750,526 in avoided costs to the mobile household hazardous waste program. This program is designed to lessen the growing impact of electronics on TDEC's mobile household hazardous waste collection events.

University of Tennessee-Center for Industrial Services

TDEC contracts with the University of Tennessee Center for Industrial Services (CIS) to provide Tennessee industry with technical assistance on waste identification and reduction. CIS also provides training, workshops, and assistance related to waste minimization, waste management planning, and reduction. The Tennessee Materials Exchange (TME) and the Recycling Markets Directory (RMD) are two recycling information clearinghouse websites maintained by CIS to benefit Tennessee industry and citizens of the state.

TME is a free service assisting industry to find markets for excess materials, by-products, and waste products that may be utilized by other industries as inputs to their industrial process. It promotes beneficial use of material resources, especially those considered wastes and that would otherwise be destined for disposal. TME lists materials available and materials needed and serves as an intermediary between the two parties. The TME listings are updated monthly on their website.

The RMD is an Internet based database of companies that actively recycle materials generated in Tennessee (companies with expansion plans are not listed until in-state facilities are operational). The website is searchable by company name, by company location, or by types of material handled. The database is constantly evolving and is regularly updated.

During FY 2008-09, CIS produced a study enabling SWM to receive approval from the Division of Groundwater Protection to use tire chips as an aggregate replacement in septic line leach fields. They also studied hydrogen disulfide generation from gypsum containing materials from construction and demolition (C&D) fines utilizing real C&D materials at varying depths of deposition. This was done to answer a request from the Solid Waste section of SWM to determine the suitability of C&D fines as non-structural fill for property development.

In addition to other waste audits done to assist Tennessee's industries, CIS studied the suitability of utilizing clay and cellulosic byproducts from a paper recycling plant as a soil amendment.

The University of Tennessee-County Technical Assistance Service

TDEC contracts with the University of Tennessee County Technical Assistance Service (CTAS) to provide technical assistance to local governments by providing technical documents and consultative services. In addition to assisting and advising these authorities on up-grading and maintaining their solid waste collection systems, including convenience centers, transfer stations, and systems used in waste reduction, recycling, and disposal, CTAS also develops and offers courses and workshops on solid waste management, source reduction, and recycling for continuing education and training for local government officials.

During FY 2008-09, CTAS assisted counties, municipalities, solid waste authorities and regions by providing technical assistance specific to their needs. Significant projects included: Review of topographic shots for Fayette County and preparation of field calculations for new recycling

warehouse building for cost estimates; assisting Grainger County in a successful award of a new contract for waste collection with a preliminary cost savings over three years estimated at \$150,000; assisting Bledsoe County implement paint recycling improvements, and sponsoring an environmental blog for solid waste issues with a RSS feed. RSS stands for Really Simple Syndication. RSS Feeds are used to publish frequently updated websites, such as online newspapers, blogs, or article-driven sites.

Also, another significant project in FY 2008-09, CTAS produced a training DVD for convenience center operators that was premiered at the 38th Annual Solid and Hazardous Waste Conference in Gatlinburg. Copies of this video were distributed to local governments to provide technical assistance in training convenience center operators. The CTAS consultants provide valuable technical assistance in the design and operation of the local solid waste systems offering improvements and best management practices collected from statewide visits with other local governments. CTAS continues to provide local governments with sample ordinances, procedural handbooks, and contracts to assist them in properly incorporating solid waste activities into their local laws and community operations.

Problem Waste Management

Household Hazardous Waste

The Household Hazardous Waste (HHW) Program provides mobile collection service to counties for solid wastes in the home that exhibit the characteristics of being ignitable, corrosive, reactive, or toxic. The potential for ground and surface water contamination, damage to solid waste and wastewater treatment operations, and injury to sanitation workers exists if these materials remain in the municipal waste stream. Ninety-four counties have participated in the HHW mobile collection service since the program's inception in 1993. SWM continues to provide up to four events each Saturday from mid-March through mid-November. Clean Harbors Environmental Services, Inc. is the State's contractor for the mobile collection service until July 31, 2010.

In recent years, the State has encouraged local governments to provide the year-round collection of batteries, oil, paint, antifreeze, and electronics (BOPAE). Preference for HHW collection service is given to counties that make efforts to reduce BOPAE collected at the HHW events, thereby allowing limited funding resources to be available for the collection of the more hazardous household materials (i.e. flammable liquids, caustics, oxidizers, mercury).

In FY 2008-09, Tennessee residents had more opportunities to safely dispose of HHW than ever before through cooperative efforts by local governments and the state's mobile HHW collections. Overall, the State experienced a reduction in participation at the mobile events due to an increase in local BOPAE collection events and also year-round collection of BOPAE by many counties. As a result, the State altered the measure of success. The new measure of success for an HHW event is the percentage of hazardous materials of the total weight collected at a mobile event. The highest percent hazardous materials collected at a mobile event was 100 percent, which is a result of the county diverting all BOPAE. The statewide average was 20

percent. The State sponsored 47 HHW events and 3 milk run pickups for pre-collected oil-based paint. The service was utilized by 17,007 households and disposed of 1,227,136 pounds of household hazardous waste. The total cost for the 47 rural county sweeps and three milk run pickups was \$815,518.93, resulting in an overall cost per household of \$47.95. Appendix A presents data for the FY 2008-09 HHW mobile collection service.

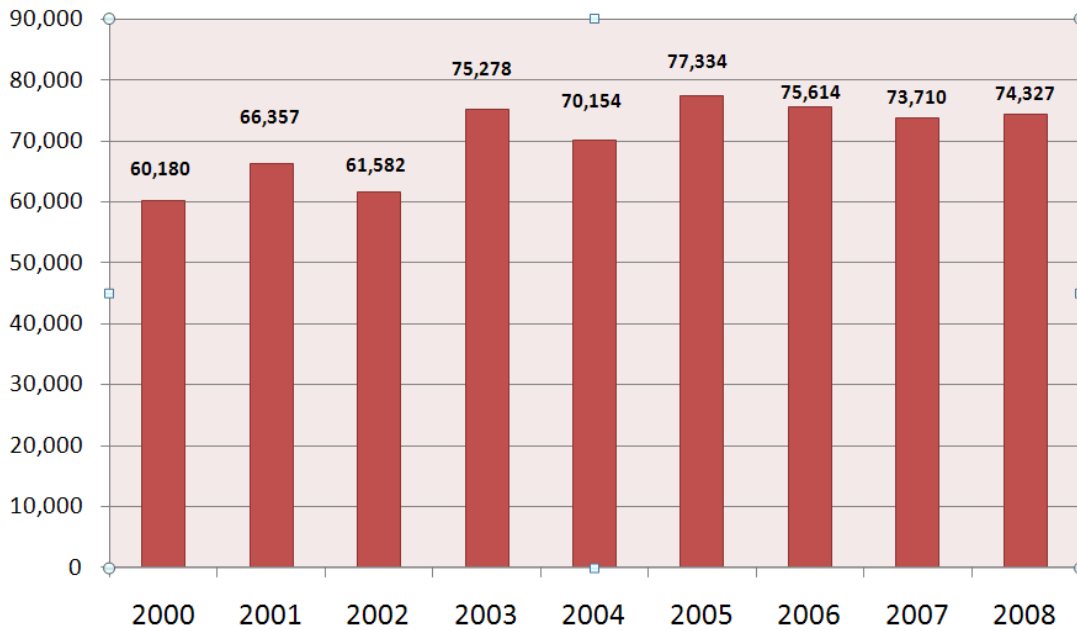
Chattanooga, Knoxville, Nashville, and Shelby County have permanent HHW collection facilities and are not included in these calculations. These facilities were constructed with grants from the Solid Waste Management Fund, as provided in the SWMA [TCA §68-21-828].

Waste Tire Recycling

In 1999, the Act was amended to prohibit counties from placing shredded tires in landfills after July 1, 2002, if the net cost of shredding, transporting, and disposing of waste tires exceeded the cost of an available beneficial end use. Beneficial end uses for scrap tires include cement manufacturing, tire-derived fuel (TDF), and civil engineering applications. FY 2001-02 was the last year that a statewide shredding service was provided to counties. All 95 Tennessee counties now send their tires to beneficial end users. Grants are available to assist counties in this effort. In FY 2008-09, counties recycled a total of 62,778 tons of tires with the assistance of grant funds. Total tires recycled in FY 2008-09 are 74,327 tons as submitted by local governments in the APR.

TDEC also maintains a list of unpermitted waste tire disposal sites. This list is prioritized to identify those sites that may pose a threat to human health. For instance, rainwater trapped in tires can become a breeding area for mosquitoes. The potential presence of West Nile virus within proximity of the public is of great concern at the unpermitted waste tire sites. The new Waste Tire Cleanup Grant was developed to assist counties with clean up and remediation of unpermitted waste tire disposal sites. Utilizing these grant funds, counties are solicited to clean up legacy or historical unpermitted waste tire sites. The county is authorized by these grants to contract with third parties to clean up the tire site and receive reimbursement for one hundred percent of eligible costs. This grant was used to clean up a large site in Fayette County totaling 177 tons of tires and a small site in Sullivan County consisting of 17 tons of tires in FY 2008-09.

Tons of Tires Sent to Beneficial End Uses with Grant Assistance (in tons)



Source: Tennessee Department of Environment & Conservation Solid Waste Assistance Grant Program

Assistance Grants

Since 1992, financial assistance has been provided for solid waste initiatives to Tennessee's local governments and non-profits. In that time, over 3,350 grants have been awarded at over \$100 million dollars for various projects ranging from key pieces of recycling equipment purchases to large facility improvements like the building of material recovery facilities (MRFs), addition of truck scales, and building of convenience centers. Monies for these grants come from the Fund.

Solid waste grant assistance has allowed the 68 solid waste planning regions to build much needed infrastructure. A decade ago, green boxes or unmanned county waste receptacles, dotted the back roads of our highways. At that time anything and everything was tossed in and around these containers. Today, 93 of 95 counties have at least one convenience center which is monitored and fenced. These centers provide drop off points for MSW as well as assorted recyclables. The vast majority of Tennesseans have an integrated solid waste system to manage their local MSW as a result of these solid waste grants.

In addition to grants designated for the local governments and non-profits, the grant program also provides grants to the State's development districts, the University of Tennessee Center for Industrial Services, University of Tennessee County Technical Assistance Service, and the Recycling Marketing Cooperative for Tennessee (RMCT) to provide technical assistance to the local governments.

Recycling Equipment Grant

The recycling equipment grant is an excellent way for local governments and non-profit organizations to purchase key pieces of recycling equipment. Items traditionally purchased under this grant include: roll off containers, skid loaders, paper shredders, scales, balers, glass crushers, and assorted styles of collection containers. This grant is competitive with a maximum award of \$25,000. A matching share of 10%-50% is required and is determined using an economic index. In FY 2008-09 sixteen counties, one city, and one non-profit organization received recycling grants totaling \$424,853.38 as outline in Appendix B. Counties and municipalities eligible for the recycling rebate are not eligible for this grant offering.

Recycling Rebates

Each year the top eleven county generators of MSW are offered recycling rebates which may be used for any recycling purpose including establishing, maintaining or expanding recycling operations and systems or providing education for local recycling programs. Municipalities are offered a portion of the rebate for their programs. The municipalities may allow their portion to be deferred to the county. There is a one to one matching of funds for this rebate. These awards totaling \$600,000 are detailed in Appendix C.

Waste Tire Recycling Grants

The SWM provides grants to counties to assist with the collection and recycling of their waste tires. These awards are detailed in Appendix D.

In June 1995, TDEC initiated the Waste Tire Recycling Grant Program to assist counties in locating, collecting, and properly disposing waste tires with beneficial end use being the ultimate goal. Grants are awarded based on total annual payments to the Department of Revenue by the county's tire dealers. Each county's reimbursement is paid on its eligible tire generation at a rate of \$70.00 per ton.

In FY 2008-09, TDEC gave 89 counties grants for the location, collection, and approved beneficial end-use of tires. TDEC reimbursed counties \$4,394,459 through the Waste Tire Grant Program. The participating grantees collected 62,778 tons or 6,277,800 passenger tire equivalents and processed them to beneficial end use.

Waste Tire Cleanup

The waste tire cleanup grant is designed to assist local governments in the cleanup of unpermitted waste tire sites. Eligibility for this grant is determined on a priority basis. This grant does not require a matching share. Grants are awarded to counties to contract for services to mitigate unpermitted waste tire sites, provide for equipment rentals, labor needs, access to site and other activities related to the mitigation.

The number of grants annually is limited by the availability of funds after prioritization. In FY 2008-09, two priority unpermitted waste tire sites in Fayette and Sullivan counties were cleaned up at a cost of \$95,160 for 194 tons of tires.

Development Districts

Each year the Department contracts with development districts to provide technical assistance for solid waste planning. The districts prepare and submit work plans that outline technical assistance for the regions in their district. In FY 2008-09 the Department contracted with eight development districts for \$378,379 to provide quality technical assistance services. This is a non-matching grant.

Operation and Maintenance Grants for Permanent HHW Collection Facility

Chattanooga, Knoxville, Nashville, and Shelby County each have one permanent household hazardous waste collection site. These facilities accept household hazardous wastes, such as cleaning chemicals and pesticides, for safe disposal. TDEC provided initial grants for construction and start-up of these sites during previous years. In addition, these permanent sites receive grants to cover a portion of their ongoing operational costs. These four facilities received a total of \$331,938 during FY 2008-09.

University of Tennessee County Technical Assistance Service (UT-CTAS)

The University of Tennessee County Technical Assistance Service grant is a yearly non-competitive grant. In FY 2008-09 CTAS received a grant for \$341,085 for technical assistance to local governments. Activities funded by this grant directly provide for assistance to local governments in designing facility layout, determining appropriate equipment specifications, best management practices development, GIS mapping and route design to name a few. Additional value added services from CTAS also includes legal assistance in solid waste matters, research assistance on solid waste topics and technical support at public meetings. This grant currently supports a technical blog for solid waste professionals in local governments in Tennessee and offers a valuable resource for other professionals across the country.

University of Tennessee Center for Industrial Service (UT-CIS)

The University of Tennessee Center for Industrial Service grant is a yearly non-competitive grant. In FY 2008-09, CIS received a grant for \$247,000 for technical assistance to the business and industry sector. This grant provides funding for the Tennessee Materials Exchange and the Recycling Markets Directory in addition to other technical assistance services and projects benefiting business and industry.

Appendix A: Mobile Household Hazardous Collection Summaries Fiscal Year 2008-09

County	Date	Participation	Participation Rate	Cost	Total Weight (lbs)	% Haz Mat by Weight	% BOPAE by Weight
Anderson	9/13/2008	198	0.7%	\$13,325	11,895	27%	73%
Anderson - Milk Run	5/28/2009	n/a	0.0%	\$4,425	12,993	0%	100%
Anderson	4/4/2009	439	1.5%	\$21,211	28,497	21%	79%
Blount	9/13/2008	676	1.5%	\$41,045	62,663	12%	88%
Carroll	4/4/2009	67	0.6%	\$5,186	7,051	18%	82%
Carter	9/6/2008	214	0.9%	\$15,860	16,592	18%	82%
Cocke	10/10/2008	75	0.5%	\$3,135	3,701	16%	84%
Coffee	4/25/2009	254	1.3%	\$10,481	14,697	14%	86%
Crockett	9/13/2008	12	0.2%	\$1,897	674	50%	50%
Cumberland	10/18/2008	762	3.7%	\$22,275	34,112	16%	84%
DeKalb	11/1/2008	81	1.1%	\$4,877	8,728	14%	86%
Dickson	9/27/2008	332	1.8%	\$15,124	29,735	11%	89%
Dyer	10/25/2008	203	1.3%	\$8,147	14,329	12%	88%
Franklin	3/28/2009	188	1.2%	\$10,182	13,816	14%	86%
Greene	10/11/2008	364	1.4%	\$18,996	26,574	12%	88%
Hamblen	3/21/2009	215	0.9%	\$11,532	18,705	12%	88%
Hawkins	4/18/2009	194	1.0%	\$7,673	14,391	14%	86%
Haywood	5/16/2009	31	0.4%	\$2,148	572	100%	0%
Henry	5/30/2009	301	2.4%	\$10,243	13,418	21%	79%
Hickman	10/4/2008	46	0.5%	\$4,656	5,706	24%	76%
Humphreys	5/30/2009	155	2.1%	\$6,078	9,015	13%	87%
Lauderdale	5/9/2009	18	0.2%	\$2,384	1,770	35%	65%
Lincoln	3/21/2009	234	1.8%	\$14,103	25,012	15%	85%
Loudon	4/18/2009	394	2.3%	\$20,231	28,563	15%	85%
Macon	10/18/2008	43	0.5%	\$3,399	4,617	17%	83%
Madison	10/25/2008	572	1.5%	\$25,307	43,765	19%	81%
Marshall	4/25/2009	156	1.4%	\$10,621	14,002	17%	83%
Maury	8/23/2008	521	1.7%	\$24,924	42,781	11%	89%
McMinn	10/4/2008	401	2.0%	\$15,778	24,863	18%	82%
Montgomery	9/20/2008	810	1.4%	\$31,089	32,084	31%	69%
Montgomery	3/28/2009	654	1.1%	\$25,048	20,574	35%	65%
Moore	9/6/2008	46	1.9%	\$3,222	4,183	24%	76%
Obion	5/30/2009	149	1.2%	\$6,137	6,191	33%	67%
Putnam	9/27/2008	265	1.0%	\$14,414	13,793	19%	81%
Roane	5/9/2009	127	0.6%	\$13,334	21,309	16%	84%
Rutherford	11/15/2008	1,376	1.6%	\$64,434	120,023	8%	92%
Sequatchie	8/23/2008	15	0.3%	\$1,999	1,102	33%	67%
Sevier - Milk Run	4/25/2009	n/a	0.0%	\$1,536	4,597	0%	100%
Smith	4/4/2009	27	0.4%	\$3,232	4,565	3%	97%
Sullivan	10/11/2008	291	0.5%	\$16,443	21,063	12%	88%
Sullivan	4/25/2009	122	0.2%	\$11,405	5,122	55%	45%
Sumner	9/27/2008	683	1.2%	\$36,593	70,052	15%	85%
Tipton	10/25/2008	137	0.6%	\$8,916	11,275	10%	90%
Unicoi	10/11/2008	97	1.4%	\$5,675	8,065	20%	80%
Warren	10/4/2008	370	2.3%	\$16,349	21,148	12%	88%
Washington	9/6/2008	311	0.7%	\$16,740	20,230	15%	85%
Washington - Milk Run	4/7/2009	n/a	0.0%	\$2,421	6,013	0%	100%
Williamson	11/1/2008	1,862	3.0%	\$64,558	107,014	15%	85%
Williamson	5/2/2009	1,539	2.5%	\$58,420	93,102	14%	86%
Wilson	9/20/2008	980	2.4%	\$58,310	102,394	9%	91%
Total/Average		17,007	1.21%	\$815,518.93	508,374	20%	80%

BOPAE (batteries, oil, paint, antifreeze, electronics)
 Haz Mat (flammables, reactives, corrosives, toxics, etc.)

Appendix B: Recycling Equipment Grant Expenditures Fiscal Year 2008-09

Anderson County	\$	15,192.00
Bledsoe County	\$	21,764.70
Chester County	\$	25,000.00
Claiborne County SW	\$	25,000.00
Fentress County	\$	20,806.40
Goodwill Industries-Cocke	\$	19,887.20
Goodwill Industries-Grainger	\$	22,499.10
Hardin County	\$	17,010.00
Haywood County	\$	25,000.00
Hickman County	\$	25,000.00
Jefferson County SW	\$	25,000.00
Lewisburg, City of	\$	25,000.00
Marion County	\$	21,764.70
Morgan County	\$	18,346.50
Overton County	\$	23,093.10
Sequatchie County	\$	22,011.30
Smith County	\$	22,478.38
Washington County	\$	25,000.00
Wayne County	\$	25,000.00
TOTAL:	\$	424,853.38

Appendix C: Rebate Awards Fiscal Year 2008-09

DAVIDSON COUNTY /Nashville	\$82,545.00	RUTHERFORD	\$33,750.00
BELLE MEADE	\$463.00	EAGLEVILLE	\$0.00
BERRY HILL	\$0.00	LAVERGNE	\$0.00
FOREST HILL	\$0.00	MURFREESBORO	\$0.00
GOODLETTSVILLE	\$1,493.00	SMYRNA	\$0.00
LAKEWOOD	\$0.00	SHELBY	\$22,235.00
OAK HILL	\$0.00	ARLINGTON	\$0.00
RIDGETOP	\$0.00	BARLETT City of	\$10,180.00
HAMILTON	\$16,183.00	COLLIERVILLE	\$8,373.00
CHATTANOOGA	\$24,044.00	GERMANTOWN	\$7,981.00
COLLEGEDALE	\$1,060.00	LAKELAND	\$1,717.00
EASTRIDGE	\$2,792.00	MEMPHIS	\$144,147.00
LAKESITE	\$0.00	MILLINGTON	\$0.00
LOOKOUT MOUNTAIN	\$0.00	SULLIVAN	\$15,474.00
RED BANK	\$1,642.00	BLUFF CITY	\$0.00
RIDGESIDE	\$0.00	BRISTOL City of	\$4,547.00
SIGNAL MOUNTAIN	\$1,009.00	JOHNSON CITY	\$0.00
SODDY-DAISY	\$0.00	KINGSPORT	\$7,383.00
WALDEN	\$0.00	SUMNER	\$19,015.00
KNOX	\$48,188.00	GALLATIN	\$4,832.00
FARRAGUT	\$0.00	GOODLETTSVILLE	\$920.00
KNOXVILLE	\$36,803.00	HENDERSON	\$0.00
MADISON	\$11,256.00	MILLERSVILLE	\$0.00
JACKSON City of	\$21,348.00	MITCHELLVILLE	\$0.00
MEDON	\$0.00	PORTLAND	\$0.00
THREWAY	\$0.00	WESTMORELAND	\$0.00
MAURY	\$28,134.00	WHITEHOUSE	\$903.00
COLUMBIA	\$0.00	WILLIAMSON	\$16,591.00
MOUNT PLEASANT	\$0.00	BRENTWOOD	\$0.00
SPRING HILL	\$0.00	FAIRVIEW	\$0.00
MONTGOMERY	\$16,238.00	FRANKLIN, City of	\$8,754.00
CLARKSVILLE	\$0.00	NOLENSVILLE	\$0.00
		SPRING HILL	\$0.00
		THOMPSON'S STATION	\$0.00
		TOTALS	\$600,000.00

Appendix D: Waste Tire Recycling Grant Awards Fiscal Year 2008-09

ANDERSON CO.	\$54,000.00
BEDFORD CO.	\$28,400.00
BENTON CO.	\$12,000.00
BLEDSON CO.	\$2,300.00
BLOUNT CO.	\$85,000.00
BRADLEY CO.	\$65,000.00
CAMPBELL CO.	\$20,100.00
CANNON CO.	\$2,900.00
CARROLL CO.	\$20,500.00
CARTER CO.	see Hub
CHEATHAM CO.	\$13,600.00
CHESTER CO.	\$5,800.00
CLAIBORNE CO.	\$12,100.00
CLAY CO.	\$850.00
COCKE CO.	\$23,900.00
COFFEE CO.	\$41,500.00
CROCKETT CO.	\$6,500.00
CUMBERLAND CO.	\$46,300.00
DAVIDSON CO. / Metro Nashville	\$595,000.00
DECATUR CO.	\$5,200.00
DEKALB CO.	\$10,500.00
DICKSON CO.	\$50,500.000
DYER CO.	\$30,100.00
FAYETTE CO	\$15,349.00
FENTRESS CO	\$15,300.00
FRANKLIN CO.	\$22,600.00
GIBSON CO.	\$44,000.00
GILES CO.	\$14,600.00
GRAINGER CO.	\$6,300.00
GREEN CO.	see Hub
GRUNDY CO.	\$1,900.00
HAMLEN CO.	\$58,400.00
HAMILTON CO.	\$280,000.00
HANCOCK CO.	\$2,100.00
HARDEMAN CO.	\$12,200.00
HARDIN CO	\$17,595.00
HAWKINS CO.	\$19,900.00
HAYWOOD CO.	\$13,900.00
HENDERSON CO.	\$21,400.00
HENRY CO.	\$33,600.00
HICKMAN CO.	\$9,940.00
HOUSTON CO.	\$3,350.00
HUMPHREYS CO.	\$11,400.00
JACKSON CO.	\$4,000.00
JEFFERSON CO.	\$14,600.00
JOHNSON CO.	see Hub
KNOX CO.	\$378,500.00
LAKE CO.	\$1,800.00

LAUDERDALE CO.	\$12,000.00
LAWRENCE CO.	\$40,200.00
LEWIS CO.	\$6,000.00
LINCOLN CO.	\$25,100.00
LOUDON CO.	\$29,000.00
MACON CO	\$20,500.00
MADISON CO	\$147,000.00
MARION CO.	\$24,000.00
MARSHALL CO.	\$19,600.00
MAURY CO	\$57,500.00
MCMINN CO.	\$33,200.00
MCNAIRY CO.	\$9,500.00
MEIGS CO.	\$850.00
METRO Lynchburg / Moore Co.	\$1,400.00
MONROE CO.	\$31,200.00
Montgomery HUB/ Stewart	\$114,000.00
MORGAN CO.	\$4,400.00
OBION CO.	\$28,500.00
OVERTON CO.	\$11,800.00
PERRY CO.	\$2,600.00
PICKETT CO.	\$1,400.00
POLK CO	\$8,700.00
PUTNAM CO.	\$72,500.00
RHEA CO.	\$15,400.00
ROANE CO.	\$37,800.00
ROBERTSON CO.	\$39,200.00
RUTHERFORD CO.	\$183,000.00
SCOTT CO.	\$5,400.00
SEQUATCHIE CO.	\$10,200.00
SEVIER CO. (Solid Waste, Inc.)	\$63,300.00
SHELBY CO.	\$506,500.00
SMITH CO.	\$8,000.00
STEWART CO.	see Hub
SULLIVAN CO	
SUMNER CO. (Resource Authority)	\$73,000.00
TIPTON CO.	\$30,000.00
TROUSDALE CO.	\$6,100.00
UNICOI CO.	see Hub
UNION	\$6,500.00
VAN BUREN CO.	\$625.00
WARREN CO.	\$30,100.00
Washington HUB/ Sullivan, Johnson, Unicoi, Carter, Greene	\$298,000.00
WAYNE CO.	\$5,500.00
WEAKLEY CO.	\$19,900.00
WHITE CO.	\$19,200.00
WILLIAMSON CO.	\$150,000.00
WILSON CO.	\$51,000.00
TOTAL	\$4,394,459.00

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