

Department of Environment & Conservation

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2025-2035 Statewide Integrated Solid Waste Management Plan

Tennessee Department of Environment & Conservation | November 2026

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STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243-0435

DAVID W. SALYERS, P.E.
COMMISSIONER

BILL LEE
GOVERNOR

[DATE]

Dear Fellow Tennesseans:

It is my pleasure to present the 2035 Integrated Solid Waste Management Plan (the 2035 Plan). The Tennessee Department of Environment and Conservation (TDEC) is the state agency charged with protecting Tennessee's environment and natural resources. The 2035 Plan serves as a roadmap for managing solid waste and recovering materials so that communities statewide have safe, reliable, and affordable waste services.

Tennessee is thriving. Our population is booming, driven by strong economic growth and investment, and that growth is a mark of our state's success. However, growth also brings inherent challenges. Rural communities face rising costs for residents, and local systems face strains on existing capacity. Simultaneously, these pressures provide the opportunity to improve infrastructure, create jobs, and generate prosperity across Tennessee. About 70 to 75 percent of the material sent to Tennessee landfills could be recycled or composted.

In Tennessee, a strong economy and a healthy environment go hand in hand. Materials recovered rather than buried become feedstock for Tennessee manufacturers. Every facility that collects, processes, or remanufactures those materials creates jobs and draws private investment to our communities. Investment in recycling and composting infrastructure, new technologies, and in-state markets keeps the value of these resources in Tennessee's economy. It also conserves landfill capacity and protects the land, water, and natural resources that make our state a great place to live and do business. Conservation and economic growth are not competing priorities; pursued together, they make Tennessee more prosperous and resilient.

Guided by the state's 25 percent waste reduction goal, the 2035 Plan sets forth eight objectives for the coming decade:

1. Ensure long-term, environmentally protective disposal capacity
2. Advance material processing infrastructure and in-state markets for recovered materials
3. Increase diversion of food and other organic waste
4. Strengthen goals and data-driven performance metrics
5. Enhance management of problematic and hard-to-manage waste
6. Improve disaster debris planning and recovery
7. Expand and focus education and outreach
8. Develop sustainable funding for local solid waste programs

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Planning for Tennessee's growth also means planning responsibly for the costs of the services we all depend on. A landfill's obligations do not end when it closes; closure and at least 30 years of post-closure care must still be funded. We will work with the Tennessee Comptroller of the Treasury and the Department of Finance and Administration to ensure strong financial assurance for every permitted facility, so these costs are not passed on to future generations. Our new TDEC Economic Modeling Tool will help regions and local governments estimate the full cost of their solid waste systems, compare service options, and project costs ten years ahead. With it, communities can set rates that recover actual costs, build reserves for closure and post-closure care, and invest wisely in the infrastructure their growth demands. We will begin training local governments on the tool in early 2027.

Achieving these goals will take all of us: state agencies, solid waste planning regions, development districts, counties and cities, private industry, academic institutions, nonprofit organizations, and every Tennessean who chooses to reduce, reuse, and recycle. The progress to date reflects the leadership of Governor Bill Lee, the Tennessee General Assembly, and its Solid Waste Task Force, and we are grateful for their continued support. We look forward to working with Governor-elect Marsha Blackburn and her Administration to ensure that Tennessee continues to grow our economy while protecting our environment and conserving our resources, so Tennessee remains an even better place to live, work, play, and raise a family.

We also thank the residents, local officials, and industry partners whose input shaped the 2035 Plan, and we invite you to join us in carrying it forward together.

Sincerely,

David W. Salyers, P.E.
Commissioner

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Executive Summary

The 2025–2035 Tennessee Integrated Solid Waste Management Plan (ISWMP), referred to herein as the 2035 Plan or the Plan, developed by the Tennessee Department of Environment and Conservation (TDEC), Division of Land Protection (DLP) and Division of Stakeholder Engagement (DSE), establishes a strategic framework to guide solid waste management across the state over the next decade. The Plan responds to evolving waste streams, infrastructure gaps, and regulatory challenges, and is grounded in the statutory authority of the Solid Waste Management Act of 1991 (Tennessee Code Annotated [TCA] §68-211-801).

Tennessee's solid waste management system consists of landfills, transfer stations, recycling centers, composting operations, and convenience centers. Although statewide disposal capacity is sufficient, the system faces significant challenges, including uneven population growth, infrastructure and disposal capacity disparities, financial pressures, and data gaps that strain its effectiveness.

The Plan responds with targeted strategies, tactics, and action items addressing eight objectives to reduce waste generation, increase diversion, and enhance operations. The action items focus on steps TDEC can take to advance these objectives, support local governments, and serve as a framework for the management of solid waste, recycling, and diversion across Tennessee. Emphasizing regional planning, stakeholder engagement, and sustainable funding, The Plan calls for investing in solid waste infrastructure, strengthening end markets, expanding recycling and organics collection, modernizing data systems, improving management of problematic and hard-to-handle wastes, enhancing disaster debris preparedness, and developing sustainable funding sources. Together, these strategies provide a roadmap for a resilient, equitable, and environmentally protective solid waste management system that supports public health, conserves resources, and drives long-term economic growth across Tennessee.

Summary of Objectives

- **Objective 1**: Ensure Long-Term Environmentally Protective Disposal Capacity
- **Objective 2**: Advance Material Processing Infrastructure and Market Development
- **Objective 3**: Increase Diversion of Organic Waste
- **Objective 4**: Strengthen Goals and Data-Driven Performance Metrics
- **Objective 5**: Manage Problematic or Hard-to-Manage Waste
- **Objective 6**: Disaster Debris Management
- **Objective 7**: Expand and Focus Education and Outreach
- **Objective 8**: Develop Sustainable Funding Sources for Municipal Solid Waste Management Programs

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Appendix 3: TDEC Guidance Document - Preparation Guide for Higher Education Institution's Annual Source Reduction, Recycling and Waste Management Plan

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ACRONYMS AND ABBREVIATIONS[1]

%	Percent
2035 Plan	2025-2035 Tennessee Statewide Integrated Solid Waste Management Plan
2025 Plan	2015-2025 Tennessee Statewide Integrated Solid Waste Management Plan
AD	Anaerobic Digestion
ADEM	Alabama Department of Environmental Management
APR	Annual Progress Report
BMP	Best Management Practice
BOPAE	Batteries, Oil, Paint, Antifreeze, and Electronics
C&D	Construction and Demolition
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CILB	Contracts in Lieu of Bonds
CPI	Consumer Price Index
CTAS	County Technical Assistance Service
CY	Calendar Year
DDMP	Disaster Debris Management Plan
DLP	Division of Land Protection
DSE	Division of Stakeholder Engagement
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FY	Fiscal Year
GA EPD	Georgia Environmental Protection Division
HHW	Household Hazardous Waste
ICI	Industrial, Commercial, Institutional
ISWMP	Integrated Solid Waste Management Plan
LEP	Limited English Proficiency
MRF	Materials Recovery Facility

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[1] **Disclaimer**: The acronyms and abbreviations listed herein are provided for the purposes of describing, interpreting, and implementing this plan. Related terms and definitions are provided in **Attachment A, Terms and Definitions.** These materials are intended to promote clarity and consistency within this plan and should not be construed as superseding or replacing any statutory, regulatory, organizational, or industry-standard definitions.

MSW	Municipal Solid Waste
MTAS	Municipal Technical Advisory Service
NGO	Non-governmental Organization
OCM	Office of Cooperative Marketing
OSHA	Occupational Safety and Health Administration
PCC	Post-Closure Care
PPPs	Public-Private Partnerships
RCRA	Resource Conservation and Recovery Act
RMPF	Recovered Materials Processing Facility
SSWI	Sevier Solid Waste, Inc.
SWMF	Solid Waste Management Fund
SWOR	Solid Waste Origin Report
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TCA	Tennessee Code Annotated
TDEC	Tennessee Department of Environment and Conservation
TDMS	Temporary Debris Management Sites
TDOT	Tennessee Department of Transportation
TEAP	Tire Environmental Act Program
TEMA	Tennessee Emergency Management Agency
U.S.	United States
USDA	U.S. Department of Agriculture
UST-SWDCB	Underground Storage Tanks and Solid Waste Disposal Control Board
WTE	Waste-to-energy

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1. INTRODUCTION AND BACKGROUND

The 2025-2035 State of Tennessee Integrated Solid Waste Management Plan (ISWMP), referred to herein as the 2035 Plan or the Plan, establishes a strategic framework to support solid waste management systems across Tennessee for the 10-year planning period of 2025 through 2035. The Plan was developed by the Tennessee Department of Environment and Conservation (TDEC) Division of Land Protection (DLP) and Division of Stakeholder Engagement (DSE) in accordance with the Tennessee Solid Waste Planning and Recovery Act (Tennessee Code Annotated [TCA] §68-211-601) and the Solid Waste Management Act of 1991 (TCA §68-211-801), which mandate that the state maintain a current plan addressing waste reduction and diversion goals, system capacity, and program effectiveness.

The need for long-term planning is underscored by conditions identified through development of the 2035 Plan. Tennessee's population is projected to grow by approximately 7% during the planning period, increasing pressure on existing solid waste infrastructure. At the same time, approximately 70 to 75% of landfilled material is potentially recyclable or compostable, representing substantial opportunity to reduce disposal, while remaining Class I landfill capacity is limited and unevenly distributed, with Middle Tennessee facing less than 10 years of remaining capacity as of 2025. Together, these conditions reinforce the importance of expanding diversion while planning strategically for Tennessee's long-term solid waste management needs.

1.1 Purpose

The 2035 Plan provides an overview of the state of solid waste management in Tennessee through 2025 and identifies emerging challenges and opportunities. It also outlines objectives, strategies, tactics, and action items to improve system performance, increase waste diversion, promote sustainable materials management, and safeguard public health and the environment. The Plan provides a framework for addressing the capacity, infrastructure, and diversion needs identified through the planning process, including differences in conditions and needs across the state. Rather than serving as a direct implementation tool, the Plan is intended to guide TDEC, local governments, and other stakeholders in reducing the volume of waste entering municipal solid waste (MSW) landfills.

TDEC envisions the 2035 Plan as a long-term strategic framework that outlines practical options available to support implementation. Regular reviews will ensure the Plan remains relevant and practical as conditions and priorities evolve.

1.2 Vision

TDEC envisions a future where the state's environment and natural resources are protected and enhanced for the benefit of current and future generations. TDEC's official vision statement is *"Working together, we will protect our environment and conserve critical*

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natural resources for future generations while we make Tennessee an even better place to live, work, and play."[2]

In alignment with this vision, the DLP and the DSE support Tennessee's efforts to advance a sustainable and efficient waste management system that reduces environmental impact and promotes resource recovery. DLP[3] focuses on waste reduction, recycling and diversion, and safe solid waste management, while DSE[4] engages and supports stakeholders through planning, technical assistance, market development, and funding opportunities. Together, these efforts support local governments, businesses, Development Districts (Districts), nonprofits, and other partners in advancing TDEC's broader environmental and public health goals.

The 2035 Plan represents Tennessee's strategic vision for advancing solid waste management statewide, building on the foundation of the 2015-2025 Tennessee Statewide ISWMP[5] , referred to herein as the 2025 Plan, and aligning with the policy of the Solid Waste Management Act of 1991. The Plan reflects a commitment to sustainability, environmental stewardship, and long-term planning through its vision *"To lead Tennessee toward a sustainable future with sufficient and environmentally sound disposal capacity through efficient waste management practices."*

The Plan's success will depend on collaboration among TDEC, local governments, businesses, and residents to implement innovative strategies that advance both visions.

1.3 Objectives

The objectives of the 2035 Plan are intended to guide policy development, strategic planning, and implementation efforts across Tennessee. They were shaped by input from various stakeholders, including state and local government officials and representatives from private industry, nonprofit organizations, and academic institutions. Aligned with statutory requirements, these objectives address the most critical needs and opportunities identified during the planning process. Each objective supports measurable progress in waste reduction, material recovery, system efficiency, sustainable funding, and environmental protection.

The 2035 Plan is organized around eight objectives that collectively address Tennessee's solid waste management priorities:

1. Ensure Long-Term Environmentally Protective Disposal Capacity
2. Advance Material Processing Infrastructure and Market Development
3. Increase Diversion of Organic Waste
4. Strengthen Goals and Data-Driven Performance Metrics

[2] (TDEC 2026a)
[3] (TDEC 2026b)
[4] (TDEC n.d.b)
[5] (TDEC 2026c)

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5. Manage Problematic or Hard-to-Manage Waste
6. Disaster Debris Management
7. Expand and Focus Education and Outreach
8. Develop Sustainable Funding Sources for MSW Management Programs

Together, these objectives provide the framework for the strategies and tactics presented in the sections that follow and establish the priorities through which the 2035 Plan will be implemented.

1.4 Previous Planning Period Accomplishments

Following the finalization of the 2025 Plan, Tennessee made significant progress toward advancing that plan's objectives through the collaborative efforts of TDEC, local governments, and other stakeholders. The accomplishments summarized below highlight some of the more notable achievements during the previous planning period. Additional objective-specific accomplishments are provided in **Section 2, Objectives and Implementation Framework**, which carries forward and builds upon many of these initiatives.

- **Expanded Recycling Access and Infrastructure.** Tennessee expanded recycling opportunities through investments in collection and processing infrastructure, strengthened grant programs, and enhanced public outreach and technical assistance. These efforts improved access to recycling services, strengthened local recycling programs, and supported increased recycling participation.
- **Expanded Organics Diversion and Food Recovery.** Tennessee increased support for composting and food recovery through grants, technical assistance, regulatory updates, training, and public outreach. The State also launched the Get Food Smart TN[6] program and expanded support for food donation and redistribution efforts.
- **Expanded Education, Training, and Outreach.** The State expanded professional training and certification opportunities, statewide education campaigns, partnerships with educational institutions, outreach events, and food recovery initiatives in higher education.
- **Strengthened Disposal Capacity and Waste Management Programs.** Tennessee improved its understanding of statewide disposal capacity by enhancing remaining life surveys for Class I and Class II landfills, providing more accurate and consistent information to support long-term planning. The State also improved permitting and regulatory processes, expanded year-round household hazardous waste (HHW) collection, supported the management of legacy disposal sites, and strengthened enforcement and cleanup efforts related to illegal dumping.
- **Strengthened Disaster Preparedness.** Tennessee enhanced statewide disaster debris management planning by developing a debris management toolkit and

[6] (TDEC n.d.a)

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planning template aligned with federal requirements. The State also increased engagement with local governments, integrated disaster debris tracking into reporting systems, and partnered with the Tennessee Emergency Management Agency (TEMA) and local communities to deliver training, presentations, and tabletop exercises that improve preparedness and recovery following disasters.

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2. OBJECTIVES AND IMPLEMENTATION FRAMEWORK

Based on stakeholder feedback received throughout development of the 2035 Plan as detailed in **Section 4, Stakeholder Engagement and Public Outreach**, lessons learned, progress made under the 2025 Plan, and research on best management practices (BMPs), TDEC refined its objectives and developed supporting strategies, tactics, and action items to address Tennessee's solid waste management and infrastructure challenges over the next decade. Each objective presented in the following sections addresses critical needs and opportunities identified through the planning process and aligns with applicable statutory requirements, where relevant. Each section introduces the purpose and background of the objective, summarizes relevant progress under the 2025 Plan, presents the strategies, tactics, and action items TDEC will pursue under the 2035 Plan, and highlights applicable BMPs that demonstrate approaches used to address similar solid waste management challenges.

2.1 Objective 1: Ensure Long-Term Environmentally Protective Disposal Capacity

Maintain Tennessee's ability to safely and reliably dispose of non-divertible waste and residuals, by securing sufficient landfill capacity, promoting best management and environmental monitoring, and supporting system resilience as diversion increases.

Tennessee must maintain reliable, environmentally protective disposal options for materials that cannot be reduced, reused, or recycled. Adequate disposal capacity is essential to an effective solid waste management system and supports reliable waste management, disaster response, and protection of public health and the environment. Objective 1 focuses on proactive planning to ensure sufficient disposal capacity is available to meet Tennessee's long-term needs.

Background

As discussed in **Section 3, Tennessee's Solid Waste Management System**, population growth, increasing waste generation, and regional differences in available disposal capacity are placing pressure on Tennessee's solid waste infrastructure. While statewide Class I landfill capacity is projected to be sufficient for approximately 15 to 17 years, capacity is unevenly distributed, with Middle Tennessee facing



Photo 1: Construction of a new landfill cell to expand disposal capacity

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less than 10 years of remaining capacity as of 2025.

These conditions reinforce the need for proactive, long-term planning to maintain reliable and environmentally protective disposal capacity, manage transportation needs and costs, and anticipate future infrastructure needs. Tennessee's efforts under the 2025 Plan established a foundation for this work. Key accomplishments under the 2025 Plan include:

- Continued monitoring of landfill capacity and operations, including expanded reporting requirements such as annual engineering surveys of Class I landfills.
- Improved permitting, regulatory frameworks, enforcement, and management of legacy landfill sites.
- Developed technical guidance, program handbooks, and contracting resources for solid waste facility owners and operators.
- Expanded digital and mapping tools to support solid waste planning and transparency.
- Evaluated emerging and alternative waste management technologies and supported their consideration through state policy updates.

Under the 2035 Plan, TDEC will build on these accomplishments while continuing to fulfill its regulatory and programmatic responsibilities and advancing the strategies, tactics, and action items necessary to maintain reliable, environmentally protective solid waste management and disposal capacity across Tennessee.

Strategies, Tactics, and Action Items

To advance Objective 1, the 2035 Plan establishes five strategies, supported by tactics and action items, to maintain reliable, environmentally protective disposal capacity in Tennessee.

Strategy 1: Develop and Maintain a Comprehensive Statewide Landfill Capacity Database

To support long-term disposal capacity planning and sustainable economic growth, Tennessee needs reliable, current information on landfill usage, remaining permitted capacity, waste flows, and projected facility life. This information supports regional planning and helps ensure reliable, cost-effective, and environmentally protective waste management infrastructure for residents, businesses, and industry. Improved availability, consistency, and validation of landfill data will strengthen capacity assessments, forecasting, infrastructure planning, and policy decisions while helping identify emerging constraints and evaluate future disposal needs.

Tactic 1: Improve landfill data collection and validation to support capacity planning. TDEC will continue to collect and validate Class I landfill data and evaluate opportunities to obtain comparable data for Class III and IV landfills. This information will support statewide and regional capacity planning, including analysis of waste flows, landfill usage, remaining capacity, fill rates, and projected facility life. To advance this tactic, TDEC will advance the following action items:

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Action item	Description
1. Collect and validate Class I landfill data	Continue collecting, reviewing, and validating annual tonnage, waste origin, permitted capacity, remaining airspace, fill rates, and projected closure dates.
2. Improve landfill reporting tools	Review and improve existing reporting tools, including the Solid Waste Origin Report (SWOR), to increase the accuracy, consistency, and usefulness of landfill capacity and waste-flow data.
3. Evaluate Class III and IV landfill data collection	Evaluate options to obtain comparable data on tonnage, waste origin, remaining capacity, fill rates, and projected facility life, where feasible and consistent with applicable authority.
4. Support capacity planning and forecasting	Use validated landfill data to support statewide and regional capacity modeling, forecasting, and long-term solid waste planning.
5. Publish landfill capacity information	Publish accurate information on landfill usage, remaining capacity and airspace, and projected facility life using available validated data.

Tactic 2: Prioritize funding based on disposal capacity and infrastructure needs. Prioritize support for counties with limited financial capacity or high vulnerability to strengthen disposal infrastructure, improve data collection, and support long-term capacity planning. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Target infrastructure funding	Subject to funding availability, use disposal capacity data to prioritize infrastructure funding.
2. Expand data collection funding	Subject to funding availability, evaluate opportunities to expand grant funding for Class III landfill data collection infrastructure, such as scales, to support remaining-life assessments.

Strategy 2: Strengthen Regional Planning and Shared Capacity Frameworks

Regional collaboration is essential to balancing disposal capacity, reducing risks for underserved communities, and preventing isolated crises where the waste management issues of one community could potentially impact neighboring communities. By planning together, communities can share infrastructure, reduce costs, and improve system resilience.

Tactic 1: Bring together local government officials, private landfill operators, and regional planners. TDEC will bring together local government officials, private landfill operators, regional planners, and other partners to identify statewide and regional disposal challenges, evaluate the benefits and challenges of regionalization, and strengthen solid waste management and planning through regional training and workshops. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Identify regionalization challenges and benefits	Work with partners, including the General Assembly's Solid Waste Task Force, to research and identify the challenges and benefits of regionalization.
2. Conduct disposal gap analyses	Conduct periodic analyses of disposal challenges statewide and regionally. Present the results during regional workshops.

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Action item	Description
3. Provide regional training and workshops	Organize and provide training in solid waste management and planning for local government officials, private landfill operators, and regional planners through regional workshops.

Tactic 2: Develop and distribute customizable templates for interlocal agreements. These templates will provide counties with a framework for establishing interlocal agreements to collaborate, jointly procure disposal and collection services, and coordinate infrastructure investments. To advance this tactic, TDEC will work with partners such as the Municipal Technical Advisory Service (MTAS) and County Technical Assistance Service (CTAS) to develop educational resources, toolkits, and sample interlocal agreements that support regional collaboration and shared solid waste management infrastructure.

Strategy 3: Improve Transparency and Stakeholder Engagement.
Early and ongoing stakeholder engagement ensures that disposal planning reflects community needs, builds trust, and improves transparency. Inclusive processes lead to more balanced and sustainable solutions.

Tactic 1: Issue simplified, visually engaging summaries of landfill capacity data and forecasts. These summaries will be made available for public distribution and will include maps, charts, and plain-language explanations to improve transparency and community understanding. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Provide public mapping resources	Produce and maintain mapping resources, such as story maps and dashboards, for public audiences and host these materials online to improve accessibility and public transparency.
2. Communicate landfill capacity trends and gather input	Relay data on landfill capacity trends and gather stakeholder input on community concerns and service gaps. Use this information to inform updates to statewide and regional planning efforts and develop educational and outreach materials and opportunities to communicate landfill capacity and trends with local officials and communities.
3. Modernize stakeholder engagement	Explore ways to modernize engagement with stakeholders based on public feedback.

Strategy 4: Strengthen Solid Waste Permitting and Enforcement Protocols
TDEC will maintain consistent permitting processes and enforcement of regulatory standards to protect human health and the environment.

Tactic 1: Maintain effective permitting and enforcement of regulatory standards. TDEC will apply permitting and enforcement standards to landfill siting, design, and operations, including environmental controls, monitoring, and financial assurance. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Strengthen enforcement protocols	Continue to strengthen and modernize consistent enforcement protocols to support regulatory standards and compliance.
2. Streamline permitting processes	Continue to streamline and modernize permitting processes to improve transparency and efficiency.

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Strategy 5: Promote Best Management Practices and Technology Adoption

Consistent application of BMPs can improve system performance, reduce risks of environmental contamination, and support cost-effective operations. Adoption of proven and emerging technologies can further improve operational efficiency, environmental performance, and safety, while offering opportunities for cost savings where appropriate.

Tactic 1: Promote BMPs. TDEC will promote BMPs in landfill operations, including leachate and gas management, stormwater controls, daily and alternative cover, and advanced environmental monitoring. To advance this tactic, TDEC will implement the following action items:

Action item	Description
1. Provide technical assistance on BMPs	Continue to provide technical assistance on BMPs, focusing on those that prolong the life of disposal facilities in an environmentally responsible manner.
2. Highlight BMP case studies	Highlight BMP case studies and successful implementation across Tennessee.
3. Encourage proven and emerging technologies	Encourage the use and adoption of proven technologies, such as alternative equivalent liners, gas collection, and remote monitoring. To support the evaluation and deployment of proven and emerging technologies, TDEC will continue to permit facilities to evaluate technologies that support operational improvements, provide technical assistance, and monitor cost-effectiveness to identify practical and scalable applications.
4. Promote effective waste management practices	Promote effective waste management principles such as strategic waste placement, compaction, smart design, and technologies that improve facility operations.

Tactic 2: Continue to support and enhance operator training and certification. These efforts will support consistent system performance statewide and expand awareness of BMPs, technologies, and operational practices. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Enhance landfill operator certification	Continue to enhance TDEC's landfill operator certification program by adding modules on advanced compaction techniques, alternative daily cover materials, and gas and leachate system optimization.
2. Expand training accessibility and content	Evaluate the use of both in-person and online formats to increase accessibility and incorporate training on BMPs, emerging technologies, and other operational practices identified through TDEC's technical assistance and regulatory programs.

Best Management Practices

The following table highlights examples of BMPs that can support long-term disposal capacity through improved planning, regional coordination, data transparency, and waste diversion and their relevance to the strategies established under Objective 1.

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Table 1: Objective 1 BMPs

Case Studies	Descriptions	Relevance to Objective 1
Class I Capacity Tracking TDEC (Statewide)	Class I landfills had about 291 million cubic yards of airspace left in 2023, only about 25 million of it in Middle Tennessee.	**Strategy 1**: Reliable capacity data helps identify regional constraints, forecast future disposal needs, and support long-term infrastructure planning.
Interlocal Solid Waste Authority Franklin, Giles, and Lincoln Counties, TN (Regional)	Three counties formed one authority for regional collection, disposal, recycling, and education (Tennessee Ethics Commission 2007)	**Strategy 2**: Regional collaboration allows communities to coordinate disposal planning, share infrastructure and services, and use available resources more efficiently.
Data Systems and Public Viewers TDEC (Statewide)	MyTDEC Forms and WasteBin hold reported data, DLP Data Viewers let the public search facility records, and RecycleBin will chart statewide data.	**Strategy 3**: Accessible solid waste data improves transparency and provides stakeholders with information to understand capacity conditions and support planning decisions.
Local Recycling Requirements Orange County, NC; Atlanta, GA (Local)	Mandates source separation and recycling of scrap metal, clean wood waste, cardboard, and pallets (Orange County, North Carolina n.d.). Requires multi-family property owners to provide recycling containers and submit annual reports on collected recyclables (City of Atlanta n.d.).	**Strategy 5**: Local recycling requirements can increase diversion, reduce disposal volumes, and help preserve landfill capacity.
Convenience Center Recycling Williamson County, TN (Local)	Low-cost drop-off sites where residents sort recyclables handle over 600 tons a month (Williamson County Solid Waste Department n.d.a).	**Strategy 5**: Accessible recycling infrastructure provides opportunities to divert materials from disposal and conserve landfill airspace.
Mixed Construction and Demolition (C&D) Recycling Facility Davidson County, TN (Local)	An automated C&D recycling facility opened in 2024 and processed over 100,000 tons in less than a year, recovering 56 percent (%) for reuse (TDEC 2025d).	**Strategy 5**: C&D recovery reduces disposal volumes by returning usable materials to productive use, helping extend landfill capacity.
Reuse Centers and Materials Exchange Tennessee (Statewide); Leon County, Florida (Local)	TDEC's Materials Marketplace (2017) lets businesses trade surplus materials. Its pilot diverted 20 tons (The Environmental Council of the States n.d.). Leon County's swap shop returned 37 tons of household products to residents in one year (Leon County, Florida 2013)	**Strategy 5**: Reuse and materials exchange keep usable materials in circulation, reducing waste generation and disposal demand.

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Case Studies	Descriptions	Relevance to Objective 1
Reuse and Resale Programs Knoxville and Middle Tennessee (Local)	A nonprofit organization that promotes sustainability and community development through donation, resale, and job training programs. Goodwill Knoxville repairs and resells donated goods (Goodwill Industries–Knoxville, Inc. n.d.). In 2023 alone, Goodwill Middle Tennessee diverted over 25 million pounds of items, primarily textiles, from landfills (Goodwill Industries of Middle Tennessee, Inc. n.d.).	**Strategy 5**: Repair, reuse, and resale extend the useful life of products and reduce the volume of materials entering the disposal system.

2.2 Objective 2: Advance Material Processing Infrastructure and Market Development

Address current infrastructure gaps and support stakeholder investment in modern regional processing capacity. Strengthen end markets for recovered materials through public-private collaboration and promoting education and awareness.

This objective targets the expansion and modernization of Tennessee's material processing infrastructure, including recovered material processing facilities (RMPFs), material recovery facilities (MRFs), and composting facilities, while also supporting the development of strong end markets for recovered materials. Robust infrastructure and end markets within Tennessee are essential for maximizing diversion, supporting economic growth, and ensuring that recyclable materials are recovered and reused.

Background

As discussed in **Section 3.6, Infrastructure and Facilities**, Tennessee's recycling and diversion infrastructure varies across the state, resulting in differences in access to collection, processing, and diversion opportunities. In 2021, Tennessee reported approximately 229,000 tons of residential recycling, with about 60% collected through convenience centers and other drop-off facilities[7]. The statewide recycling rate was approximately 56%, while residential and commercial recycling rates were substantially lower at 5% and 24%, respectively, highlighting opportunities to increase diversion in these sectors.

Tennessee also faces limitations in processing capacity and in-state end markets for recovered materials. Paper, plastics, glass, metals, organics, and other recoverable materials may need to be transported to distant processors or markets, increasing costs and creating challenges for rural and lower-volume programs. High upfront costs and long payback periods can also limit investment in collection, transfer, recycling, and composting infrastructure. Increasing diversion will therefore require coordinated investment in both

[7] (TDEC 2021)

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processing infrastructure and the development of markets that can use recovered materials.

The Solid Waste Management Act of 1991 established the Office of Cooperative Marketing (OCM; TCA § 68-211-826) and a Recycling Market Development Advisory Council (TCA § 68-211-827) to promote cooperative efforts in marketing materials from across the state. After the original RMDDAC's responsibilities sunset in the late 1990s, TDEC engaged in several efforts to support the responsibilities of the OCM, including a grant contract with the Recycling Market Cooperative for Tennessee, a nonprofit organization established in East Tennessee to build cooperative relationships among local governments. In spring 2026, the General Assembly renewed its focus on recycling market development by updating the OCM and reestablishing the RMDDAC to support markets for recovered materials in Tennessee. These efforts provide a foundation for advancing both material processing infrastructure and market development under the 2035 Plan.

The following highlights summarize progress and key accomplishments made toward this objective under the 2025 Plan:

- Established and expanded a statewide hub-and-spoke recycling system, including the Chester County regional hub (over $7 million in grant-funded infrastructure) and Sullivan County's $3.5 million regional MRF (about $790,000 in state grants).
- Standardized and relaunched grant programs for equipment, HHW collection, convenience centers, and planning; in Fiscal Year (FY) 2026, TDEC awarded more than $8 million across 65 grants.
- Upgraded collection infrastructure and reduced reliance on unmanned collection systems; about 528 convenience centers now accept recyclables.
- Strengthened public and private partnerships to enhance system performance and processing capacity.
- Identified and deployed new technologies to improve recycling efficiency, including advanced sorting systems.
- Piloted the Tennessee Materials Marketplace to facilitate reuse and recycling.
- Delivered training programs for recycling operators and communities.
- Partnered with industry and institutions to expand processing capacity and evaluate new uses for recovered materials.
- Expanded regional partnerships and processing networks with significant material throughput.
- Expanded partnerships to support market development and technical assistance.
- Integrated materials management with the Green Star Partnership to support industrial sustainability.

One impactful effort under this objective has been the expansion of Tennessee's hub-and-spoke recycling model, which has improved how materials are collected and managed across urban and rural areas. By pairing centralized processing hubs with local collection "spokes," the model has expanded access to recycling and supported more efficient

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movement of materials to processing facilities. Combined with targeted infrastructure improvements and coordinated outreach, this approach provides a scalable framework for increasing participation, improving material quality, and supporting regional recycling systems. TDEC will continue to build on the progress of these initiatives under the 2035 Plan.



Photo 2: TDEC presents recycling equipment grant funding to Hickman County, April 2025

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Strategies, Tactics, and Action Items

To advance Objective 2, the 2035 Plan establishes five strategies, supported by tactics and action items, to advance material processing infrastructure and market development in Tennessee.

Strategy 1: Strengthen End Markets for Recovered Materials

Ensuring that viable local end uses exist for materials collected for recycling and composting is critical to making diversion economically sustainable. Strong end markets drive demand and investment in recycling infrastructure.

Tactic 1: Partner with economic development agencies to strengthen end markets. Partner with economic development agencies to recruit end-market businesses to Tennessee, recognize existing manufacturers that use recycled materials sourced in the state, and, subject to funding availability, provide grants to support industry and sector growth. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Support recycled-material manufacturers	Explore collaboration opportunities with the Tennessee Department of Economic and Community Development and other partners to support the recruitment and expansion of manufacturers using Tennessee-sourced recycled feedstock.
2. Research recovered-material markets	Research new uses for recovered materials and identify gaps in supply chains and recovery infrastructure.
3. Offer market development grants	Subject to funding availability, offer market development grants in accordance with TCA §§ 68-211-821(a) and (c), 68-211-830, and 68-211-843.

Tactic 2: Adopt State procurement policies that prioritize recycled-content products. Establish realistic, percentage-based targets to increase the use of recycled-content products through State procurement. To advance this tactic, TDEC will research and review existing State procurement policies to identify opportunities to prioritize recycled-content products, where feasible, and reduce the State's waste footprint.

Tactic 3: Make user-friendly online toolkits and resources. Develop tools to help generators identify materials processors in Tennessee and help manufacturers identify providers of Tennessee-sourced materials containing recycled content. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Maintain a directory of regional buyers	Prepare and maintain a directory of regional buyers that includes current information on product specifications, markets, price ranges, and public, private, for-profit, and nonprofit recycling programs.
2. Collect recyclable-material supply information	Collect voluntary information on the quantity and quality of materials offered for sale by recycling programs in Tennessee.
3. Create a digital recycling marketplace	Create and operate an interactive digital marketplace that provides market price ranges and inventories of the quantities, qualities, and locations of recyclable materials available in Tennessee.
4. Market sites for recycling industries	Actively market identified sites to industries that can use available materials and support economic development in the recyclables marketplace.

Strategy 2: Develop Recycling Approaches that Build Economies of Scale Through Cooperative Efforts

Successful recycling operations require a level of scale that makes efforts efficient and cost effective. Higher economies of scale reduce the cost per unit produced through applied specialization and increased volume. Collection and disposal models have successfully implemented scaled approaches moving from expensive small county disposal facilities to more cost-effective regional landfill solutions. Applying a similar strategy to recycling will grow stronger, more efficient infrastructure and better support state end markets.

Tactic 1: Support voluntary regionalization efforts. Support counties, municipalities, Solid Waste Planning Regions (Regions), and other entities in developing and implementing regional recycling programs.

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Tactic 2: Collaborate with relevant state agencies to support recycling industry development. TDEC will collaborate with the Tennessee Department of Economic and Community Development, Tennessee Department of Agriculture, and other relevant state agencies to support economic development and growth within Tennessee's recycling industry.

Tactic 3: Coordinate with the RMDDAC. Coordinate with the Council to support development and implementation of a statewide strategy for marketing recyclable materials. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Develop a Recycled Market Development Plan	Develop a plan that identifies strategies to grow Tennessee's recycling market, including economic impacts, supply and demand, infrastructure needs, barriers, and opportunities, and update the plan every three to five years.
2. Support annual progress reporting	Annually support the RMDDAC's report on progress in implementing the Recycled Market Development Plan.
3. Research recycling market opportunities	Research market needs, opportunities to scale recycling activities, best practices from other states, and industry demand in Tennessee and the southeastern United States (U.S.).
4. Develop recycling industry growth strategies	Identify and develop strategies to recruit, retain, and expand businesses and industries across Tennessee's recycling value chain.
5. Develop standardized educational materials	Develop standardized materials for state and local officials to use in public education and awareness efforts.

Tactic 4: Support recycling solutions that grow scale. Support approaches that build efficiency and improve the quality of recovered materials across the state. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Establish a recycling hub-and-spoke network	Establish a planned recycling hub-and-spoke network in each District, supported by technical assistance and directed grant funding as funds are available.
2. Support cooperative material brokering	Support cooperative material brokering approaches and processes to help local recycling programs strengthen their market position.
3. Evaluate cooperative warehousing-to-market approaches	Investigate cooperative warehousing-to-market approaches that aggregate materials at sufficient scale to meet buyer demand, strengthen market position, and increase the value of available supply.

Strategy 3: Improve Access and Participation in Recycling and Organics Programs

Increasing access to recycling and organics programs can increase participation and reduce the amount of material requiring disposal.

Tactic 1: Encourage the expansion of curbside and drop-off recycling. Expanded and improved services can increase access and participation while better meeting community recycling needs. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Expand curbside and drop-off recycling services	Continue supporting local governments and regions in evaluating and expanding curbside and drop-off recycling services to better meet community needs.

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Action item	Description
2. Review recycling program adoption and expansion	Continue reviewing the adoption and expansion of recycling programs statewide.
3. Provide recycling best practices workshops	Continue providing annual technical assistance workshops for local governments, regions, and other recycling program operators on recycling BMPs.
4. Support organics collection pilot projects	Subject to funding availability, support at least one organics collection pilot project in high-priority areas within each Grand Division by 2030.
5. Improve recycling service access and quality	Promote service access and improve service quality by evaluating program data and metrics, such as paired recycling and refuse bins and expanded hours, and supporting the application of BMPs.

Tactic 2: Increase recycling resources available for communities and local governments to utilize. Current data, guidance, and technical resources can help local governments make informed decisions about recycling services, infrastructure, and program improvements. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Develop community recycling toolkits	Research and develop toolkits with guidance and best practices to help communities strengthen local recycling infrastructure and increase educational awareness.
2. Publish recycling infrastructure and market data	Regularly collect and publish statewide data on capacity gaps, market demand, and recycling infrastructure needs.
3. Assess capacity, demand, and participation	Survey processing capacity, end-market demand, and participation rates, and regularly update infrastructure and market priorities based on the findings.
4. Promote cooperative purchasing and shared contracts	Continue researching and promoting cooperative purchasing and shared contracts to reduce recycling program costs.

Strategy 4: Expand and Modernize Processing and Recovery Infrastructure

Closing infrastructure gaps and increasing statewide processing capacity for recyclables and other recoverable materials are essential for meeting diversion goals and supporting economic development.

Tactic 1: Continue to offer and develop grants for new and upgraded processing infrastructure. Subject to funding availability and applicable statutory grant criteria, funding will prioritize underserved regions and areas that could most benefit from local investment. Grant-funded projects will be expected to demonstrate increased capacity, improved material quality, and the ability to continue operations after grant funding ends. TDEC will offer state grants for new and upgraded facilities in underserved regions, prioritizing certified and planned hub-and-spoke systems that create economies of scale and serve rural and low-volume material areas.

Tactic 2: Incentivize co-location of processing facilities where feasible. Co-location can make productive use of existing solid waste infrastructure and property while creating

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opportunities for operational efficiencies. To advance this tactic, TDEC will promote the productive reuse of existing solid waste properties, including brownfields such as closed landfills that would otherwise remain unproductive.

Tactic 3: Research and support technology and innovation pilot projects. Pilot projects can help evaluate advanced sorting, automation, contamination reduction systems, and other modern technologies for practical application in Tennessee. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Support smaller-scale waste projects	Develop a strategy to provide technical and regulatory assistance for smaller-scale recycling, material recovery, and processing projects that can address local or regional needs.
2. Promote advanced waste sorting technologies	Promote the use of effective material processing and sorting technologies by providing technical information and identifying available funding opportunities for local governments and other facility operators considering equipment upgrades, such as optical sorters, screens, balers, and compactors.
3. Pilot advanced waste management systems	Evaluate opportunities to partner with local governments, facility operators, and other organizations to pilot proven or emerging material recovery and processing technologies appropriate for Tennessee.

Best Management Practices

The following table highlights examples of BMPs that support recycling and diversion, infrastructure and market development, and their relevance to the strategies established under Objective 2.

Table 2: Objective 2 BMPs

Case Studies	Descriptions	Relevance to Objective 2
Public Materials Recovery Facility Charleston County, South Carolina (Local)	Charleston County opened a county-owned facility in December 2020 that can process 25 tons of recyclables an hour using optical sorting and robotics. A private company, Charleston Recycling Services, runs it under a partnership with the county (Charleston County, South Carolina n.d.)	**Strategy 1:** Public-private partnerships (PPPs) can expand processing capacity and increase the recovery of materials available for end markets.
C&D Recycling Facility Davidson County, TN (Local)	WM opened an automated C&D recycling facility next to its Nashville C&D landfill. In less than a year, it processed more than 100,000 tons and recovered over 56% for reuse in 2025 (TDEC 2025d).	**Strategy 1:** Advanced processing facilities can recover usable materials from the waste stream and increase the supply of materials available for reuse and recycling markets.

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Case Studies	Descriptions	Relevance to Objective 2
Recycling Market Development Advisory Council South Carolina (State)	The South Carolina Commerce Department's council recruits recycling industry and reports to the legislature each year. In 2025, eight recycling companies announced 648 jobs and $438.5 million in investment (South Carolina Department of Commerce 2025).	**Strategy 1:** Coordination between recycling and economic development programs can attract recycling businesses, strengthen end markets, and support investment in the recycling industry.
Iowa Waste Exchange Iowa (State)	A free, confidential state service that matches businesses' byproducts with users. In FY2024 it made 461 matches which diverted more than 87,000 tons of material and saved $3.4 million. Since 1990, the program has diverted more than 4.5 million tons of materials (Iowa Department of Natural Resources 2024a).	**Strategy 1:** Materials exchanges connect generators with potential end users, helping create markets for recovered materials and keeping usable materials in circulation.
Tennessee Materials Marketplace Tennessee (State)	Launched in 2017, the online marketplace lets businesses trade surplus materials for reuse and recycling; its pilot diverted 20 tons of materials (Environmental Council of the States n.d.).	**Strategy 2:** Materials marketplaces can facilitate cooperative exchange of recovered materials, helping aggregate supply and connect businesses with reuse and recycling opportunities.
West Tennessee Regional Recycling Hub Chester County, TN (Regional)	Chester County serves as a recycling hub for surrounding counties, including Hardin, Hardeman, McNairy, and Henderson. Its solid waste directors have secured over $7 million in grants, including funding for a recycling education classroom (Chester County Solid Waste Department n.d.).	**Strategy 2:** Regional hub-and-spoke systems allow communities to aggregate materials, share infrastructure, and achieve economies of scale that may not be feasible individually.
Statewide Recycling Initiative Michigan (State)	Michigan paired infrastructure grants and education with more than 333,000 new curbside carts in 34 communities. The statewide recycling rate rose from 14.25% before 2019 to over 25%, with 723,174 tons recycled in FY2024 (Michigan Department of Environment, Great Lakes, and Energy 2025).	**Strategy 3:** Coordinated investment in collection infrastructure and education can expand recycling access, increase participation, and improve statewide recovery.
Cart-Based Recycling Expansion Columbia, South Carolina, and Florence, Alabama (Local)	Columbia replaced 18-gallon bins with 96-gallon carts in 2015, projecting 6,563 more tons of recyclables a year; recovered recyclables rose 127% within three years (The Recycling Partnership 2015). Florence received the Recycling Partnership's first cart grant in 2014 and rolled out more than 14,000 carts (The Recycling Partnership 2014).	**Strategy 3:** Convenient curbside collection infrastructure can increase residential participation and the quantity of recyclable materials recovered.

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Case Studies	Descriptions	Relevance to Objective 2
Regional Materials Recovery Facility Sullivan County, TN (Regional)	Sullivan County opened a $3.5 million, 16,000-square-foot materials recovery facility in 2025, supported by more than $791,000 in state equipment grants. It serves as a recycling hub for Northeast Tennessee, including Unicoi County (Waste Advantage Magazine 2025).	**Strategy 4:** Regional processing facilities can expand recovery capacity, serve multiple communities, and address processing infrastructure gaps.
Recycling Fund and Hub-and-Spoke Model Alabama (State)	The Alabama Department of Environmental Management (ADEM) has awarded more than $23 million in recycling grants since 2009 to about 34 local programs (ADEM 2022), including new awards in 2025 (ADEM 2025). After a 2016 study proposed eight regional hubs, ADEM began giving grant priority to hub-and-spoke collection (ADEM 2016a).	**Strategy 4:** Targeted grant funding can support regional recycling infrastructure and direct investment toward systems that improve processing capacity and economies of scale.
Recycling and Waste Diversion Grants Georgia (State)	Georgia Environmental Protection Division (GA EPD) funds local recycling equipment and requires each grantee to report results; based on FY 2026 estimates, projects had diverted more than 4,000 tons of materials from Georgia's landfills since the Recycling and Waste Diversion Grant's beginning in FY2023 (GA EPD n.d.)	**Strategy 4:** State grant programs can support recycling equipment and facility improvements that increase recovery capacity and divert additional material from disposal.

2.3 Objective 3: Increase Diversion of Organic Waste

Develop strategies to reduce organic waste entering MSW landfills by promoting reuse, beneficial use, composting, and source reduction efforts. Support regional collaboration by sharing best practices, establishing communication channels, and coordinating efforts to enhance resource sharing and efficiency.

This objective targets the reduction and diversion of organic materials from disposal through food waste prevention, food rescue and reuse, composting, anaerobic digestion (AD), and other organics management practices. Expanding organics diversion opportunities and supporting the infrastructure needed to manage these materials are essential for reducing disposal, extending landfill life, supporting economic growth, and recovering valuable resources.

Background

Organics make up the largest portion of the waste stream in Tennessee at approximately 31% of overall generated waste based on TDEC's 2026 waste characterization study provided as **Appendix 3, TDEC Waste Characterization Study**. As discussed in **Section 3.5, Statewide Waste Generation and Composition**, these findings identify organics as a significant opportunity for reducing the amount of material requiring disposal. Investing in Tennessee's organics diversion infrastructure could mean fewer materials sent to a landfill for disposal resulting in lower disposal costs, extended landfill life, reduced methane

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emissions, and opportunities for economic development and local job growth. Additional information on Tennessee's existing composting and diversion infrastructure is provided in **Section 3.6, Infrastructure and Facilities**.

Food waste represents an important component of organics management. U.S. EPA estimates that in 2019, approximately 66 million tons of wasted food were generated by the food retail, food service, and residential sectors, with about 60% sent to landfills.[8] U.S. EPA broadly defines "wasted food" as food that is not used for its intended purpose, including edible food that can be recovered as well as food ultimately discarded.[9] ReFED estimates that in 2024, approximately 70 million tons, or 29% of the U.S. food supply, became surplus food, valued at approximately $380 billion, with approximately 20 million tons sent to landfill.[10]

Consistent with U.S. EPA's waste management hierarchy, source reduction is the preferred approach because it prevents waste before it is generated, followed by reuse and recovery of edible food for people where possible.[11] For organic materials that cannot be prevented or recovered for higher uses, composting, AD, and other organics management practices provide alternatives to landfill disposal. This hierarchy provides a framework for Tennessee to prioritize food waste prevention and food rescue while expanding opportunities to divert remaining organic materials from disposal.

Under the 2025 Plan, TDEC worked to elevate food waste reduction and composting from niche activities to more widely supported programs. Initiatives such as Get Food Smart TN helped bring organics management to the forefront of public conversation, while regulatory updates continued to reduce barriers to composting. By pairing policy changes with funding, outreach, and partnerships, Tennessee created momentum around organics diversion as a practical and accessible strategy. The following highlights summarize progress/key accomplishments made toward this objective:

- Deployed grants and technical assistance for composting and food recovery organizations.
- Developed new composting regulations to improve oversight and reduce barriers.
- Expanded training and outreach, including workshops, webinars, and stakeholder engagement.
- Launched the Get Food Smart program and related public engagement.
- Increased support for food donation and redistribution through food pantries and policy improvements.
- Developed public-facing tools, including compost facility listings and organics management websites.

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[8] (U.S. EPA 2026a)
[9] (U.S. EPA 2026b)
[10] (ReFED 2026)
[11] (U.S. EPA 2025b)

Building on this progress, TDEC will continue to promote food waste prevention and food rescue through Get Food Smart TN, research best practices and policies to encourage organics diversion, and use data to inform programmatic decision-making. The strategies and tactics that follow describe how TDEC will advance these efforts under the 2035 Plan.



Photo 3: TDEC outreach booth during Food Waste Prevention Week, October 2026

Strategies, Tactics, and Action Items

To advance Objective 3, the 2035 Plan establishes three strategies, supported by tactics and action items, to increase the diversion of organic waste in Tennessee.

Strategy 1: Expand Composting and Organics Processing Infrastructure

Investing in composting and organics processing infrastructure is key to diverting organic materials away from landfills and toward beneficial reuse. Tennessee will pursue a multi-pronged approach to support the development of small-scale, localized and regional organics infrastructure, minimize transportation distances, develop local economic supply chains for diversion and reuse, and demonstrate the value of an organics reuse ecosystem. Because diversion from large organic waste generators can have a greater systemic impact, Tennessee will also target commercial and institutional organics diversion through education, technical assistance, and expanded end markets.

Tactic 1: Expand organics processing infrastructure through approaches appropriate to local and regional needs. Infrastructure needs vary based on waste volumes, available feedstocks, existing facilities, transportation distances, and local conditions. TDEC will support opportunities ranging from community-scale and agricultural composting to regional composting and AD systems while identifying infrastructure gaps and opportunities to reduce barriers to development. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Support composting facilities	Work with underserved areas to identify opportunities for community scale and agriculture focused composting.
2. Expand regional organics processing	Explore co-locating organics collection and processing with existing infrastructure or near feedstock sources to reduce costs and improve operational efficiencies and support regional hub-and-spoke composting and AD programs where feasible.
3. Reduce permitting burdens for small-scale operators	Research opportunities to reduce permitting burdens for small-scale composting and organics processing operators.

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Action item	Description
4. Assess organics processing infrastructure gaps	Conduct a statewide gap analysis of composting and organics processing infrastructure by 2030.

Tactic 2: TDEC will support increased commercial and institutional organics waste diversion. Commercial and institutional generators represent an important opportunity to divert larger quantities of organic materials from disposal. Education, technical assistance, accessible resources, and development of end markets can help businesses and institutions establish and expand organics diversion programs. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Promote community composting and end markets	Support educational initiatives that promote backyard and community composting and expand end markets for compost and digestate in agriculture, landscaping, and public works projects.
2. Increase awareness of organics diversion	Lead public awareness efforts on organics diversion through partnerships with businesses and institutions.
3. Develop an organics diversion digital hub	Create a digital hub that provides residents, businesses, and institutions with resources and funding opportunities to increase organics diversion.
4. Provide organics diversion technical assistance	Provide technical assistance to businesses and institutions launching or participating in organics diversion programs.
5. Publish food waste diversion case studies	Publish case studies highlighting food waste diversion efforts in businesses and institutions to support broader implementation.

Strategy 2: Promote Food Waste Prevention and Rescue

Tennessee will address food waste by prioritizing prevention and directing edible surplus food to help communities in need, consistent with the waste management hierarchy. Tennessee will focus on food waste prevention education to help families reduce wasted food and associated costs and on food rescue efforts that support community resilience and provide food to those who need it most.

Tactic 1: Target food waste prevention through resources and support. Education, technical assistance, accessible resources, and information on funding opportunities can help households, businesses, institutions, and local governments prevent food waste and expand food rescue efforts. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Increase awareness of food waste prevention and rescue	Continue public awareness efforts through Get Food Smart TN partnerships with state agencies, schools, universities, businesses, organizations, and local governments.
2. Develop a food waste prevention and rescue digital hub	Create a digital hub that provides resources and funding opportunities to support food waste prevention and rescue.

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Action item	Description
3. Provide food waste prevention and rescue technical assistance	Provide technical assistance to schools, universities, businesses, organizations, and local governments launching or participating in food waste prevention and rescue efforts.
4. Publish food waste prevention and rescue case studies	Publish case studies highlighting food waste prevention and rescue efforts to support broader implementation.
5. Identify barriers and funding opportunities	Research barriers and funding opportunities related to food waste prevention and rescue, and publish the findings.

Tactic 2: Foster public and private partnerships to support food rescue and donation programs for communities in need across Tennessee. Partnerships can connect food generators with organizations that can recover and redistribute edible surplus food, increasing food rescue while reducing the amount of food requiring disposal. Improved coordination and tracking can also help Tennessee better understand and expand these efforts. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Connect food generators with food rescue programs	Connect large food generators, such as grocery stores, restaurants, and hotels, with local food rescue and donation programs to increase organics diversion from landfills.
2. Establish a food rescue working group	Establish and coordinate a food rescue working group to collect annual food rescue data.
3. Track food rescue and diversion	Develop tracking measures to annually report the volume of food rescued and diverted by participating organizations.
4. Collaborate with state agencies on food rescue	Work with state agencies, including the Department of Agriculture and Department of Education, to identify collaboration opportunities to reduce food waste and support food rescue programs.

Strategy 3: Integrate Organics Diversion into Regional Solid Waste Planning

Successful integration of organics diversion requires intentional and strategic planning to effectively meet diversion goals. TDEC will support increased organics diversion by incorporating organics into regional planning, improving measurement of diversion and infrastructure, researching best practices and policies, and using data to inform programmatic decision-making.

Tactic 1: Require all regional plans to incorporate organics diversion into solid waste plans by July 1, 2028. Including organics in regional solid waste plans in accordance with TCA § 68-211-815 will help Regions establish strategies, goals, and progress measures that reflect local organics management needs and opportunities. Regional solid waste plan requirements are further discussed in **Attachment B, Section 1.2, Implementation Responsibilities**.

Tactic 2: Reliably measure organics diversion. Consistent metrics and reporting will improve understanding of organics diversion, participation, and infrastructure needs and provide data to evaluate progress and inform future planning. To advance this tactic, TDEC will advance the following action items:

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Action item	Description
1. Establish organics diversion metrics	Require regional solid waste plans to include specific organics diversion metrics, such as tons diverted and participation rates.
2. Publish statewide organics data	Annually collect and publish statewide data on organics diversion and infrastructure.
3. Promote organics tracking technologies	Encourage the adoption of technologies that effectively monitor and track organics diversion.

Tactic 3: Provide policy and regulatory support to advance organics diversion goals. Policy, regulatory, funding, and collaborative approaches can help reduce barriers to organics diversion and support development and adoption of effective organics management practices and technologies. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Pilot innovative organics processing methods	Research and explore pilot projects for innovative organics processing methods, such as AD, biochar, and backyard and community composting.
2. Collaborate on organics diversion initiatives	Explore collaboration opportunities with state agencies, universities, and extension services to increase the impact of organics diversion statewide.
3. Promote local organics diversion policies	Research and encourage local adoption of policies that incentivize organics diversion, such as procurement preferences and zoning for composting.
4. Pursue funding for food waste diversion	Seek additional funding opportunities to support food waste prevention efforts and expand food waste diversion infrastructure.

Best Management Practices

The following table highlights examples of BMPs that support increased diversion of organic waste and their relevance to the strategies established under Objective 3.

Table 3: Objective 3 BPMs

Case Studies	Descriptions	Relevance to Objective 3
Mixed Waste Composting Sevier County, TN (Local)	Sevier Solid Waste runs North America's largest mixed MSW composting facility. In 2025 it processed over 119,000 tons and diverted over 95% of household waste for 39,221 households (Sevier Solid Waste n.d.)	**Strategy 1:** Large-scale composting infrastructure can divert organic materials from disposal and recover those materials for beneficial use.
Curbside Food Scraps Pilots Nashville and Chattanooga, TN (Local)	Nashville's 2023 pilot served 750 homes and collected about 11.5 tons in three months, twice the monthly amount at its drop-off sites; a private donation covered its $250,000 cost (Metropolitan Government of Nashville and Davidson County n.d.a, Biocycle 2024). Chattanooga piloted curbside composting and glass recycling from October 2025 through June 2026 (City of Chattanooga 2025).	**Strategy 1:** Curbside organics collection can expand access to food waste diversion and increase the amount of organic material available for composting and beneficial use.

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Case Studies	Descriptions	Relevance to Objective 3
Drop-Off and Private Collection Partnerships Chattanooga and Shelby County, TN; Athens-Clarke County, GA (Local)	Chattanooga offers free food scrap drop-off at NewTerra Compost kiosks, including its five recycling centers (City of Chattanooga n.d.), and Shelby County partners with The Compost Fairy for pickup and drop-off (The Compost Fairy n.d.). Athens-Clarke County runs a food scraps drop-off program and a commercial composting facility that sells compost to the public (Athens-Clarke County, Georgia n.d.).	**Strategy 1:** Public and private collection partnerships can expand access to organics diversion and connect communities with local processing infrastructure.
Backyard Composting Knoxville, TN (Local)	The City of Knoxville publishes a step-by-step backyard composting guide (City of Knoxville, Tennessee n.d.).	**Strategy 1:** Backyard composting provides a localized option for diverting household organics and producing beneficial compost.
Campus Composting Knoxville, TN (Local)	The University of Tennessee composted over 2.25 million pounds of campus organics from July 2022 to June 2023 (University of Tennessee, Knoxville n.d.)	**Strategy 1:** Campus composting demonstrates how institutions can divert large quantities of organic materials from disposal
Tennessee Composting Council Tennessee (Statewide)	This nonprofit, founded in 2021, promotes compost production and use through education, advocacy, and a statewide network (Tennessee Composting Council n.d.).	**Strategy 1:** Statewide partnerships, education, and industry networks can support the expansion of composting infrastructure and markets for finished compost.
Captain's Galley Restaurant, Pickwick Landing State Park Counce, TN (State Park)	The restaurant tracks all food waste, and TDEC trains its staff in source reduction. With prep planning and menu specials, it diverted 22 tons in 2018 (U.S. EPA 2025)	**Strategy 2:** Tracking food waste and implementing source reduction practices can prevent food waste before it occurs and reduce the amount requiring diversion or disposal.
Food Bank and App-Based Food Rescue Chattanooga, Memphis, and Middle TN (Local)	The Chattanooga Area Food Bank recovers millions of pounds of food each year through retail rescue and donations (Chattanooga Area Food Bank n.d.). Clean Memphis' Project Green Fork used the Careit app to rescue over 250,000 pounds, providing more than 200,000 meals (Careit, Inc. n.d.). The Second Harvest Food bank has diverted over 29 million pounds of surplus food, supporting communities across 46 counties in Middle TN (Second Harvest Food Bank of Middle Tennessee n.d.).	**Strategy 2:** Food rescue partnerships and digital tools can connect generators with organizations that redistribute surplus food, reducing waste while supporting communities in need.

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Case Studies	Descriptions	Relevance to Objective 3
Consumer Prevention Campaigns Oregon (State); Central Ohio (Regional)	Oregon's "Don't Let Good Food Go Bad" (2021) and Central Ohio's "Save More Than Food" (2020) frame food waste as wasted money. Both teach proper storage, and Ohio also explains date labels (U.S. EPA 2026c)	**Strategy 2:** Public education campaigns can help households prevent food waste through improved purchasing, storage, and food management practices.
Regional Planning Tools Nashville, TN (Local); Georgia (State)	Nashville's pilot supports the Davidson County Solid Waste Region's 2019 Zero Waste Master Plan (Metropolitan Government of Nashville and Davidson County n.d.b). Georgia's toolkit helps local governments assess the feasibility and cost of organics collection (Georgia Department of Community Affairs n.d.)	**Strategy 3:** Planning tools can help local and regional governments evaluate organics diversion opportunities, costs, and infrastructure needs and incorporate them into solid waste planning.
Statewide Policy Framework North Carolina (State)	Early-1990s statutes, including a 1993 landfill ban on yard waste, and state composting rules helped build 79 composting operations. In 2020, permitted facilities received over 772,000 tons of organics (North Carolina Department of Environmental Quality 2021)	**Strategy 3:** State policies and regulatory frameworks can encourage organics diversion and support the development of composting and processing infrastructure.
Universal Recycling Ordinance Austin, TX (Local)	Austin requires food-permitted businesses to provide organics diversion and property owners to file annual plans, with fines up to $2,000 per day (City of Austin, Texas n.d.). The City also collects residential food scraps curbside (City of Austin, Texas 2026)	**Strategy 3:** Local organics diversion requirements can increase participation, establish measurable program responsibilities, and reduce organic materials entering the disposal system.

2.4 Objective 4: Strengthen Goals and Data-Driven Performance Metrics

Establish clear, measurable, and forward-looking goals for solid waste and materials management, supported by modernized data collection and reporting systems. Improve data accuracy, transparency, and timeliness to better track material flows, disposal trends, and diversion rates, informing more strategic decision-making and progress reporting.

Objective 4 is closely related to Objective 1 of the 2025 Plan, "Update Goals and Measure Progress." Setting ambitious, data-driven goals and investing in modern reporting systems enable Tennessee to track progress, identify trends, and help local governments make informed decisions. This commitment to transparency and accountability is essential for building public trust, guiding continuous improvement, and ensuring that the state's materials management system remains effective and adaptable.

Background

TDEC's solid waste data and reporting systems face challenges that limit the state's ability to track progress, evaluate programs, and make data-driven decisions. Continued

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modernization and integration of public-facing dashboards and internal databases will improve data accuracy, validation, transparency, analysis, and usability.

Reporting gaps also remain for some waste streams, particularly materials managed by private businesses, institutions, haulers, and processors. These gaps limit understanding of material quantities, origins, disposal, recycling, and diversion. Periodic waste characterization studies provide complementary, more detailed information on the types and proportions of materials in the waste stream, as discussed in **Section 3.5, Statewide Waste Generation and Composition**. Together, improved reporting and periodic characterization can provide more reliable information for planning and decision-making.

The following highlights summarize progress and key accomplishments made toward this objective under the 2025 Plan:

- Modernized the Annual Progress Report (APR) tool and reviewed existing waste reduction and recycling goals.
- Developed enhanced data management systems, including new tools, data dictionaries, and processes to improve data integrity and usability.
- Launched the Local Solid Waste Management Reporting and Planning Guide to support consistent, accurate statewide reporting.
- Created stakeholder working groups to improve data collection and reporting practices.
- Expanded data collection, including material origin reporting through the SWOR.
- Deployed digital tools to improve data access and decision making.



Photo 4: TDEC staff participate in the 2024 waste characterization study

Building on this progress, Tennessee will continue to modernize data collection and reporting and strengthen performance measurement under the 2035 Plan.

Strategies, Tactics, and Action Items

To advance Objective 4, the 2035 Plan establishes two strategies, supported by tactics and action items, to strengthen goals and data-driven performance metrics in Tennessee.

Strategy 1: Modernize and Integrate Data Systems

Modern, integrated data systems are the foundation for measuring progress toward Tennessee's 25% waste reduction and diversion goal and other solid waste management

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objectives. Connecting TDEC's platforms and improving data validation will provide TDEC, Regions, local governments, and the public with timely, accurate, and accessible information to guide planning, investment, and performance measurement.

Tactic 1: Continue to support public engagement and transparency in data reporting through modernization and integration of databases, online tools, platforms, and other resources. Improved integration, standardized data management, and accessible public-facing tools can increase data quality and transparency while making information easier to collect, use, and understand. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Improve public-facing solid waste dashboards	Continue to monitor, update, and improve existing public-facing dashboards for solid waste management to provide transparency on diversion rates, capacity, program participation, service coverage, and historical data.
2. Upgrade and integrate data platforms	Continue to upgrade and integrate data platforms (e.g., MyTDEC Forms, RecycleBin, WasteBin) to support real-time entry, validation, analytics, and GIS. Increase data extraction and integration capabilities, improve data validation processes, and enhance the customer service experience for users of TDEC databases, online tools, and platforms.
3. Provide user training and technical guidance	Continue to provide user training, resources, and guidance, and research opportunities to optimize technical training to support customer-friendly tools and platforms (e.g., Where to Take It TN).
4. Host stakeholder engagement sessions	Host regular webinars, regional briefings, and listening sessions to review findings and gather feedback from the public and other stakeholders.
5. Develop a standardized data management plan	Create and implement an industry-standard data management plan that identifies the data needed in each dataset; how those data will be collected, verified, and stored; and the products expected to be derived from them.
6. Develop standardized data dictionaries	Prepare and make available to data users, as part of data or data product sharing, a standard data dictionary for each managed database detailing field definitions.

Strategy 2: Expand Coverage for Underreported Waste Streams

Much of Tennessee's industrial, commercial, and institutional (ICI) waste is managed by private entities and is not fully captured through existing reporting. These gaps limit the state's ability to understand material flows, disposal, recycling, and diversion. Expanding reporting participation and supplementing reported data with periodic waste characterization studies will provide a more complete understanding of Tennessee's waste streams and help identify where programs and investments are most needed.

Tactic 1: Foster collaborative networks of partners and stakeholders to support voluntary reporting initiatives. Collaboration with private industry, businesses, nonprofits, institutions, and other partners can help identify reporting barriers, increase participation, and improve the coverage and usefulness of statewide solid waste data. To advance this tactic, TDEC will advance the following action items:

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Action item	Description
1. Encourage voluntary waste reporting	Research and explore ways to incentivize and encourage voluntary reporting to better capture statewide data on waste generation, disposal, recycling, and diversion.
2. Streamline Department reporting processes	Work with partners to identify reporting barriers and obstacles and explore ways to ease and streamline Department reporting processes.

Tactic 2: Strengthen waste characterization data to inform programmatic decision-making.
Periodic waste characterization studies can supplement ongoing reporting by providing detailed information on the types and proportions of materials in Tennessee's waste stream and identifying opportunities for increased diversion. To advance this tactic, TDEC will explore opportunities to collaborate with partners and institutions on desktop waste characterization studies, subject to funding availability.

Best Management Practices

The following table highlights BMPs that support reliable data, consistent reporting, and performance measurement and their relevance to the strategies established under Objective 4.

Table 4: Objective 4 BMPs

Case Studies	Descriptions	Relevance to Objective 4
TDEC Data Platforms Tennessee (State)	Reports flow from MyTDEC Forms into WasteBin; DLP Data Viewers let the public search facility records; the planned RecycleBin will chart statewide data with a data dictionary.	**Strategy 1:** Integrated, accessible data systems improve transparency and support informed planning.
SCORE Reporting and Dashboard Minnesota (State)	All 87 counties and one regional district report every year. Results appear on an interactive dashboard; the 2024 recycling rate was 44.7% (Minnesota Pollution Control Agency n.d.).	**Strategy 1:** Consistent reporting and public dashboards make performance easier to track and communicate.
Local Reports and County Rankings North Carolina (State)	Every county and city reports annually, and the state ranks counties by recycling per person, which averaged 402 pounds statewide in FY2024–25 (North Carolina Department of Environmental Quality 2024), and maps which facility serves each area (North Carolina Department of Environmental Quality n.d.a).	**Strategy 1:** Standardized local reporting and public comparisons improve transparency and help measure performance.
Landfill Capacity Reporting Michigan (State)	A 2022 law moved landfill reporting from cubic yards to tons. In FY2025, 65 landfills reported about 23 years of remaining capacity (Michigan Department of Environment, Great Lakes, and Energy 2026a).	**Strategy 1:** Consistent capacity reporting provides reliable data for tracking disposal needs and supporting long-term planning.

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Case Studies	Descriptions	Relevance to Objective 4
Data Downloads with Field Definitions U.S. EPA (Federal)	Each U.S. EPA enforcement and compliance data download includes a summary that lists files and defines every data element (U.S. EPA n.d.).	**Strategy 1:** Standard data definitions improve consistency and support reliable comparisons across datasets and years.
National Metrics Framework U.S. EPA (Federal)	U.S. EPA tracks generation, recycling, composting, combustion, and landfilling by material and product; 2018 is the latest data year (U.S. EPA 2020).	**Strategy 1:** Consistent statewide metrics provide a common basis for tracking waste generation, diversion, and disposal trends.
Recycling Reporting Law Michigan (State)	Since 2016, recyclers report online. In FY2025, 59 organizations reported 800,940 tons; EGLE notes non-reporters remain a key gap (Michigan Department of Environment, Great Lakes, and Energy 2026b).	**Strategy 2:** Expanded recycler reporting helps capture material flows that may otherwise be missing from state data.
Recovered Materials Dealer Reporting Florida (State)	Dealers handling over 600 tons a year of any recovered material must annually certify and report by county of origin (Florida Department of Environmental Protection 2025).	**Strategy 2:** Dealer reporting improves visibility into recovered material quantities and where those materials originate.
Recycler Reporting to Counties Kentucky (State)	Recyclers report annually to counties, and state staff cross-check the figures; the 2024 rate was 29.9% (Kentucky Department for Environmental Protection 2026).	**Strategy 2:** Recycler reporting and data verification help close information gaps and improve recycling estimates.

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Photo 5: Crew sorting materials during TDEC's 2024 waste characterization study

2.5 Objective 5: Manage Problematic or Hard-to-Manage Waste

Provide guidance on managing problematic or hard-to-manage waste, including but not limited to HHW, waste tires, batteries, used oil, electronics, solar panels, and wind turbines. Promote proven emerging technologies and establish programs to prevent illegal dumping.

This objective expands upon two objectives of the 2025 Plan: Objective 7, "Ensure Sufficient and Environmentally Sound Disposal," and Objective 3, "Promote Material Processing and End Use in Tennessee." As new products and technologies emerge, Tennessee must address increasingly complex waste streams. By proactively managing problematic and hard-to-manage wastes, the state can protect human health and the environment, discourage illegal dumping, and ensure that its solid waste management system remains forward-looking and resilient.

Background

Problematic or hard-to-manage waste streams include, but are not limited to, HHW, waste tires, batteries, used oil, electronics, solar panels, and wind turbine blades. These wastes can present unique environmental, health, safety, or economic challenges and may require specialized collection, processing, recycling, or disposal. Proper management is important to reduce environmental and public health risks, prevent contamination and illegal dumping, and provide appropriate end-of-life management options as products and technologies change.

Tennessee has established programs for several of these wastes. TDEC's HHW Program provides mobile collection events and supports permanent collection infrastructure to provide residents with safe disposal options. Tennessee's Mobile Collection Service has operated since 1993, and more than 383,000 Tennessee households have used over 1,500 one-day collection events to properly dispose of more than 25 million pounds of HHW.[12] The program is funded by a $0.95-per-ton surcharge on waste entering landfills, while separate grants support permanent and temporary HHW collection infrastructure. Local governments also provide collection opportunities for batteries, oil, paint, antifreeze, and electronics (BOPAE), providing additional options for wastes that require specialized management.

Tennessee's Waste Tire Program provides a complementary framework for the collection, transportation, processing, reuse, and disposal of waste tires. Whole, unshredded tires may not be landfilled, and each county is required to provide at least one waste tire collection site. Regulatory requirements for waste tire haulers strengthen tracking and oversight, while the Tire Environmental Act Program (TEAP) supports infrastructure, research, technologies, and beneficial end uses for Tennessee waste tires. Since 2015, TEAP

[12] (TDEC 2026d)

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has awarded more than $12 million and supported the diversion of nearly 9.5 million tires, or approximately 107,000 tons of scrap tires, from landfills for beneficial uses.[13]

Under the 2025 Plan, TDEC continued to strengthen programs and infrastructure for the safe collection, management, recycling, and beneficial use of problematic and hard-to-manage wastes. The following highlights summarize progress and key accomplishments made toward this objective:

- Expanded HHW services through new infrastructure, mobile collection events, and operational training, including expanded year-round collection through new facilities and pilot programs.
- Expanded beneficial uses and end markets for waste tires through TEAP and supported the use of tire-derived materials in infrastructure, wastewater systems, and other applications.
- Developed transparency tools, including facility mapping and public-facing recycling resources.
- Advanced targeted programs for specialized waste streams, including electronics recycling and school laboratory cleanouts.

Building on this progress, TDEC will continue to optimize existing programs while addressing collection and infrastructure gaps, strengthening oversight, and expanding markets and beneficial uses for problematic and emerging waste streams under the 2035 Plan.



Photo 6: TDEC HHW mobile collection event, 2025

Strategies, Tactics, and Action Items

To advance Objective 5, the 2035 Plan establishes three strategies, supported by tactics and action items, to manage problematic or hard-to-manage waste in Tennessee.

Strategy 1: Optimize Access to Safe Disposal and Collection Programs

Convenient, safe disposal options are one of the most effective ways to keep HHW and other problematic wastes out of landfills, waterways, and illegal dump sites. Expanding access, especially in rural, underserved, and high-dumping-risk areas, provides residents with appropriate management options while protecting public health and the environment.

Tactic 1: Optimize HHW collection events, prioritizing rural, underserved, and high-dumping-risk areas. Targeting collection services based on access and need can expand opportunities for

[13] (TDEC n.d.c)

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safe HHW management and reduce improper disposal. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Continue HHW collection events	Continue to carry out collection events in communities for the safe disposal of HHW.
2. Increase HHW outreach and public awareness	Increase outreach and engagement to improve public awareness and participation in HHW collection events.

Tactic 2: Research and explore opportunities with retailers and manufacturers to promote take-back programs for batteries, paint, electronics, and other BOPAE items. Partnerships with retailers and manufacturers can supplement public collection programs and provide residents with additional convenient options for safely recycling or managing BOPAE wastes. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Explore partnerships with retailers and manufacturers	Conduct targeted outreach to retailers and manufacturers to identify partnership opportunities for managing HHW and BOPAE wastes, including potential waste drop-off and recycling or disposal options.
2. Pursue grant funding for consumer battery recycling	Pursue grant funding to supplement local governments' capabilities to collect consumer batteries for recycling and proper end-of-life management.

Tactic 3: Increase public awareness of available drop-off sites using digital tools and targeted outreach. Clear information on where and how to manage HHW can improve participation in existing programs and help communities make effective use of available collection infrastructure. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Increase awareness of HHW drop-off locations	Develop educational materials, such as toolkits, flyers, and one-pagers, and use digital marketing campaigns to increase public awareness and use of existing HHW drop-off locations.
2. Assess HHW drop-off infrastructure needs	Assess operational capacity and statewide needs for new drop-off sites and expansion of existing sites, using the findings to inform decision-making.
3. Support HHW facility and infrastructure grants	In accordance with TCA § 68-211-828, support grants for permanent HHW facilities and drop-off infrastructure, subject to funding availability.

Strategy 2: Strengthen Regulatory Oversight and Enforcement

Consistent oversight helps ensure that problematic waste streams, particularly waste tires, are tracked and managed properly from collection through final management. Clear requirements, inspections, training, and enforcement support compliance, deter illegal dumping, and protect communities from environmental and cleanup costs.

Tactic 1: Continue to implement and enforce waste tire hauler requirements. Registration, manifest tracking, financial assurance, inspections, and training provide greater accountability for the movement and management of waste tires and help prevent illegal dumping. To advance this tactic, TDEC will advance the following action items:

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Action item	Description
1. Strengthen waste tire hauler requirements	Enhance compliance, curb illegal dumping, and support safe management of waste tires through registration, manifest tracking, financial assurance, and other applicable hauler requirements.
2. Continue targeted inspections and enforcement	Continue conducting targeted inspections and enforcement actions against bad actors and addressing chronic enforcement problems.
3. Provide training on waste tire regulations	Provide training for field office staff, waste tire generators, haulers, and receivers on applicable regulatory requirements.

Tactic 2: Strengthen the tire program by improving internal processes and identifying opportunities to work with external partners. Improved reporting, coordination, and partnerships can strengthen implementation of Tennessee's waste tire program and help identify persistent management, enforcement, and market challenges. To advance this tactic, TDEC will advance the following action items:.

Action item	Description
1. Standardize annual reporting requirements	Standardize annual reporting requirements for waste tires and improve transparency by incorporating data into the Annual Report to the Governor and General Assembly.
2. Strengthen the waste tire program	Work with the General Assembly's Solid Waste Task Force, external partners, and non-governmental organization (NGOs) to strengthen the tire program.

Tactic 3: Enhance and standardize safety protocols and procedures for HHW collection facilities. Consistent operating and safety guidance can help HHW collection facility operators safely handle problematic wastes, protect workers and the public, and support consistent operations statewide. To advance this tactic, TDEC will develop guidance for HHW collection facility operators addressing safe handling, storage, collection, operational procedures, and other applicable management practices.

Strategy 3: Support Market Development, Infrastructure, and Innovation

As products such as lithium batteries, solar panels, and wind turbine blades reach the end of their useful lives, Tennessee needs reliable reuse, recycling, processing, and end-market options to manage them. Established problematic waste streams, particularly waste tires, also require continued investment in processing capacity and beneficial end uses. Building markets, addressing infrastructure gaps, supporting research and innovation, and encouraging regional collaboration will help Tennessee prepare for both existing and emerging waste streams.

Tactic 1: Support the development of end markets for recycling and beneficial use of hard-to-manage wastes. Market development, infrastructure investment, research, and partnerships can reduce reliance on disposal while expanding practical and economically viable management options for existing and emerging waste streams. To advance this tactic, TDEC will advance the following action items:

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Action item	Description
1. Evaluate emerging waste streams	Continue to research and evaluate emerging waste streams and conduct a landscape analysis of expected volumes, existing management and market options, and private-sector capacity for reuse and recycling, including gaps and opportunities for beneficial use.
2. Advance recycling and reuse technologies	Partner with universities, laboratories, and private-sector innovators to advance scalable recycling, reprocessing, and reuse technologies.
3. Support regional collaboration and planning	Facilitate regional collaboration by connecting waste generators with potential end-users and assisting Regions and Districts with needs assessments and forecasting.
4. Promote shared infrastructure and cooperative purchasing	Support local governments by encouraging shared infrastructure where feasible, operational cost savings, joint procurement, and cooperative purchasing to reduce costs for specialized equipment and services.
5. Expand beneficial uses and markets for waste tires	Continue to use TEAP, subject to funding availability, to address processing and infrastructure gaps, support beneficial end uses for Tennessee waste tires, and advance research and technologies that expand the use of recovered tire wastes.

Tactic 2: Continue to support educational initiatives addressing problematic and emerging waste streams. Targeted education can improve understanding of proper management options, associated risks, and available programs as existing and emerging waste streams change over time. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Increase awareness of emerging waste stream management	Develop and deliver targeted outreach campaigns on proper disposal methods and the risks associated with improper management to address emerging waste stream issues.
2. Strengthen the school laboratory program	Strengthen the school laboratory program to assist schools with proper management and disposal of applicable wastes.

Best Management Practices

The following table highlights examples of BMPs that support safe collection and management, regulatory oversight, market development, beneficial use, and education for problematic and emerging waste streams and their relevance to the strategies established under Objective 5.

Table 5: Objective 5 BMPs

Case Studies	Descriptions	Relevance to Objective 5
HHW Collection Events Tennessee (State)	Since 1993, 383,000+ families have brought 25 million+ pounds to TDEC's one-day collections, funded by the $0.95-per-ton surcharge (TDEC 2026d). In Fall 2024, 2,718 households in 24 counties brought 168,354 pounds; participation rose 24.5% in repeat counties (TDEC 2025f).	**Strategy 1:** Convenient HHW collection provides safe disposal options and helps deter illegal dumping.

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Case Studies	Descriptions	Relevance to Objective 5
Regional Collection Centers Iowa (State)	State grants fund 28 main and 44 satellite centers serving 96 counties. In FY2024 they collected 7.4 million pounds; 81% was reused or recycled (Iowa Department of Natural Resources 2024b).	**Strategy 1:** Regional collection networks expand access to safe disposal and recovery of problematic wastes.
Local HHW Programs North Carolina (State)	In FY2024–25, 62 local governments collected HHW through 30 permanent sites and 60 temporary events (North Carolina Department of Environmental Quality 2024).	**Strategy 1:** Permanent sites and collection events expand convenient access to safe HHW disposal.
BOPAE and Used Oil Collection Tennessee (State)	Convenience centers accept BOPAE. A 2-cent fee per quart of oil funds more than 1,100 used oil sites (TDEC 2026g), and TDEC awarded 15 used oil grants in 2024 (TDEC 2024b).	**Strategy 1:** Extensive drop-off networks improve access to safe collection of BOPAE wastes.
Electronics Management Program North Carolina (State)	Manufacturer fees fund local collection, and TVs and computers are banned from landfills (North Carolina Department of Environmental Quality n.d.b). Local governments collected 7,790 tons in FY2024–25 (North Carolina Department of Environmental Quality 2024).	**Strategy 1:** Dedicated collection programs provide accessible alternatives to disposal for electronics.
Electronics and Used Oil Collection South Carolina (State)	Manufacturers recovered 13 million pounds of electronics (South Carolina Department of Environmental Services 2024); over 900 sites take oil from do-it-yourselfers (South Carolina Department of Environmental Services n.d.).	**Strategy 1:** Collection networks and manufacturer participation expand access to proper management of electronics and used oil.
Certified Electronics Recycling Durham, North Carolina (Local)	Free resident drop-off at the transfer station; the city's vendor is R2 certified (City of Durham, North Carolina n.d.).	**Strategy 1:** Convenient drop-off paired with certified recycling supports safe management of electronics.
Waste Tire Hauler Program Tennessee (State)	State law effective July 1, 2025, requires hauler registration and manifests (TCA §§ 68-211-1101 to -1105). Effective January 2027, haulers pay $100 per vehicle and post $10,000–$20,000 in financial assurance; registration is expected to open February 2027 (TDEC 2026e).	**Strategy 2:** Registration, manifests, and financial assurance strengthen oversight and help curb illegal tire dumping.
Scrap Tire Program Georgia (State)	In FY2025, Georgia issued 291 generator IDs and 24 hauler permits, made 1,821 site visits, and removed 330,930 tires from dumps (GA EPD 2025).	**Strategy 2:** Permitting, inspections, and cleanup activities strengthen waste tire oversight and enforcement.
HHW Facility Operating Guidance Minnesota (State)	The state sets operating procedures and training for HHW facilities (Minnesota Pollution Control Agency n.d.) and requires special packaging for damaged lithium batteries, which pose an extreme fire risk (Minnesota Pollution Control Agency 2023).	**Strategy 2:** Standardized operating and safety practices support safe management of HHW and lithium batteries.

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Case Studies	Descriptions	Relevance to Objective 5
TEAP Tennessee (State)	Since 2015, TEAP has awarded more than $12 million and supported diversion of nearly 9.5 million tires, approximately 107,000 tons, from landfills. Projects support tire recycling, tire-derived products, research, and beneficial uses (TDEC n.d.c).	**Strategy 3:** Targeted funding for infrastructure, research, and beneficial end uses strengthens markets for recovered tire wastes and reduces reliance on disposal.
Waste Tire Trust Fund Kentucky (State)	Free amnesty events rotate through all 120 counties, collecting 884,452 tires for $3.06 million in FY2025; the fund also paid for 57 rubber-modified asphalt road projects (Kentucky Energy and Environment Cabinet 2025)	**Strategy 3:** Dedicated funding supports tire recovery and beneficial use while diverting tires from disposal.
Mattress Recycling Williamson County, TN (Local)	Since 2024, three convenience centers recycle mattresses ($20 each), and mattresses are banned from regular trash (Williamson County Solid Waste Department 2024).	**Strategy 3:** Local recycling infrastructure provides an end-of-life management option that keeps mattresses out of landfills.
Recycling Infrastructure and Education Grants U.S. EPA (Federal)	SWIFR grants ($275 million, FY2022–26) fund recycling infrastructure (U.S. EPA 2026d); separate Consumer Recycling Education and Outreach grants total $75 million (U.S. EPA 2026e).	**Strategy 3:** Grant funding supports recycling infrastructure and education for hard-to-manage and emerging waste streams.



Photo 7: Waste tire recycling and beneficial reuse at Henry Horton State Park

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2.6 Objective 6: Disaster Debris Management

Strengthen Tennessee's preparedness for disaster debris management by improving planning, coordination, and infrastructure to enable efficient, compliant, and cost-effective response and recovery from natural and manmade disasters.

As Tennessee continues to enhance its emergency preparedness and resilience in the face of increasing disaster risks, effectively managing disaster debris is paramount. Integrating disaster debris management into emergency planning is necessary to protect public health and the environment, reduce costs, expedite recovery, and strengthen statewide resilience.

Background

Disaster debris management includes the organized removal, staging, processing, recycling or beneficial use, and disposal of wastes generated by disasters and emergencies. Depending on the event, debris may include C&D wastes, vegetative waste, soil and sediment, HHW, and other wastes.

The 2025 Plan included disaster debris management guidance and an example Disaster Debris Management Plan (DDMP). Since then, the increasing frequency and impacts of major disasters have reinforced the need for proactive planning. From 2010 through 2024, Tennessee was affected by 72 billion-dollar weather and climate disaster events, while the average frequency increased to approximately 7.8 events per year during 2020–2024.[14] Large debris volumes from these events can quickly overwhelm local communities and existing solid waste systems.

Recent disasters further demonstrate this challenge. Following Tropical Storm Helene, recovery efforts in East Tennessee involved management of more than 6.2 million cubic yards of debris and extensive coordination among local, state, and federal agencies.[15] Winter Storm Fern in January 2026 similarly required coordinated debris-clearing operations to restore access for utilities, emergency responders, and the public. These events demonstrate the importance of having debris management plans, trained personnel, appropriate sites, contracts, and coordination procedures in place before an emergency occurs.

Since the 2025 Plan, TDEC, TEMA, and other partners have worked to make disaster debris planning more accessible and actionable for local governments. Tennessee's 2017 Debris Management Planning Tool provides guidance for estimating debris volumes, identifying and mapping debris management sites, establishing collection and removal procedures, and addressing regulatory compliance, contracting, and interagency coordination.[16]

The following highlights summarize progress and key accomplishments made toward this objective:

[14] (National Centers for Environmental Information 2025)
[15] (Tennessee Emergency Management Authority n.d.)
[16] (TDEC 2026h)

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- Developed the statewide Disaster Debris Management Planning Tool and planning template aligned with state and federal requirements.
- Increased engagement and technical assistance with local governments on DDMP development and implementation.
- Integrated disaster debris tracking into reporting systems.
- Delivered trainings, presentations, and exercises with TEMA, FEMA, and local governments.



Photo 8: Tree damage from Winter Storm Fern in January 2026. Photo courtesy of TEMA

Tennessee law requires regional solid waste plans to include a plan for managing solid waste generated as a result of disasters or emergencies under TCA § 68-211-815(b)(16). Building on previous progress, TDEC will work with TEMA, Regions, local governments, and other partners to strengthen DDMPs, improve site readiness and training, promote regional coordination and sustainable debris management, and improve tracking of recovery outcomes.

Strategies, Tactics, and Action Items

To advance Objective 6, the 2035 Plan establishes three strategies, supported by tactics and action items, to strengthen disaster debris management in Tennessee.

Strategy 1: Integrate DDMPs into Solid Waste Management Planning

DDMPs are essential to ensuring that local governments can respond quickly, safely, and efficiently following a disaster or emergency. Tennessee law requires regional solid waste plans to address disaster debris management. TDEC will strengthen implementation of this

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requirement through consistent planning guidance, technical assistance, plan review, interagency coordination, training, and exercises.

Tactic 1: Establish consistent DDMP development guidelines and support local and regional planning. Consistent guidance and technical assistance can help Regions and local governments maintain actionable DDMPs that address state requirements, applicable federal guidance, and lessons learned from recent disasters. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Modernize the Debris Management Planning Tool and template	Modernize and enhance the Debris Management Planning Tool and template to reflect current requirements, best practices, technology, and lessons learned from recent disasters.
2. Support DDMP development and revision	Provide technical assistance and resources to help Regions and local governments develop and revise DDMPs that meet TCA § 68-211-815(b)(16) and consider applicable FEMA guidance.
3. Coordinate technical assistance with agency partners	Collaborate with TEMA, FEMA, and other relevant partners to provide technical assistance in areas of overlapping responsibilities and requirements.
4. Evaluate an interagency disaster debris working group	Evaluate the benefits of establishing an interagency disaster debris working group with agencies such as TEMA, TDH, TDOT, TWRA, and TDA to strengthen planning, coordination, and response.

Tactic 2: Establish a standardized process for reviewing and verifying DDMP compliance. A consistent review process will help ensure regional DDMPs address required planning elements and provide usable information for debris management, documentation, and recovery. To advance this tactic, TDEC will advance the following action items.

Action item	Description
1. Develop DDMP review protocols and procedures	Develop a review protocol and evaluation checklist for DDMPs submitted as part of regional solid waste plans, including standardized operating procedures for counties and Regions to document debris volumes, diversion, and disposal for FEMA reporting.
2. Train field office staff on DDMP requirements	Train assigned field office staff on DDMP requirements and review processes to support consistent implementation across the state.

Tactic 3: Collaborate with partners to provide tabletop exercises that evaluate DDMP effectiveness. Tabletop exercises allow local governments and agency partners to practice responsibilities, identify gaps, and incorporate lessons learned before a disaster occurs. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Develop a Disaster Debris Exercise Toolkit and conduct exercises	Work with TEMA and other partners to develop a disaster debris exercise toolkit and conduct joint tabletop exercises that incorporate DDMP components into broader emergency management scenarios.
2. Incorporate after-action evaluations	Partner with TEMA to incorporate lessons learned from exercises and disaster response into DDMP updates and operational reviews.

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Strategy 2: Support Local Government Identification and Preapproval of Temporary Debris Management Sites

Strengthening infrastructure and partnerships for rapid debris clearance, sorting, processing, and disposal is critical to effective response and recovery. Large debris volumes can quickly overwhelm existing infrastructure and delay recovery. Identifying suitable Temporary Debris Management Sites (TDMSs) before an event can improve site readiness, reduce response delays, and help ensure debris is managed in an organized and environmentally protective manner. Tennessee's existing disaster debris guidance similarly emphasizes identifying staging areas before disasters occur.

Tactic 1: Provide training and guidance to local governments on identifying and obtaining preapproval of TDMSs. Pre-identifying appropriate TDMSs can reduce delays and provide communities with designated locations to stage, separate, reduce, process, and transfer debris following an event. Site selection should consider accessibility, proximity to potential impact areas, environmental safeguards, zoning compatibility, available capacity, and operational feasibility. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Develop a TDMS preapproval portal	Develop a portal for local governments to request preapproval of potential TDMSs and upload supporting site documentation.
2. Support identification and submission of potential TDMSs	Work with local governments to identify and submit potential TDMSs for preapproval based on local risks, geographic coverage, anticipated debris needs, and operational considerations.
3. Develop TDMS site selection guidance	Develop guidance establishing clear criteria for identifying potential TDMSs, including environmental safeguards, zoning compatibility, accessibility, operational feasibility, and procedures for obtaining preapproval.

Tactic 2: Update online resources and training materials. Accessible, current resources can help local governments understand TDMS selection and preapproval requirements before an emergency occurs. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Update the state's disaster debris webpage	Update the state's disaster debris webpage to provide current guidance, tools, and best practices for identifying and seeking preapproval of TDMSs.
2. Develop an online TDMS training module	Develop an online training module providing step-by-step guidance for local governments on identifying, evaluating, and seeking preapproval of TDMSs.

Tactic 3: Provide regular regional virtual training opportunities. Regular training can maintain institutional knowledge and help local officials remain prepared as staff, requirements, technologies, and planning practices change. To advance this tactic, TDEC will host at least one virtual training session annually for each Grand Division to assist local governments with selecting, evaluating, and obtaining preapproval of TDMSs.

Strategy 3: Promote Sustainable Debris Management and Regional Recovery Efforts

Prioritizing recycling, reuse, and beneficial use of disaster debris can reduce impacts on landfill capacity while supporting recovery. Regional coordination can also help communities share processing capacity, equipment, staff, and expertise when debris

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volumes exceed local capabilities. TDEC will work with Regions and local governments to identify practical recovery options and strengthen coordination before disasters occur.

Tactic 1: Promote sustainable material recovery and opportunities for recycling and beneficial use of disaster debris. Separating and recovering appropriate debris can reduce disposal needs and create beneficial uses for materials such as vegetative debris and C&D materials. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Research disaster debris recycling and beneficial use options	Research options for recycling and beneficial use of disaster debris materials, such as vegetative debris mulching and C&D debris recycling.
2. Promote beneficial uses of disaster debris	Provide educational and technical resources to promote beneficial uses of processed debris, such as mulch, aggregate, or fuel, where appropriate.

Tactic 2: Support regional recovery efforts that promote collaboration among local governments. Regional coordination can expand access to processing infrastructure, equipment, staff, contractors, and other resources needed during major debris-generating events. Pre-event contracts and mutual aid arrangements can further improve readiness and reduce delays during recovery. Tennessee's existing disaster debris guidance encourages pre-event contracts and collaborative agreements before disasters occur. To advance this tactic, TDEC will advance the following action items.

Action item	Description
1. Identify regional recycling and processing facilities	Identify and map regional recycling and processing facilities that may support disaster debris management and update contact information annually to maintain readiness for future events.
2. Support debris processing capacity and recycling hubs	Research opportunities to support mobile debris processing capacity, such as grinders and sorters, and regional debris recycling hubs.
3. Promote regional collaboration and mutual aid agreements	Work with Regions and local governments to encourage protocols and mutual aid agreements for sharing equipment, staff, and expertise during disaster recovery.
4. Explore pre-event debris management contracts	Work with local governments to evaluate the benefits of establishing pre-event contracts with qualified debris management and recycling firms consistent with applicable FEMA requirements.

Tactic 3: Track and report disaster debris management and recovery outcomes. Consistent tracking can help Tennessee understand debris quantities, management methods, recovery costs, and lessons learned while providing better information for future planning. This work also supports the broader data and reporting improvements established under Objective 4. To advance this tactic, TDEC will advance the following action items.

Action item	Description
1. Maintain statewide disaster debris data	Consistent with Objective 4, maintain a database or dashboard of disaster events, debris volumes managed, material recovery and disposal, and recovery outcomes statewide.

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Action item	Description
2. Assess disaster debris management gaps	Conduct a statewide assessment of after-action reports by 2030 to identify recurring gaps, lessons learned, and opportunities to improve disaster debris management.

Best Management Practices

The following table highlights examples of BMPs that support proactive disaster debris planning, site readiness, coordinated response and recovery, training, and sustainable debris management and their relevance to the strategies established under Objective 6.

Table 6: Objective 6 BMPs

Case Studies	Descriptions	Relevance to Objective 6
Emergency Debris Disposal Guidance Alabama (State)	The ADEM gives local governments guidance on emergency disposal of debris from natural disasters (ADEM 2016b).	**Strategy 1:** Clear planning guidance improves preparedness and supports efficient, compliant disaster debris management.
County Debris Management Plan Kenton County, Kentucky (Local)	The county's debris management plan sets out pre-planning and debris removal coordination before a disaster occurs (Kenton County, Kentucky 2021).	**Strategy 1:** Pre-disaster planning improves coordination and supports faster debris removal and recovery.
Disaster Debris Planning Guide U.S. EPA (Federal)	U.S. EPA's guide lays out a four-step planning process that stresses pre-incident planning, drawing on U.S. case studies (U.S. EPA 2025e).	**Strategy 1:** Standardized planning guidance helps communities prepare for disaster debris management before an event occurs.
Preapproved Debris Sites North Carolina (State)	North Carolina maintains hundreds of preapproved debris sites that county officials can activate, shown on an interactive map (North Carolina Department of Environmental Quality n.d.b)	**Strategy 2:** Preapproved debris sites allow for a faster, compliant response following a disaster.
Permitted TDMS After Hurricanes Helene and Milton Florida (State)	A peer-reviewed survey of emergency managers found that counties with TDMS permitted by the Florida Department of Environmental Protection had fewer debris removal delays (Tilt and Rashid 2026)	**Strategy 2:** Pre-permitted debris sites can reduce debris removal delays and support faster recovery.
GIS Damage Assessment After Hurricane Helene South Carolina National Guard (State)	The Guard used ArcGIS mapping to assess damage and direct recovery work after Helene (ESRI 2026).	**Strategy 2:** GIS tools can help identify impacts and support coordinated debris management and recovery decisions.

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Case Studies	Descriptions	Relevance to Objective 6
Debris Training and Landowner Assistance North Carolina (State)	North Carolina runs debris management workshops for solid waste and emergency managers (North Carolina Department of Environmental Quality n.d.b). Its SMART program helps private landowners remove disaster debris (North Carolina Emergency Management 2026).	**Strategy 3:** Training and coordinated assistance build local capacity and support more effective disaster recovery.



Photo 9: Distribution of recovery supplies following Hurricane Helene, 2024

2.7 Objective 7: Expand and Focus Education and Outreach

Continue to improve education and outreach programs to encourage source reduction, recycling, and composting.

This objective is a direct continuation of Objective 6 from the 2025 Plan, "Expand and Focus Education and Outreach." Comprehensive education and outreach efforts are fundamental to increasing participation, changing behaviors, and building public understanding of the value and funding of solid waste management. By empowering Tennesseans with knowledge, the state supports greater program success and long-term sustainability.

Background

Education and outreach are essential components of an effective integrated solid waste management system. Effective programs help residents, businesses, and institutions understand how to reduce waste, recycle and compost properly, and use available solid waste services. Clear and consistent information can improve participation, reduce

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contamination and illegal dumping, and support implementation of local and statewide programs.

Education and outreach must also account for Tennessee's diverse communities and the millions of visitors who use the state's communities, parks, natural areas, and other destinations. Tourism can increase and shift waste generation in destination communities, while visitors may be unfamiliar with local recycling, disposal, and litter-prevention practices. Clear information about available services and proper waste management can help communities manage these impacts while supporting the natural and recreational resources that contribute to Tennessee's tourism economy. Additional information on tourism and other characteristics affecting solid waste planning is provided in **Attachment B, Supporting Planning Information and Technical Analyses.**

Long-term behavioral change requires consistent education and repeated engagement. Statewide messaging can establish common information and expectations, while schools, workplaces, community organizations, digital resources, and local and regional programs can reinforce these practices and tailor information to available services and community needs.

Under the 2025 Plan, TDEC emphasized long-term behavioral change through education and partnerships that brought sustainability concepts into classrooms and communities. These efforts complemented broader public outreach and professional development. The following highlights summarize progress and key accomplishments made under the 2025 Plan:

- Delivered professional training and certification courses for solid waste professionals.
- Expanded recycling education and outreach through statewide and locally implemented initiatives, including TDEC-supported education and outreach grants designed to inform residents what, where, and when they can recycle; TDEC continues to provide grant funding for education as part of its materials management programs.
- Expanded public education on waste reduction and organics management through initiatives including Get Food Smart TN and other outreach efforts; the broader Plan also identifies Get Food Smart TN as a major education and food-recovery initiative carried forward from the previous planning period.



Photo 10: TDEC staff providing educational outreach at MTSU, 2026

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- Partnered with educational organizations to develop sustainability curriculum and training and expanded outreach events, workshops, and stakeholder collaboration.
- Supported food recovery in higher education through grants and campus food pantry partnerships.

Building on this progress, TDEC will continue to improve public awareness and technical knowledge of waste reduction, recycling, composting, and other solid waste management programs under the 2035 Plan.

Strategies, Tactics, and Action Items

To advance Objective 7, the 2035 Plan establishes two strategies, supported by tactics and action items, to expand and focus education and outreach in Tennessee.

Strategy 1: Strengthen Educational Campaigns Statewide

Consistent statewide messaging helps residents and visitors understand how to reduce waste and what can be recycled, composted, or safely disposed of wherever they live or travel in Tennessee. Clear, coordinated messaging that can be adapted to local programs can reduce confusion and contamination, increase participation, and improve program effectiveness. This is consistent with the earlier recommendations developed for Objective 7 emphasizing simple "what goes where" guidance combined with locally tailored delivery.

Tactic 1: Launch a cohesive statewide public education campaign with clear, actionable "what goes where" messaging on recycling, composting, and waste reduction. A consistent statewide framework can provide recognizable messaging while allowing local governments and partners to tailor information to the services available in their communities. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Develop educational outreach materials	Develop and distribute branding toolkits, infographics, videos, translated resources, and other materials to raise awareness of recycling, composting, and waste reduction. Use multiple communication channels, including digital and social media and community events, to maximize program reach and participation.
2. Support recycling education and outreach grants	Subject to funding availability, offer grant opportunities for recycling education and outreach in accordance with TCA §§ 68-211-821(a) and (c), 68-211-824, and 68-211-825(a).
3. Measure public awareness and participation	Periodically measure public awareness and participation through feedback, surveys, audits, or other appropriate methods associated with outreach activities and events.

Tactic 2: Strengthen local and regional education networks and capabilities. Local and regional partnerships can extend the reach of statewide education efforts, tailor information to community needs, share effective practices, and strengthen the workforce needed to implement recycling and recovery programs. To advance this tactic, TDEC will advance the following action items:

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Action item	Description
1. Support locally led outreach and collaboration	Support locally led outreach by hosting regional workshops, sharing best practices, fostering collaboration, and offering technical assistance prioritized according to demonstrated community needs and capabilities.
2. Support recycling and recovery workforce development	Work with the General Assembly's Solid Waste Task Force to research and identify opportunities to support educational initiatives that build local and regional workforce development in the recycling and recovery sectors.

Strategy 2: Increase Access to Quality Recycling Educational Opportunities

Education is most effective when it reaches people where they learn, work, and live, including schools, campuses, workplaces, and rural communities with fewer resources. Expanding access to practical and accessible educational programs can build long-term knowledge and participation while preparing students, residents, and future professionals to support Tennessee's materials management goals.

Tactic 1: Partner with educational institutions, businesses, and community organizations to provide educational programming and information on source reduction, recycling, and composting. Partnerships with K-12 schools, universities, colleges, Tennessee Colleges of Applied Technology, businesses, and community organizations can integrate solid waste and sustainability education into existing learning environments and provide opportunities for hands-on participation. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Develop an online hub of educational resources	Develop an online hub of teacher tools and resources for educators to use in standards-aligned lesson plans and interactive student activities.
2. Recognize student and educator contributions	Partner with other organizations to honor and recognize students, teachers, and institutions supporting community source reduction, recycling, and composting initiatives.
3. Encourage university partnerships	Encourage university partnerships for service-learning, internships, and research.

Tactic 2: Provide educational opportunities and resources for rural and underserved areas. Targeted programs, virtual resources, and digital tools can expand access to recycling and waste-management education where staffing, funding, distance, or other constraints limit traditional outreach. To advance this tactic, TDEC will advance the following action items.

Action item	Description
1. Explore recycling education pilot programs	Research opportunities for recycling education and outreach pilot programs in underserved counties, such as mobile trailers, training, and science kits with recyclables and tools.
2. Expand virtual education and training resources	Host virtual town halls, webinars, and provide on-demand training videos and resources for broad accessibility.
3. Improve digital recycling tools and resources	Review and improve existing digital tools and mobile apps (e.g., Waste Wizard), online guides, and facility locators.

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Best Management Practices

The following table highlights examples of BMPs that support consistent messaging, behavior change, locally relevant outreach, educational partnerships, and expanded access to solid waste education and their relevance to the strategies established under Objective 7.

Table 7: Objective 7 BMPs

Case Studies	Descriptions	Relevance to Objective 7
Know It Before You Throw It Michigan (State)	A statewide campaign launched in 2019 with education ambassadors and grants. In a 2024 survey, three in four residents had changed how they recycle, and those who knew not to bag recyclables rose from 14% to 36%. The state recycling rate rose from about 14% to over 25%, aided by new infrastructure (Michigan Department of Environment, Great Lakes, and Energy 2025)	**Strategy 1:** Statewide education campaigns can improve recycling knowledge and participation through consistent messaging and measurable outreach.
Nobody Trashes Tennessee TDOT (State)	A litter campaign with Adopt-A-Highway, No Trash November, litter grants, and school resources (Nobody Trashes Tennessee n.d.). TDOT's 2022 study found 88.5 million pieces of roadside litter, 12% fewer than in 2016 (TDOT 2023)	**Strategy 1:** Coordinated statewide campaigns can expand public awareness through community programs, educational resources, grants, and multiple outreach channels.
Tennessee Litter Laws Keep Tennessee Beautiful (State)	A quick online reference to Tennessee's litter laws (Keep Tennessee Beautiful n.d.b).	**Strategy 1:** Clear, accessible educational resources help residents understand proper waste management practices and responsibilities.
Recycling and Waste Diversion Grants GA EPD (State)	State grants require measured results (FY2023). Norcross cut a 47% contamination rate by 20%; Forsyth County cut contamination from 41% to 18% and diverted 71 tons of plastic; Athens-Clarke collected 430 tons of compost (GA EPD 2022).	**Strategy 1:** Education and outreach grants can support locally tailored programs while using measurable results to evaluate effectiveness.
Keep Tennessee Beautiful App Keep Tennessee Beautiful (State)	A free app to reduce litter, recycle properly, and find cleanups and disposal sites (Keep Tennessee Beautiful n.d.a).	**Strategy 2:** Digital tools can expand access to recycling and waste education by providing convenient information on proper disposal and available services.
Sustainable Classrooms, Urban Green Lab Tennessee (Local)	Urban Green Lab provides free sustainability training for K-12 educators and youth-serving staff using standards-aligned, experiential curriculum. As of 2025, Urban Green Lab reported training 383 Metro Nashville Public Schools educators, and nearly 50% of MNPS schools had participated (Urban Green Lab n.d.).	**Strategy 2:** Standards-aligned educator training can integrate waste reduction and sustainability concepts into classrooms and build long-term environmental knowledge among students.

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Case Studies	Descriptions	Relevance to Objective 7
RecycleRight Cart Audits Greensboro, North Carolina (Local)	Staff audit and tag carts, mail photo postcards, and remove carts from repeat offenders. Contamination fell from 36.2% in 2021, to 25.5% in 2023 (Greensboro, North Carolina n.d.)	**Strategy 1:** Direct education and feedback can improve recycling behavior and reduce contamination while providing measurable information on program effectiveness.
Recycling Roundups Tennessee Environmental Council (State)	Free events and nine drop-off sites for tires, mattresses, electronics, scrap metal, and foam (Tennessee Environmental Council n.d.).	**Strategy 1:** Community-based outreach can connect residents with recycling opportunities while increasing awareness of proper management options for difficult-to-dispose wastes.
Recycling Education and Contamination Reduction Nashville, TN (Local)	Metro's app offers pickup days, a Waste Wizard item search, and facility locations (Metropolitan Government of Nashville and Davidson County 2026). With the app and other outreach, contamination fell from 46% (2020) to 28% about one year later (Waste Advantage Magazine 2021).	**Strategy 2:** Digital recycling tools and targeted outreach can improve access to disposal information and help reduce recycling contamination.
Free Composting Classes Dalton-Whitfield County, Georgia (Local)	Keep Dalton-Whitfield Beautiful taught home composting at the public library in 2022 (Oliver 2022).	**Strategy 2:** Community-based education can provide residents with practical knowledge and skills to support composting and waste reduction.
Environmental Education Fund Ohio (State)	Funded by half of Ohio EPA's air and water civil penalties. In FY2024, 26 grants reached 59,977 students and trained 3,181 educators (Ohio EPA 2024).	**Strategy 2:** Funding for environmental education can expand educational programming and provide educators with resources to reach students at scale.
School Environmental Education Programs Williamson County, TN (Local)	A Merit Program awards cash to schools for recycling and volunteer hours; Tree Wise and Environmental Reading reach kindergarten and first grade (Williamson County Solid Waste Department n.d.b).	**Strategy 2:** School-based education and recognition programs can engage students and educators in recycling and other waste reduction practices.
Three Grand Divisions Scholarship Keep Tennessee Beautiful (State)	Nine scholarships a year, three per Grand Division, for seniors committed to sustainability (Keep Tennessee Beautiful 2026); $1,250 each in 2026 (Waste Advantage 2026).	**Strategy 2:** Statewide recognition programs can encourage student involvement and leadership in recycling and sustainability initiatives.

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2.8 Objective 8: Develop Sustainable Funding Sources for MSW Management Programs

Encourage local governments to seek sustainable funding sources by providing guidance on application processes and establishing funding mechanisms to support MSW management programs. Ensure counties and private entities can meet financial responsibility for permitted facilities, including day-to-day operations, closure, and post-closure activities.

Objective 8 is directly related to Objective 8 of the 2025 Plan, "Develop Sustainable Funding Sources for Sustainable Materials Management." As diversion increases and traditional disposal-based funding models become less reliable, Tennessee must pursue sustainable and equitable funding strategies. Sustainable funding is essential for maintaining and expanding critical services, supporting infrastructure and innovation, and ensuring communities have access to effective waste management solutions.

Background

Tennessee's solid waste management system faces rising costs, aging infrastructure, and continued pressure on local funding sources. Many communities, particularly smaller and rural jurisdictions, have limited financial capacity to maintain services and invest in infrastructure. A stable and diversified funding structure is therefore important for maintaining essential services, expanding diversion programs, and supporting long-term financial sustainability. Additional information on Tennessee's funding and economic conditions, including local revenue sources and state, federal, nonprofit, and other funding mechanisms, is provided in **Attachment B, Supporting Planning Information and Technical Analyses**.

Financial assurance presents an additional long-term consideration because landfill obligations continue after active disposal ends. Federal requirements generally require post-closure care (PCC) for municipal solid waste landfills for 30 years, including maintenance, groundwater monitoring, and leachate and gas management. Strong financial planning and assurance are therefore important for protecting public health and the environment while reducing the risk that future liabilities become an unexpected burden on local governments and taxpayers.

Tennessee is also strengthening long-term regional financial planning. Statutory changes effective in 2026 revised requirements for regional solid waste plan review, with final regional plans due to TDEC by July 1, 2028, and subsequent updates required every 10 years. Related amendments to Rule 0400-11-01-.09 are intended to strengthen requirements for full-cost accounting, revenue-to-cost comparison, and reporting of public costs and funding changes. These requirements will help Regions better understand the full cost of their solid waste systems and evaluate whether available revenues are sufficient to support long-term implementation.

For publicly owned landfills, Tennessee law allows certain local governments to use contracts of obligation, commonly referred to as Contracts in Lieu of Bonds (CILBs), as an

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alternative financial assurance mechanism. CILBs do not eliminate financial assurance requirements; instead, the local government assumes responsibility for ensuring that applicable operating, closure, PCC, and corrective-action obligations can be met. As a result, these agreements can create long-term financial exposure for local governments if sufficient resources are not available when obligations occur.

To better understand this potential exposure, TDEC evaluated financial liabilities associated with operating publicly owned Class I landfills using December 2025 facility and financial information. The analysis identified approximately $293 million in modeled obligations. After accounting for counties with established liability accounts, the modeled exposure decreased to approximately $214 million. Considering positive solid waste fund balances reduced the potential exposure to approximately $182 million, and excluding liabilities contractually assigned to private operators reduced it further to approximately $91 million. Jurisdictions without identified liability accounts or positive fund balances generally maintained strong credit ratings, indicating additional potential financial capacity. These results illustrate how available reserves, contractual arrangements, and overall financial capacity affect potential public exposure and reinforce the importance of routinely evaluating financial assurance and long-term liabilities. Additional information on the methodology, assumptions, boundaries, and results of this financial analysis is provided in **Attachment B, Supporting Planning Information and Technical Analyses, Section B.4, Funding and Contract Mechanisms for Local Governments**.

Under the 2025 Plan, TDEC initiated efforts to better understand funding trends and improve long-term financial resilience. The following highlights summarize progress and key accomplishments made toward this objective:

- Established internal working groups to evaluate program funding and long-term sustainability.
- Tracked local government program costs and revenue trends.
- Modernized grant systems and streamlined application processes.
- Provided technical assistance and stakeholder engagement on funding strategies and market conditions.

Building on this progress, TDEC will continue to strengthen financial assurance, regional financial planning, cost transparency, and access to sustainable funding under the 2035 Plan.



Photo 11: Landfill maintenance activities conducted during the post-closure care period

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Strategies, Tactics, and Action Items

To advance Objective 8, the 2035 Plan establishes two strategies, supported by tactics and action items, to develop sustainable funding sources and strengthen long-term financial responsibility for MSW management programs in Tennessee.

Strategy 1: Ensure Financial Responsibility for Facility Operations, Closure, and Long-Term Liability

Ensuring sufficient financial assurance is critical to managing Tennessee's solid waste facilities and their long-term obligations. TDEC will continue to work with the Tennessee Comptroller of the Treasury and Department of Finance and Administration to promote financially responsible practices and ensure that facility operations, closure, PCC, corrective action, and other applicable liabilities are appropriately addressed.

Tactic 1: Require owners of permitted facilities to maintain sufficient financial assurance. Financial assurance provides resources to address applicable facility obligations throughout operations, closure, and PCC and helps reduce long-term financial risk to local governments and the State. To advance this tactic, TDEC will advance the following action items.

Action item	Description
1. Support consistent facility liability and financial assurance evaluations	Continue to collaborate with the Tennessee Comptroller of the Treasury and the Department of Finance and Administration to assist in consistent evaluations of facility liability and financial assurance for locally owned solid waste facilities.
2. Ensure sufficient financial assurance mechanisms	Continue to ensure sufficient financial assurance mechanisms are in place and evaluate audit compliance requirements.
3. Develop SOPs for contracts of obligation	Develop SOPs for contracts of obligation to ensure municipalities and counties have sufficient funds to cover liabilities.
4. Evaluate financial assurance drivers and challenges	Research and evaluate the drivers and challenges associated with financial assurance to aid long-term planning.
5. Reevaluate financial assurance cost estimates	While Rule 0400-11-01-.03(2)(c) requires closure and PCC plans for Class I and Class II facilities to be resubmitted for review every ten years, continue to strive toward reevaluating financial assurance cost estimates on a five-year basis for all facility types.
6. Study funding gaps and sustainable funding structures	Consult with partners, including the General Assembly's Solid Waste Task Force, to study gaps in funding and opportunities to support sustainable funding structures.

Tactic 2: Provide training, templates, and resources for managing financial assurance instruments. Clear guidance and technical assistance can help local governments understand financial assurance requirements, accurately account for long-term liabilities, and evaluate appropriate mechanisms for meeting those obligations. To advance this tactic, TDEC will advance the following action items:

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Action item	Description
1. Provide financial assurance technical assistance	Continue to offer technical assistance for financial assurance mechanisms, liability account management, and long-term financial planning.
2. Encourage accurate accounting of facility liabilities	Encourage local governments to accurately account for solid waste facility liabilities within their funding structures and provide alternative financial assurance mechanisms when liability funding is not available.
3. Expand education and outreach on MSW funding needs	Work with the General Assembly's Solid Waste Task Force to expand and improve education and outreach to increase public awareness and understanding of MSW funding needs, the value of services, and the importance of long-term financial planning for proper closure and PCC of solid waste facilities.

Strategy 2: Strengthen Local Financial Planning and Cost Transparency

TDEC will continue to strengthen local financial planning by promoting financial management fundamentals, encouraging cost transparency, and providing resources and technical assistance to Regions and local governments. To directly support Regions, TDEC will offer a Solid Waste Planning and Technical Assistance Grant as authorized by TCA § 68-211-823 to assist with development of 10-year regional solid waste management plans.

TDEC Economic Modeling Tool

To support statewide and regional solid waste planning, TDEC developed an Economic Modeling Tool to provide Regions with a consistent, transparent framework for estimating the costs associated with managing MSW. The tool focuses primarily on public-sector solid waste activities and reflects differences in system configuration and operating conditions across Tennessee.

The Economic Modeling Tool is structured around four primary components of the solid waste system: waste collection, hauling and transfer, diversion processing, and disposal. Waste collection includes curbside service and convenience centers; hauling and transfer includes movement of wastes and transfer station operations; diversion processing includes MRF and composting operations; and disposal includes landfill operations. The tool also accounts for program management activities that support planning, administration, and oversight.

Standardized cost ranges were developed for these system components to provide a consistent basis for comparing potential costs. The tool incorporates differences in collection costs among urban, suburban, and rural areas; facility size and associated economies of scale; regional differences in disposal costs; population and projected growth; and cost escalation factors. These assumptions allow the tool to reflect differences among Tennessee's Grand Divisions and local solid waste systems while maintaining a consistent statewide modeling framework.

Using an interactive input-output framework, Regions can select system characteristics, including collection methods, transfer approaches, and processing pathways. The tool applies standardized cost inputs and forecast factors to estimate current-year costs and develop a 10-year cost projection, allowing users to compare how different system

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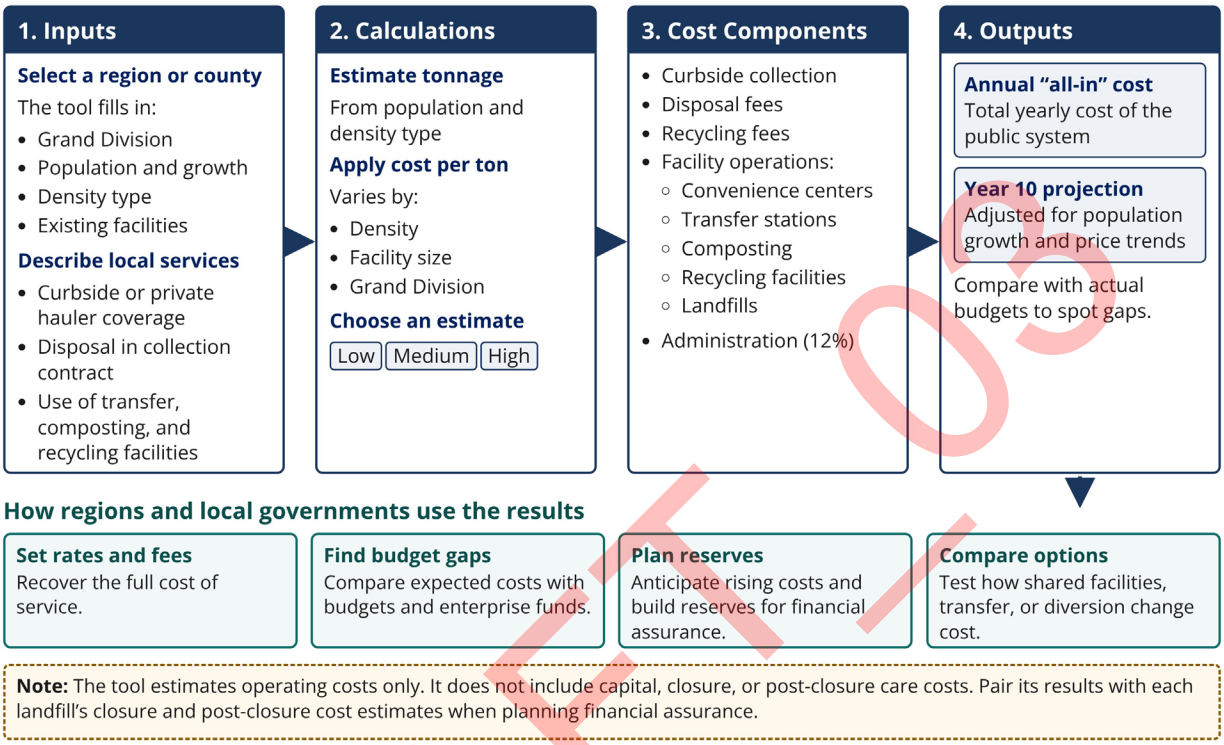
configurations and local conditions may affect anticipated solid waste management costs. The general input-output framework of the Economic Modeling Tool is illustrated in **Figure 1**.

Figure 1: Conceptual Framework for the TDEC Economic Modeling Tool



The Economic Modeling Tool is not intended to replace local budgeting efforts or precisely predict all-in system costs. Rather, it provides a planning-level tool for comparing the potential cost implications of different solid waste system configurations and planning scenarios. TDEC will provide training and technical assistance to Regions and local governments interested in using the tool.

Tactic 1: Publish a comprehensive Solid Waste Funding Toolkit for municipalities and counties. The toolkit will provide guidance and resources to help local governments understand solid waste costs, evaluate revenue and rate-setting options, use financial modeling tools, and make informed decisions about funding collection, disposal, diversion, infrastructure, and other services. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Provide training on the TDEC Economic Modeling Tool	As part of the comprehensive toolkit, introduce and provide municipal and county training on the TDEC Economic Modeling Tool by the first quarter of 2027. Record and publish the training as a publicly available online resource.
2. Explore partnerships for training opportunities	Explore partnerships with CTAS and MTAS to support training options.
3. Provide financial planning and modeling assistance	Continue to provide technical assistance and regular training for forecasting, capital planning, and rate modeling.

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Tactic 2: Promote public cost transparency and cooperative partnerships. Understanding and communicating the costs associated with solid waste management can build public trust and support sustainable financial decisions. Cooperative approaches can also help communities share fixed costs, reduce administrative burdens, and improve the affordability of services. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Encourage transparent solid waste cost reporting	Continue to encourage local governments to clearly separate and report solid waste costs in their budgets to build public trust and justify sustainable funding mechanisms.
2. Promote cost-sharing and cooperative purchasing	Continue to promote cost-sharing and cooperative purchasing to reduce administrative costs, especially for small and rural jurisdictions.
3. Support regionalized service delivery and PPPs	Continue to encourage regionalized service delivery models to improve affordability and resilience. Publish model PPP contracts and guidance to support waste management infrastructure and service delivery.

Tactic 3: Expand access to funding sources. Improved information, grant-writing support, and technical assistance can help communities identify and compete for state, federal, and other funding opportunities, particularly where limited staff capacity creates barriers to accessing available resources. To advance this tactic, TDEC will advance the following action items:

Action item	Description
1. Evaluate recycling grant programs	Review and evaluate the balance between recycling grants and recycling equipment support grants to optimize programming, improve infrastructure development, system integration, and performance through increased recycling and diversion rates.
2. Provide grant writing workshops and technical support	Provide grant writing workshops and technical support to local governments, prioritizing rural, distressed, and high-need communities.
3. Explore a waste management funding database	Explore options for local governments to develop and maintain a regularly updated, searchable database of state and federal waste management funding opportunities.

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Best Management Practices

The following table highlights examples of BMPs that support financial responsibility, transparent cost accounting, sustainable funding, regional cost-sharing, and long-term financial planning and their relevance to the strategies established under Objective 8.

Table 8: Objective 8 BMPs

Case Studies	Descriptions	Relevance to Objective 8
Full-Cost and Uniform Accounting TN (Statewide)	Public landfills and incinerators must use an enterprise fund, and state funds require GAAP accounting (TCA § 68-211-874), using the uniform system developed by the Comptroller (MTAS 2026). TDEC is amending Rule 0400-11-01-.09 to include requirements for full-cost accounting, revenue-to-cost comparison, and annual reporting of public costs and funding changes (Rule 0400-11-01-.09).	**Strategy 2:** Full-cost accounting improves cost transparency and supports sustainable financial planning.
Economic Modeling Tool TDEC (Statewide)	The tool estimates a region's annual "all-in" operating cost and a Year 10 projection, supporting budgets and capital and reserve planning.	**Strategy 2:** Cost modeling helps communities identify funding gaps and plan for future costs.
Diversified Grant Funding TN and Federal	TDEC awarded about $7 million across 84 solid waste grants in 2024 (TDEC 2024b), and U.S. EPA's SWIFR grants fund recycling infrastructure (U.S. EPA 2026d).	**Strategy 2:** State and federal grants expand funding for solid waste infrastructure and programs.
Pay-As-You-Throw Rates Gainesville, Florida, Bloomington, Minnesota (Local)	Gainesville offers variable rates based on garbage container size reduced solid waste by 18% and saved $7.95 per home (U.S. EPA 2016). Bloomington adopted cart tiers in 2016 and will raise Pay-As-You-Throw rates in 2026 which is projected to increase diversion from 40% to 55% (City of Bloomington, Minnesota n.d.)	**Strategy 2:** Rates that recover service costs can reduce reliance on general funds while encouraging diversion.
Fee-Funded Recycling Cartersville, Georgia (Local)	The city raised refuse collection fees by $2 per month to fund residential recycling collection (Smart Cities Dive 2012).	**Strategy 2:** Dedicated service fees provide a sustainable funding source for recycling programs.
Residential Coverage Cap Franklin County, TN (Local)	The county limits residential waste coverage to what cities pay for, and cities cover any excess, encouraging alternatives to disposal (Franklin County, Tennessee n.d.)	**Strategy 2:** Defined service costs clarify funding responsibilities and encourage alternatives to disposal.
Regional Recycling Hubs Chester and Sullivan Counties, TN (Regional)	The West Tennessee Regional Recycling Hub serves multiple counties with over $7 million in grant-funded infrastructure (Chester County Solid Waste Department n.d.). Sullivan County's $3.5 million MRF serves surrounding communities, including Unicoi County (Waste Advantage Magazine 2025).	**Strategy 2:** Shared facilities spread fixed costs and improve the affordability of regional recycling services.

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3. TENNESSEE'S SOLID WASTE MANAGEMENT SYSTEM

Understanding Tennessee's current solid waste management system is key to developing an effective statewide plan. This assessment establishes the planning context by examining how the system is structured, how conditions and needs vary across the state, and how effectively existing services and infrastructure are supporting Tennessee's solid waste management goals. Because many solid waste management needs, services, and infrastructure extend beyond individual county boundaries, the assessment also considers opportunities for regionalization and multi-county coordination to improve system efficiency, capacity, and resilience. It also identifies conditions that may affect future system performance and opportunities to strengthen diversion, infrastructure, funding, and planning. These findings provide the foundation for the objectives, strategies, and actions presented in the 2035 Plan.

3.1 Policy and Regulatory Framework

Tennessee's solid waste management system operates within a framework of federal and state laws and regulations governing solid waste planning, facility permitting and operation, environmental protection, waste reduction and diversion, funding, reporting, and compliance. At the federal level, the Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Clean Air Act (CAA), and Clean Water Act (CWA) establish requirements applicable to various aspects of solid waste management, including non-hazardous waste disposal, contaminated sites, air emissions, and water quality protection.

At the state level, the Tennessee Solid Waste Disposal Act and Solid Waste Management Act of 1991, together with TDEC Rule Chapter 0400-11-01, provide the primary statutory and regulatory foundation for Tennessee's solid waste management system. These authorities establish requirements for solid waste facility siting, permitting, operation, and closure; statewide and regional planning; waste reduction and diversion; funding; reporting; and compliance and enforcement. The framework also includes requirements and programs addressing recycling and problematic or hard-to-manage wastes, including HHW, waste tires, used oil, batteries, paint, antifreeze, and electronics.

Collectively, these federal and state requirements provide the regulatory foundation for implementation of the 2035 Plan and development of regional solid waste plans consistent with statewide requirements and priorities. Additional information on applicable federal and state statutes and regulations, facility requirements, waste reduction and materials management programs, funding provisions, and compliance requirements is provided in **Attachment B, Section 1.1, Policy and Regulatory Framework**.

3.2 Roles and Responsibilities for Implementation

Implementation of the 2035 Plan is a shared responsibility among TDEC, the Underground Storage Tanks and Solid Waste Disposal Control Board (UST-SWDCB), Districts, Regions, counties and municipalities, solid waste authorities, and other public and private

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stakeholders. Tennessee law establishes distinct responsibilities for these entities related to statewide and regional planning, regulatory oversight, implementation, technical assistance, reporting, and compliance.

TDEC provides statewide planning and regulatory oversight, administers solid waste programs and funding, reviews regional solid waste plans, and regulates solid waste facilities. Districts provide regional planning support and technical assistance, while Regions are responsible for preparing and maintaining regional solid waste plans consistent with statewide requirements and priorities. Counties and municipalities support implementation through local collection, recycling, disposal, infrastructure, reporting, and participation in regional planning. Private industry, NGOs, academic institutions, and citizens also contribute through service delivery, infrastructure and market development, education, research, waste reduction, recycling, and related wastes management activities.

The summary table below (**Table 9**) provides an overview of the roles and statutory responsibilities of these entities, with additional information on regional and local planning requirements, reporting authority, and compliance and enforcement provisions provided in **Attachment B, Section 1.2, Implementation Responsibilities**.

Table 9: Roles, Overview of Responsibilities, and Authorities for Plan Implementation

Role	Description & Key Responsibilities	Authority
TDEC *Lead Agency (State)*	Develops and oversees the statewide plan, regulates solid waste facilities, provides statewide guidance and technical assistance, administers grants, and oversees compliance. Reviews and approves or disapproves regional plans to ensure consistency with state requirements. • Develop and maintain the statewide plan and provide guidance, oversight, and technical assistance • Administer grants and establish waste reduction goals • Review and approve or disapprove regional plans within 90 days • Regulate siting, permitting, operation, and closure of solid waste facilities • Monitor compliance through permitting, inspections, reporting, plan review, and other applicable mechanisms • Apply graduated sanctions for regional noncompliance, including warning and technical assistance, loss of SWMF eligibility after 30 days, and civil penalties of up to $5,000 per day after 60 days • Assess other civil penalties and undertake enforcement actions as authorized by law	TCA § 68-211-801 et seq. TCA §§ 68-211-814 to -817 TCA §§ 68-211-608, -866(a), and -867(d) TCA § 68-211-861 Rule Chapter 0400-11-01
UST-SWDCB *State Board*	Provides rulemaking and administrative review within the State's solid waste regulatory framework, distinct from TDEC's day-to-day administration and enforcement. • Exercise rulemaking responsibilities assigned to the Board under Tennessee solid waste laws • Establish or approve regulatory requirements or methodologies where authorized by statute • Hear certain administrative appeals of permitting, enforcement, and other decisions of the Commissioner	TCA § 68-211-111 TCA § 68-211-117

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Role	Description & Key Responsibilities	Authority
Regions *Regional*	Plan for solid waste management across one or more counties and coordinate implementation consistent with the statewide plan. • Prepare and maintain regional solid waste plans and submit APRs addressing the next 10 years • Address required planning elements, including system and capacity analysis, costs and revenues, recycling, HHW, education, waste reduction, disaster debris, implementation, and regional alternatives • Adopt required uniform financial accounting and reporting requirements • Work toward the State's 25% waste reduction and diversion goal • Require regulated solid waste and recycling entities to provide information needed for reporting and seek a mandatory injunction when necessary	TCA §§ 68-211-813 to -815 TCA § 68-211-861 TCA 68-211-871 TCA § 68-211-874
Districts *Regional Planning & Technical Assistance*	Support coordinated regional planning and assist local governments and Regions with solid waste planning, programs, resources, and intergovernmental coordination. • Provide technical and planning assistance to counties, municipalities, and Regions • Support solid waste planning, reporting, recycling, waste reduction, and related activities • Facilitate coordination and cooperative approaches among jurisdictions • Connect local governments and Regions with TDEC programs, technical resources, funding opportunities, and other assistance	TCA §§ 13-14-102 to -103 TCA § 68-211-603(g) TCA § 68-211-811
Counties & Municipalities *Local*	Deliver and support solid waste collection, recycling, and disposal services and infrastructure within their jurisdictions and participate in regional implementation. • Operate or support collection, recycling, and disposal programs and infrastructure, with county systems complementing and supplementing municipal systems • Ensure availability of at least one recyclable material collection site per county • Prepare and annually update county solid waste collection plans • Participate in regional planning and provide information needed for APRs and other reporting	TCA § 68-211-851 TCA § 68-211-863 TCA § 68-211-871
CTAS & MTAS *University Technical Assistance*	Provide technical assistance to counties and, as applicable, municipalities in support of local solid waste planning and implementation. • Provide technical assistance for preparing, updating, and implementing local solid waste plans	TCA § 68-211-822
Private Industry *Supporting Stakeholder*	Provides much of the collection, transportation, disposal, processing, recycling, and materials recovery capacity used by Tennessee's solid waste system. • Own and operate solid waste, recycling, processing, and materials recovery facilities • Provide collection, transportation, and disposal services • Advance recovery and diversion technologies and support markets for recovered materials	Applicable permits and requirements, including Rule Chapter 0400-11-01

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Role	Description & Key Responsibilities	Authority
Academic Institutions *Supporting Stakeholder*	Support implementation through research, data analysis, technical assistance, education, and institutional waste reduction and recycling programs. • Provide research, data analysis, education, and technical support • Institutions governed by the Tennessee Board of Regents or University of Tennessee Board of Trustees develop annual source reduction, recycling, and waste management plans consistent with the statewide plan	TCA § 49-7-121
NGOs & Citizens *Supporting Stakeholder*	Support community implementation, participation, education, outreach, and long-term waste reduction and recycling behavior. • NGOs provide education, outreach, technical assistance, and community-based programs • Citizens participate in collection, recycling, reuse, and waste reduction programs and local planning and decision-making	N/A

3.3 Regional and Local Organization

Tennessee's solid waste planning system is organized across several geographic and governmental levels. The State is divided into three Grand Divisions and includes 95 counties and over 340 incorporated municipalities. These counties are further organized within nine Districts. Each county also constitutes or participates in one of Tennessee's 70 single- or multi-county solid waste Regions, which provide the organizational structure for regional solid waste planning. **Figure 2** and **Figure 3** illustrate these geographic and solid waste planning structures.

The Grand Divisions of East, Middle, and West provide a longstanding geographic framework for organizing the State (TCA § 4-1-201 to § 4-1-204). Within this framework, the State's Districts provide regional planning support and technical assistance to local governments and Regions, including preparation of five-year solid waste needs assessments that identify infrastructure needs, market opportunities, and regional priorities.

Tennessee's 70 Regions, both single- and multi-county, provide the primary structure for regional solid waste planning and implementation. Each Region prepares and maintains a 10-year solid waste plan that addresses its existing and anticipated conditions and is consistent with the statewide plan. Regional implementation and progress are reported annually through the APR process. TDEC's **Appendix 2: Solid Waste Regional Plan Guidance Document** provides additional guidance for the preparation, organization, and content of the regional 10-year solid waste plans.

Although most Regions are currently single-county Regions, many solid waste management needs extend beyond county boundaries. Disposal facilities, transfer infrastructure, recycling and processing facilities, end markets, transportation systems, and disaster debris management may serve multiple jurisdictions or require coordination across Regions.

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Figure 2: Tennessee Grand Divisions and Development Districts

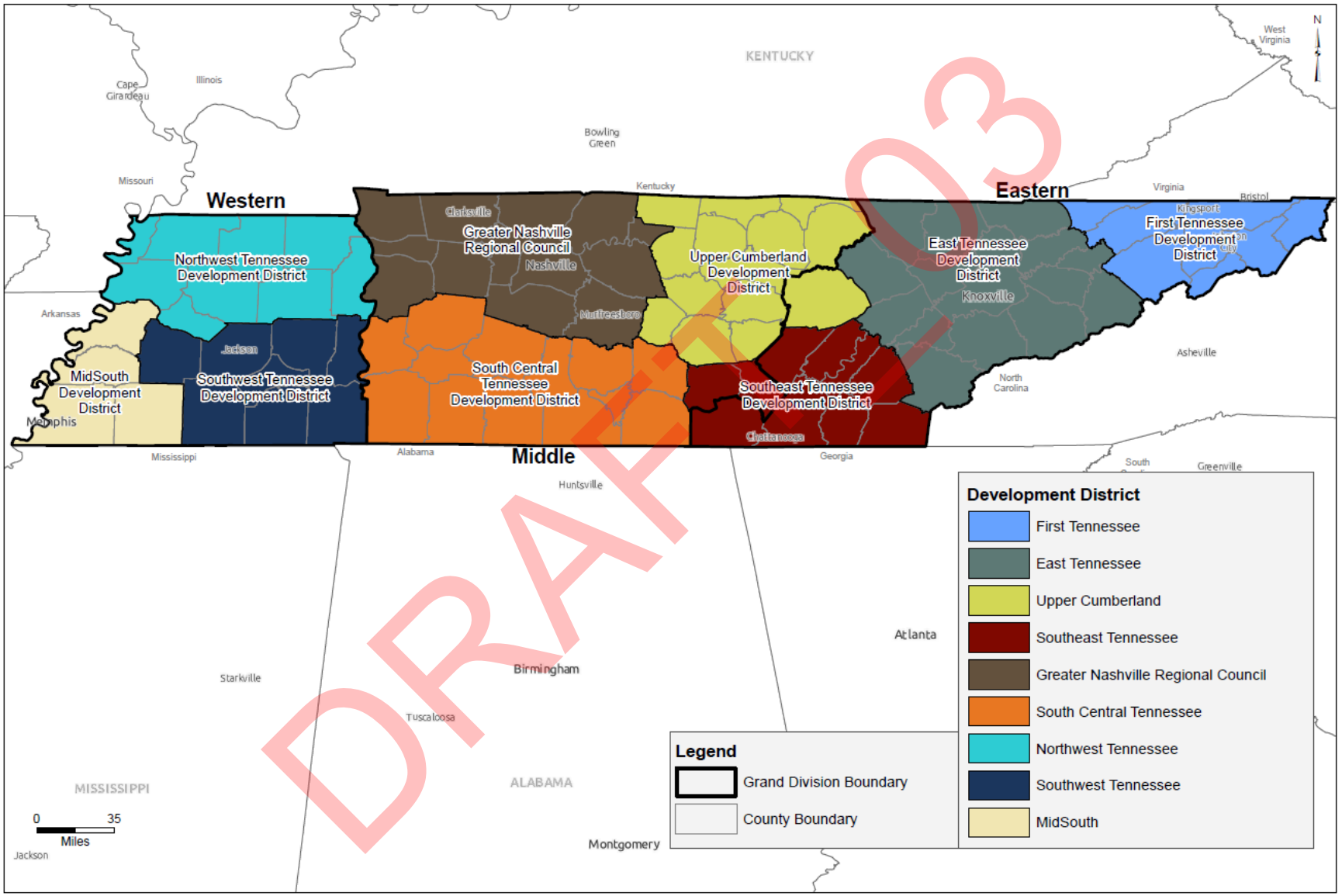

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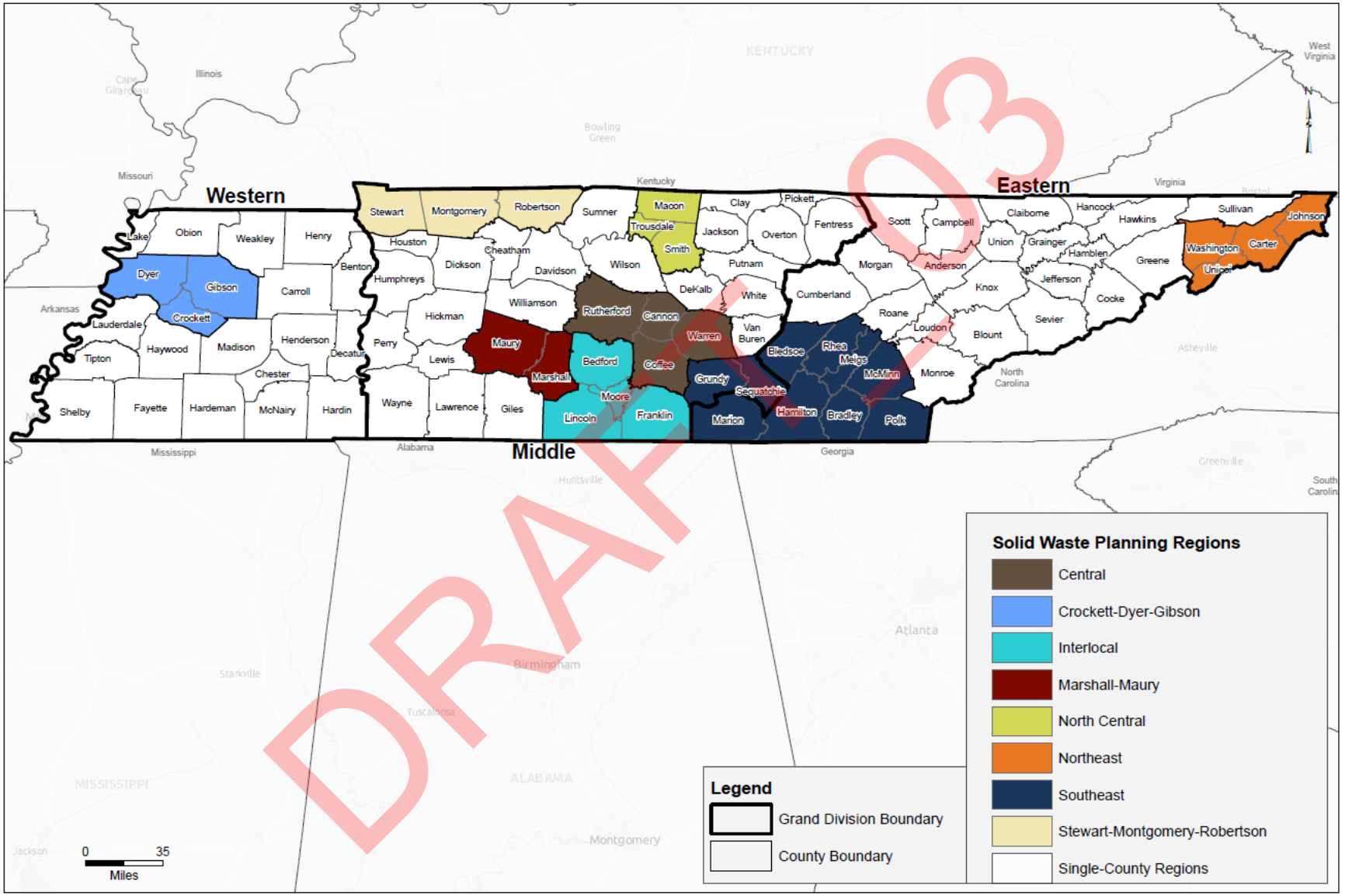
Figure 3: Tennessee Solid Waste Planning Regions



Consistent with the State's preference for regionalization through multi-county Regions, the 2035 Plan encourages the formation and use of multi-county planning structures where feasible. Regions should evaluate opportunities for multi-county coordination where shared planning, services, infrastructure, or investments could improve long-term capacity, cost-effectiveness, and system resilience.

Together, this planning framework connects statewide priorities with regional needs and local implementation, providing a coordinated structure for advancing the objectives of the 2035 Plan.

3.4 Population and Growth Trends

Understanding where Tennessee's population is concentrated and how it is expected to change provides an important foundation for solid waste planning. Population growth and density directly influence waste generation, service needs, and infrastructure demands across the State.

Tennessee's population has grown steadily over the past decade and is projected to continue expanding through the 2035 planning period (**Table 10**). From 2015 to 2025, the state's population increased by nearly 10%, rising from approximately 6.59 million to 7.24 million.[17] By 2035, it is expected to increase by an additional 7% to reach 7.74 million.[18]

This growth, however, is unevenly distributed across the State's three Grand Divisions. Middle Tennessee, the State's largest Grand Division, is projected to grow by 33% between 2015 and 2035. East Tennessee is expected to grow by 17%, while West Tennessee is projected to decline by nearly 4% over the same period.

Table 10: Projected Population Growth (2015–2035)

Region of Interest	2015	2020	2025*	2030*	2035*	Avg Annual Growth Rate	Tot Growth Rate
East	2,384,690	2,477,169	2,589,177	2,662,599	2,709,720	0.7%	13.6%
Middle	2,641,824	2,893,203	3,112,067	3,325,500	3,522,997	1.7%	33.4%
West	1,564,656	1,557,532	1,541,489	1,525,658	1,506,191	-0.2%	-3.7%
Statewide	**6,591,170**	**6,927,904**	**7,242,733**	**7,513,757**	**7,738,908**	**0.9%**	**17.4%**

Notes:

1. "*" Indicates the population or growth rate is estimated or projected.

Population density, or the number of people living per unit of land area, also varies across Tennessee's Grand Divisions. East and Middle Tennessee show steady growth and rising density, while West Tennessee remains flat or slightly declining (**Table 11**).

Table 11: Projected Population Density Growth (2015–2035)

Region of Interest	2015	2020	2025*	2030*	2035*	Avg Annual Growth Rate	Tot Growth Rate
East	7,837	8,061	8,337	8,516	8,626	0.5%	10.1%

[17] (U.S. Census Bureau 2025)

[18] (Tennessee State Data Center 2024)

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Region of Interest	2015	2020	2025*	2030*	2035*	Avg Annual Growth Rate	Tot Growth Rate
Middle	7,453	7,959	8,387	8,795	9,168	1.2%	23.0%
West	2,483	2,467	2,444	2,418	2,385	-0.2%	-3.9%
Statewide	**15,757**	**18,487**	**19,168**	**19,728**	**20,180**	**0.7%**	**13.5%**

Notes:

1. "*" Indicates the population or growth rate is estimated or projected.

For the 2035 Plan, and as illustrated in **Figure 4**, Tennessee counties have been classified by population as urban (>115,000), suburban (35,000 to 115,000), or rural (<35,000), based on adapted U.S. Census Bureau definitions.[19]

Urban counties hold 56% of the population in relatively few, dense areas that support efficient services but generate high waste volumes. Suburban counties represent 30% of residents and face growth-related infrastructure challenges, while rural counties serve 14% of the population across more than half the state, where low density drives higher collection costs and limits centralized options.

These divergent population trends, combined with growth concentrated in a relatively small number of urban and suburban counties, directly affect solid waste management planning. Growing areas may face increased pressure on collection systems, disposal capacity, and funding, while stagnant or declining areas may experience underused infrastructure and higher per capita service costs.

3.5 Statewide Waste Generation and Composition

Understanding how much waste Tennessee generates and its composition is essential for evaluating infrastructure needs and identifying diversion opportunities. In 2023, Tennessee generated approximately 18 million tons of MSW from residential and ICI sources.[20] About 52% of this waste was landfilled, while the rest was managed through recycling, composting, or beneficial reuse. Generation rates vary across Regions, with lower rates often reported in rural areas due to limited data or underreporting.

On a per capita basis, Tennessee's average disposal rate was approximately 6.5 lbs. per person per day, well above the national average of 4.9 lbs.[21] Rates vary widely by region, influenced by population, land use, economic activity, tourism, and reporting practices.

Tennessee's statewide waste characterization study, included as **Appendix 3: TDEC Waste Characterization Study**, provides the most current baseline for understanding the composition of disposed MSW. The study indicates that approximately 70-75% of Tennessee's currently landfilled waste consists of potentially recyclable or compostable materials, highlighting a significant opportunity to increase diversion and recover valuable resources through targeted programs and infrastructure investments (**Figure 5**).

[19] (U.S. Census Bureau 2012)
[20] (TDEC 2024a)
[21] (EPA 2023)

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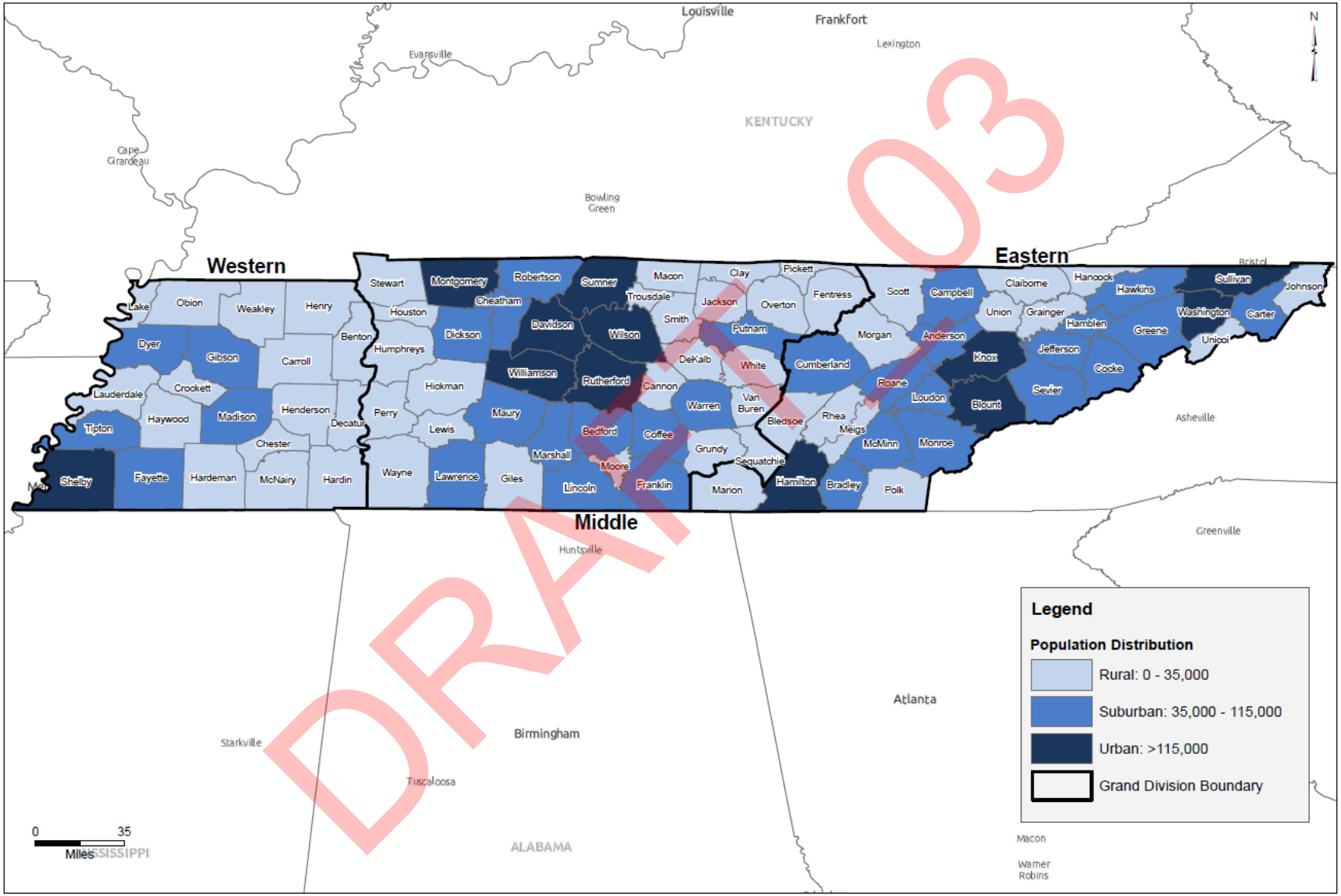
Figure 4: Distribution of County Classifications



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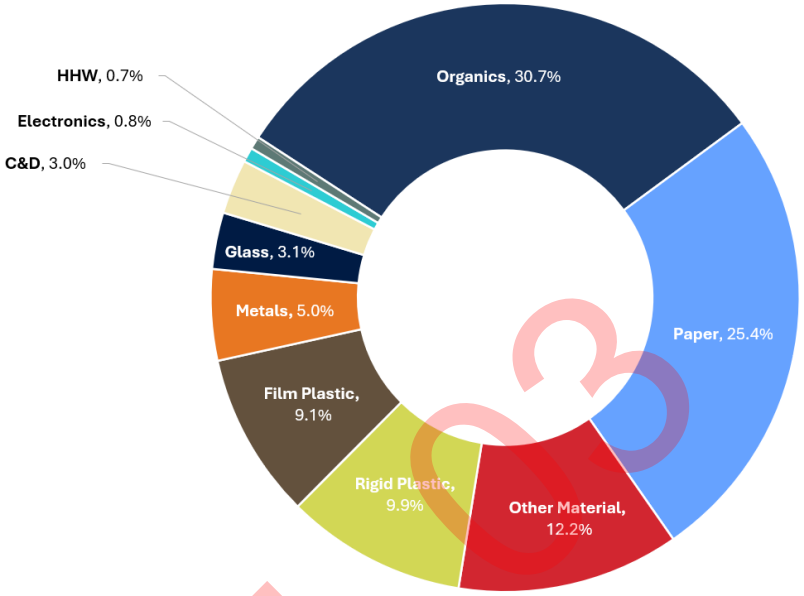
Gate surveys, which collect information on the origin and source of incoming waste loads, indicate that the residential sector generates approximately 63% of the overall tonnage, with the ICI sector contributing the remaining 37%. Organics and paper are the largest components of Tennessee's MSW, followed by film and rigid plastics, with metals, glass, C&D debris, HHW, electronics, and miscellaneous materials comprising the remainder.

Figure 5: Overall Waste Composition Summary



Residential MSW contains more mixed materials (12.2%) and rigid plastics (9.9%), while commercial MSW is more concentrated in paper (25.4%) and film plastics (9.1%), presenting clearer opportunities for targeted diversion.

3.6 Infrastructure and Facilities

Tennessee's solid waste system is supported by a broad network of MSW landfills, transfer stations, convenience centers, RMPFs, MRFs, and composting facilities. As of September 2025, TDEC reported 1,832 permitted facilities, 939 of which are operational. Infrastructure varies across the state's Grand Divisions: West Tennessee has limited assets outside Memphis, Middle Tennessee faces challenges siting new landfills, and East Tennessee increasingly depends on convenience centers to serve growing rural communities.

Collection and Transfer Infrastructure

Tennessee's solid waste management system relies on a combination of decentralized collection, convenience centers and drop-off sites, transfer facilities, and specialized collection and storage infrastructure. Curbside service, dumpsters, and roll-off containers collect waste at or near the point of generation, with route-based collection expanding particularly in growing urban and suburban areas. More than 500 active, permitted convenience centers provide centralized drop-off locations for MSW, recyclables, and other wastes and are particularly important in rural areas, although their distribution and availability vary across the State. Tennessee also has 96 active, permitted transfer stations, which consolidate waste for more efficient transportation to disposal or processing facilities, with 31 located in East Tennessee, 44 in Middle Tennessee, and 21 in West Tennessee. **Figure 6** illustrates the statewide distribution of transfer stations and convenience centers by county.

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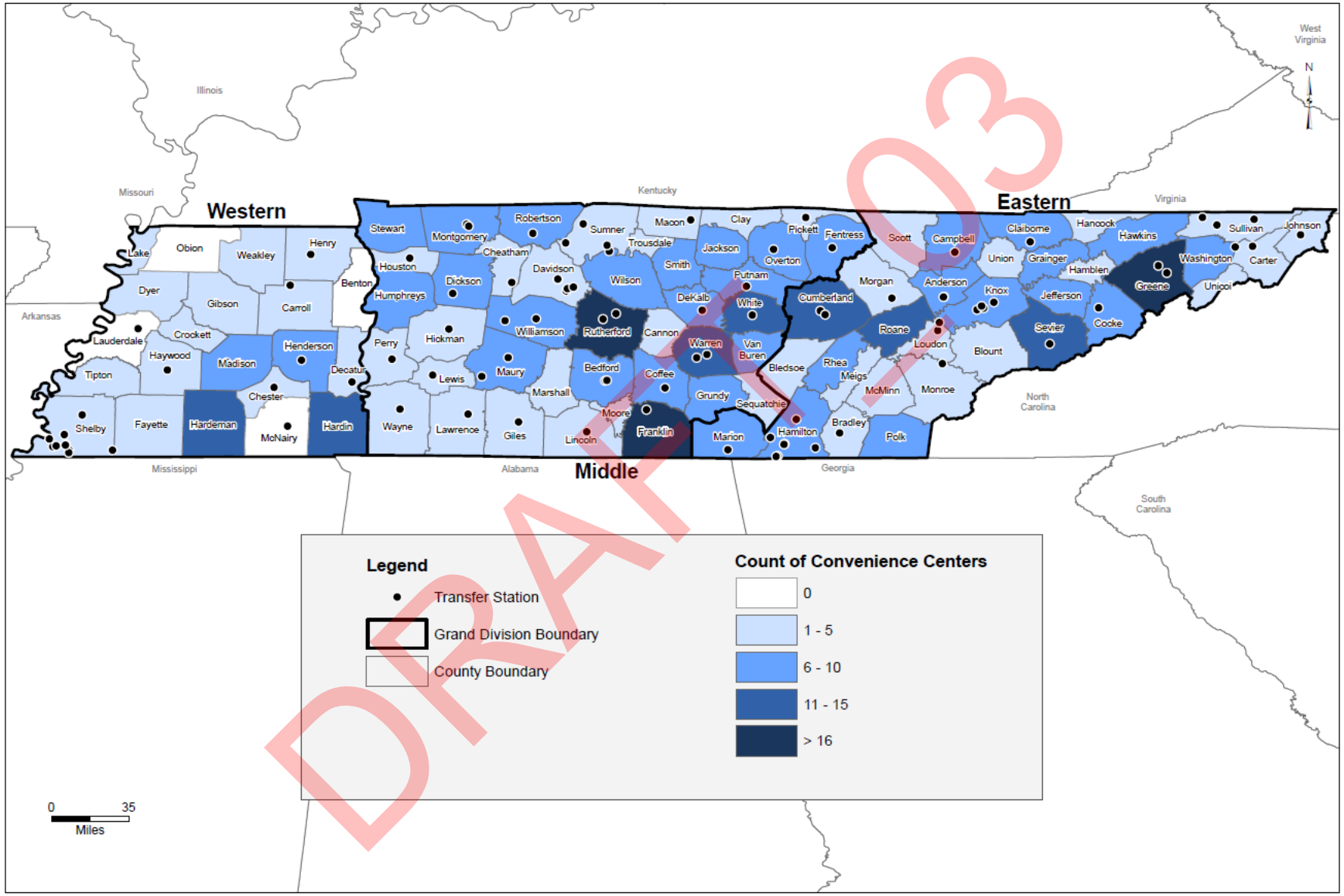
Figure 6: Permitted Solid Waste Transfer Stations and Convenience Centers by County



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Additional infrastructure supports C&D debris, industrial residuals, regulated medical waste, aggregated recyclables, waste tires, and other specialized materials, including 15 permitted tire storage sites. Mobile collection events further support the management and recycling of problematic or hard-to-manage wastes where permanent infrastructure is limited. Together, the availability and distribution of these facilities influence access to services, transportation needs, material recovery opportunities, and the efficiency of Tennessee's solid waste management system.

Diversion Infrastructure

Tennessee's diversion infrastructure includes MRFs, RMPFs, composting facilities, and other permitted processing facilities which support the recovery and processing of materials that would otherwise be disposed. The State has at least 16 MRFs that sort commingled recyclables into marketable commodities. An additional 23 RMPFs registered with TDEC store, process, and resell recovered materials. Tennessee also has 72 active, permitted solid waste processing facilities that manage regulated wastes or generate residuals requiring disposal, including facilities processing auto shredder residue, regulated medical waste, tires, compost, and organics.

Organic materials are also managed through six Tier I–III permitted composting facilities and additional facilities that manage yard waste, leaves, and processing residuals. Together, this infrastructure supports material recovery, end markets, and reduced reliance on landfill disposal. However, access to diversion infrastructure remains uneven across the State. The availability of processing, composting, and market capacity is therefore an important consideration for regional planning and future infrastructure investment. **Figure 7** illustrates the statewide distribution of MRFs and composting facilities.

Landfill Disposal Facilities

In Tennessee, there are 113 active permitted landfills, unevenly distributed across the state. The number of Class I landfills dropped from 96 in 1991 to 30 in 2025. Class III landfills have declined from 65 to 42, while Class IV sites have reduced from 11 to 10. Publicly owned MSW landfills have also declined, from 82% to 40%, reflecting significant privatization. **Figure 8** maps the locations of Class I, III, and IV landfills statewide.

Class I Landfills

Class I landfills are Tennessee's primary MSW disposal facilities, subject to strict operational and environmental controls; 30 are active statewide (15 East, 7 Middle, 8 West). Capacity constraints are emerging statewide, with Middle Point (Rutherford County, projected 2029) and Upper Cumberland (Clay County) nearing capacity. Other facilities previously considered at risk, including those in Hamblen, Loudon, Rhea, and White Counties, have recently received permits for expansion, extending their operational timelines.

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Figure 7: Diversion Infrastructure: MRFs and Composting Facilities

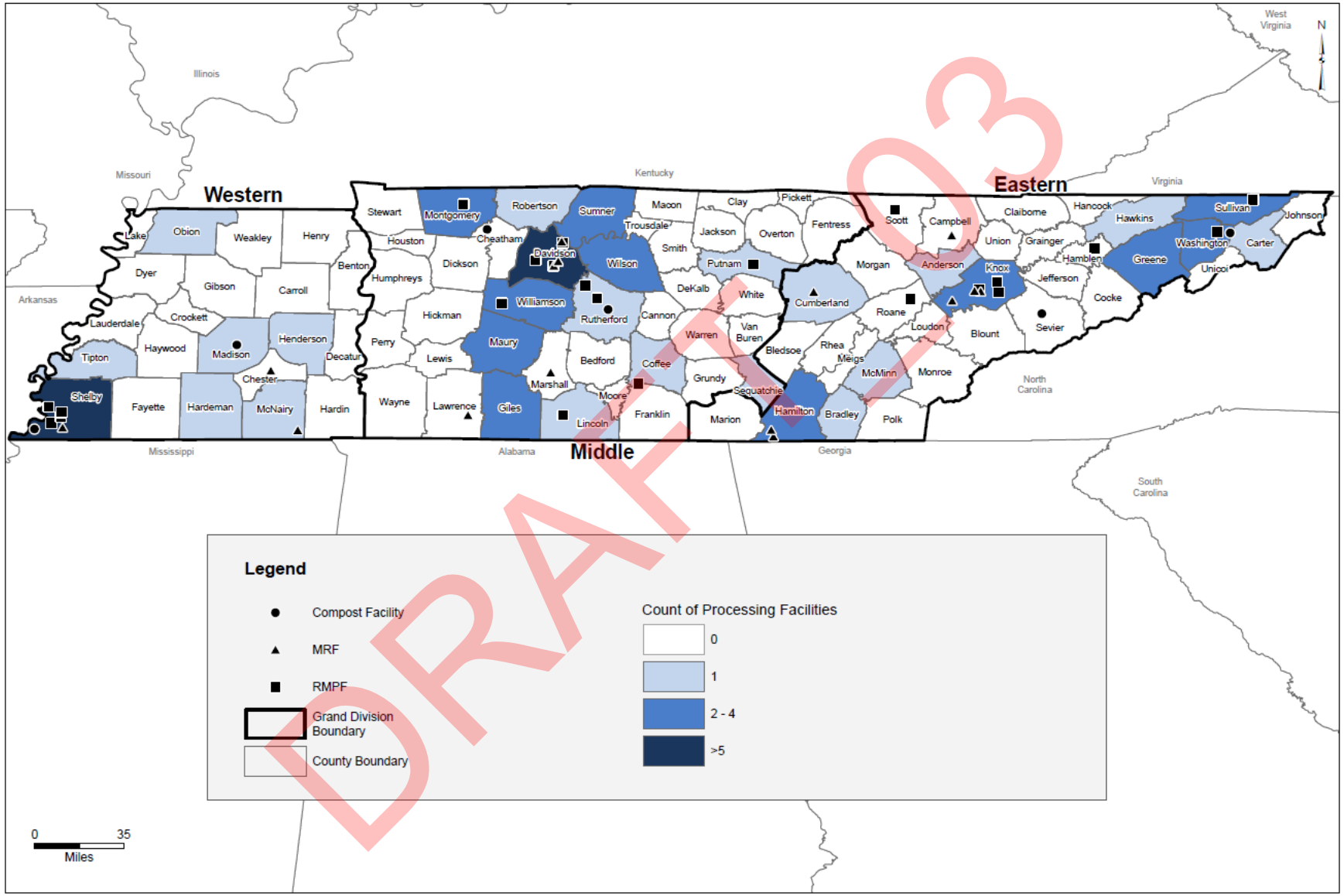

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Figure 8: Operating Tennessee Class I, II, and IV Landfills

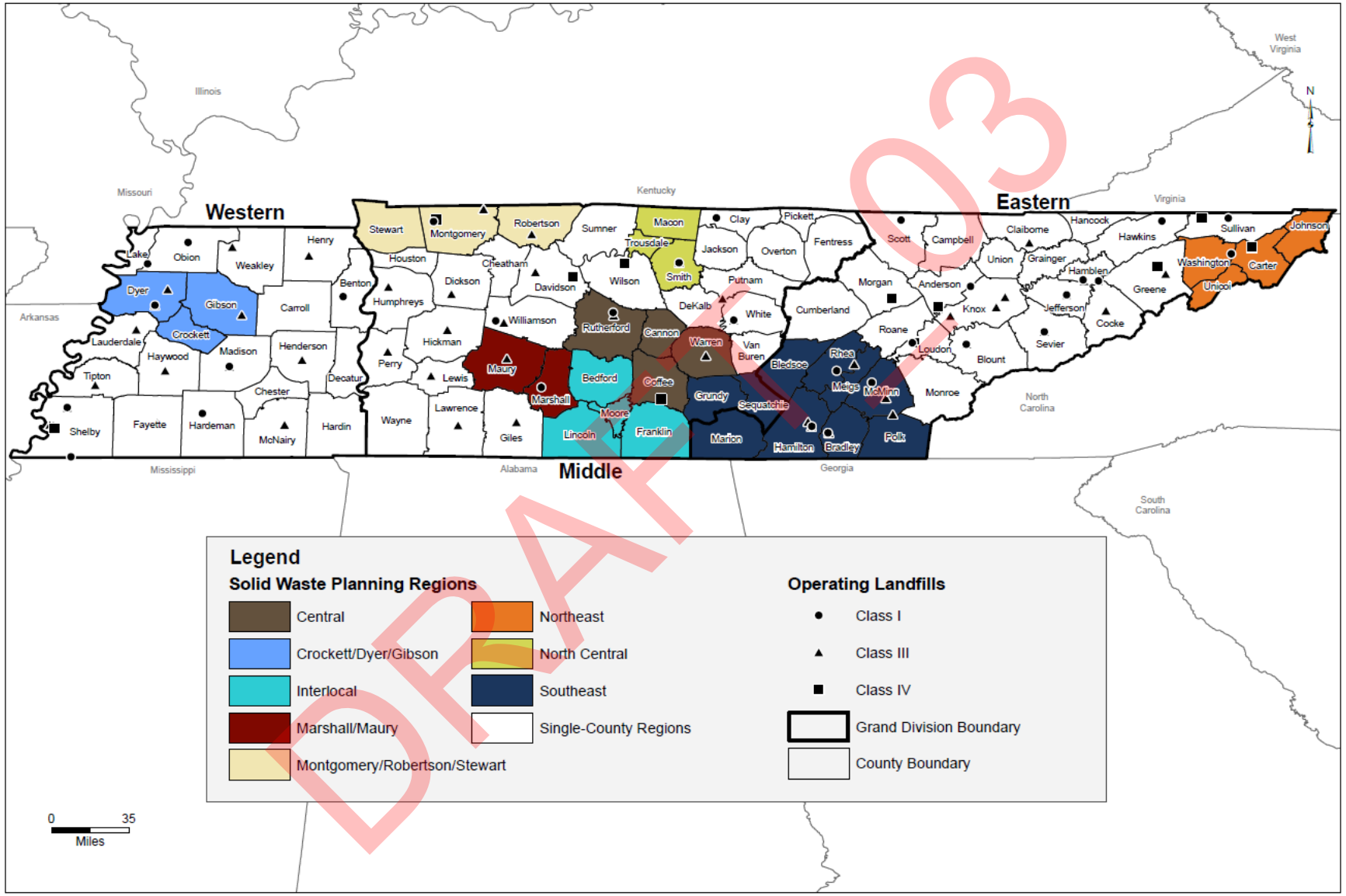

Table 12 details active Class I facilities and their remaining permitted airspace as of 2023. The 2023 Annual Engineering Report also notes 12 additional permitted but unbuilt facilities.[22]

Table 12: Capacity Overview of Active Class I Landfills

Region of Interest	Tons Accepted calendar year (CY) 2014	Tons Accepted (CY) 2023	Permitted Remaining Airspace (CY) 2023
East	2,885,033	3,900,820	115,067,598
Middle	1,944,883	2,157,693	24,867,381
West	1,483,794	2,435,373	151,495,404
State	**6,313,710**	**8,493,885**	**291,430,383**

Remaining Class I landfill life was modeled using reported permitted airspace and projected disposal volumes through the planning period; the modeling approach and results are discussed in **Attachment B, Section B-3.1 Financial Modeling and Scenario Analysis**.

Class II Landfills

Class II landfills are typically designated for non-hazardous industrial waste. Industries use these landfills to dispose of their own waste that is not classified as hazardous under federal regulations. There are 31 active Class II landfills in Tennessee.

Class III/IV Landfills

Class III landfills accept C&D debris, shredded tires, and non-putrescible waste. Of the 83 permitted facilities, 42 are active. These sites do not use synthetic liners but are required to have a geologic buffer or other equivalent or superior protection, along with groundwater protection measures. These sites charge lower tipping fees and are exempt from disposal surcharges. Class IV landfills (also for C&D and quarter tires) are no longer permitted post-2008 but remain active under a grandfather clause; 10 remain operational, with 25 closed or in PCC. Capacity data for Class III and IV sites is not currently tracked by TDEC.

Closed Disposal Facilities

Approximately 309 landfills are closed or undergoing PCC, including cap maintenance, groundwater monitoring, stormwater management, and landfill gas management. Of these, 261 are Class I, III, or IV and are primarily managed by local governments.

3.7 Funding and Economic Conditions

The long-term viability of Tennessee's solid waste management system depends on stable, diversified funding. Most services are funded by local governments through property and sales taxes, tipping and collection fees, host fees, and grants, with supplemental support from state programs, federal agencies, and NGOs. However, rising costs associated with inflation, labor, transportation, compliance, contamination, aging infrastructure, and expanded diversion needs are placing increasing pressure on local budgets. These pressures are especially challenging for small and rural jurisdictions, where lower waste

[22] (TDEC 2024a)

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volumes, limited infrastructure, and fewer economies of scale can increase per-capita service costs.

A review of the 2024 Solid Waste Needs Assessments from the nine Districts identified current revenue sources, program costs, and infrastructure priorities. A detailed analysis of one District covering 16 counties, representing approximately 18% of the state population, showed property taxes (63%), tipping fees (60%), and disposal fees (60%) as the most common majority revenue sources, with most jurisdictions relying on two to three primary sources, as summarized in **Table 13**.

Table 13: Primary Funding Sources for Solid Waste Management Programs in Tennessee

Revenue Source	Frequent Utilization	Majority Source >50%
Property Taxes	69%	63%
Collection Charges	38%	13%
Sales Tax	19%	19%
Tipping Fees	19%	60%
Disposal Fee	31%	60%
Surcharge	13%	0%
Host Fee	60%	0%
Other Sources: Grants, bonds, interest, sales, etc.	94%	0%

Local solid waste expenditures vary considerably, ranging from approximately $10 to $70 per capita. As of FY2022, counties spent an average of $30 per resident, increasing to approximately $45 per capita when city-level expenditures are included. Despite these expenditures and the range of available revenue sources, many counties face an estimated 5–10% shortfall in funding their solid waste management systems, equivalent to approximately $10–$20 million annually. These funding constraints can result in reduced service levels, deferred maintenance, fewer drop-off sites, and limited recycling and diversion opportunities, particularly in rural areas.

Landfill tipping fees also affect local solid waste costs and available revenues. Tipping fees at Tennessee landfills range from approximately $60 to more than $90 per ton, depending on location, ownership, and market conditions. Tipping-fee revenues may help support convenience centers and recycling programs, but jurisdictions with lower waste volumes may have fewer opportunities to recover program and infrastructure costs through these revenues.

At the state level, the SWMF is Tennessee's primary funding source for solid waste planning, recycling, waste reduction, HHW management, infrastructure, grants, and other materials-management activities. Supported by the $0.90-per-ton surcharge on Class I landfill disposal pursuant to TCA § 68-211-835 and the $1.35 fee on each new tire sold in Tennessee pursuant to TCA § 67-4-1603, the SWMF provides grants, rebates, and technical assistance to local governments, particularly those with limited local revenue options.

State funding is supplemented by other public, nonprofit, and private-sector funding sources. Federal programs, including funding available through U.S. EPA and U.S. Department of Agriculture (USDA) Rural Development, as well as nonprofit and private-

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sector investments, can provide additional support for recycling, solid waste infrastructure, equipment, and related initiatives. These resources can help local governments leverage state and local funding to address infrastructure and program needs.

Despite the range of available funding sources, long-term financial sustainability remains a challenge, particularly for smaller and rural jurisdictions with limited revenue-generating capacity. Sustainable funding strategies will need to maintain essential solid waste services while supporting infrastructure improvements and Tennessee's efforts to reduce disposal through increased diversion.

3.8 Data Reporting and Performance Metrics

Reliable data and consistent performance tracking are essential for evaluating Tennessee's solid waste management system and informing planning and investment decisions. State law and TDEC rules require local governments, Regions, and permitted facilities to submit recurring reports on waste generation, disposal, diversion, capacity, and system costs. These reports provide baseline accountability and are compiled by TDEC into its Annual Report to the Governor and General Assembly.

Reporting Systems

TDEC collects solid waste disposal and recycling data primarily through the MyTDEC Forms platform, which is used by permitted landfills and transfer stations, counties, and Regions. While the platform has improved standardization and accessibility, reporting challenges persist. Local staff capacity and training vary; some reporting fields do not fully capture emerging materials or diversion methods, and data from private haulers, commercial generators, and industrial sectors remains limited or incomplete. These gaps reduce visibility into ICI waste flows and regional system performance.

Performance Metrics and Benchmarks

TDEC and local governments use several core metrics to track system performance, including total waste generation and disposal, recycling tonnage by material type, diversion rates, facility waste acceptance volumes, landfill capacity and remaining life, and public program participation and costs. Diversion rates are calculated using multiple methodologies, including population-adjusted, economically adjusted, and real-time reduction approaches. While these metrics provide a general snapshot of system performance, inconsistent calculation methods and assumptions limit comparability across regions and reduce confidence in statewide progress toward the 25% waste reduction and diversion goal.

Overall, enhancing Tennessee's data systems will require more consistent reporting practices, expanded participation from private-sector entities, and improved material- and sector-specific tracking. Strengthening these areas will support more accurate performance measurement, better investment decisions, and more effective long-term solid waste planning.

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3.9 Additional Planning Considerations

In addition to the information summarized in this section, supporting analyses were completed to provide broader context for development of the 2035 Plan. These analyses include additional demographic and socioeconomic characteristics, financial conditions and funding sources, solid waste management technologies, and funding and contracting mechanisms relevant to planning and implementing solid waste programs and infrastructure. Additional discussion of these analyses is provided in Attachment B, with supporting county-level data tables provided in Attachment C.

Together, Attachment B and Attachment C provide additional information that Regions can use to evaluate local conditions, infrastructure and service needs, potential technologies, financial considerations, and approaches to funding and implementing solid waste programs. These resources supplement the statewide information presented in the Plan and provide additional context for the key trends and planning implications discussed below.

3.10 Key Trends and Planning Implications

Existing conditions indicate vulnerabilities in Tennessee's solid waste management system that may worsen as the state continues to grow. Several key trends will shape solid waste planning during the 2025–2035 planning period:

- **Growth is uneven across the state**. Rapid growth in urban and suburban areas, particularly in Middle Tennessee, is increasing waste volumes and placing pressure on local systems. Stagnant or declining populations in some rural areas can result in underused infrastructure and higher per-capita service costs.
- **Waste generation is increasing, while much of the disposed waste stream remains recoverable**. Approximately 70–75% of Tennessee's landfilled waste stream consists of potentially recyclable or compostable materials, indicating opportunities to increase diversion through targeted programs and infrastructure investments.
- **Infrastructure access and disposal capacity vary by region**. Communities have differing access to landfills, transfer stations, convenience centers, recycling facilities, and other waste management infrastructure. These differences affect service availability, transportation needs, costs, and long-term disposal planning.
- **Processing and market capacity affect Tennessee's ability to divert more material**. Recovering additional recyclable and organic materials depends on sufficient collection, processing, composting, and end-market capacity. Without adequate infrastructure and markets, recoverable materials may continue to require disposal.
- **Funding pressures are increasing**. Rising costs, recycling market volatility, infrastructure needs, and demand for diversion programs are placing additional pressure on local budgets. These challenges are particularly significant for smaller and rural jurisdictions with limited revenue options and lower waste volumes.

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- **Data gaps limit planning and performance measurement**. Reporting gaps and inconsistent calculation methods limit comparability across regions and Tennessee's ability to understand waste flows, target infrastructure investments, and measure progress toward the state's 25% waste reduction and diversion goal.

Together, these trends point to the need for continued capacity monitoring, targeted infrastructure investment, stronger regional coordination, improved diversion and organics programs, sustainable funding strategies, and more consistent data systems. These planning implications provide a foundation for the objectives and strategies presented in the 2035 Plan.

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4. STAKEHOLDER ENGAGEMENT AND PUBLIC OUTREACH

A variety of engagement strategies supported stakeholder and public involvement throughout development of the 2035 Plan, with the goal of gathering input and fostering collaboration. The following sections summarize these efforts; additional details are provided in **Attachment D: Stakeholder Engagement and Public Outreach**.

4.1 Stakeholder Engagement

Stakeholder engagement for the 2035 Plan included state and local government representatives, Districts, Regions, public- and private-sector solid waste professionals, industry representatives, and other interested stakeholders and members of the public.

From December 2024 through January 2025, TDEC distributed a digital stakeholder engagement form to gather perspectives, concerns, and suggestions related to Tennessee's existing solid waste management system and future planning needs. The form included multiple-choice, open-ended, and ranking questions to provide stakeholders with several ways to provide input.

Five design workshops were also conducted to assess the existing solid waste management system through a strengths, weaknesses, opportunities, and threats (SWOT) analysis. Four regional workshops were held in Jackson, Nashville, Chattanooga, and Morristown during TDEC's January 2025 APR Workshops, with an additional virtual workshop provided to broaden participation. Through the SWOT exercise, stakeholders identified ideas for addressing solid waste management needs and opportunities and prioritized those ideas based on their significance and potential impact.

Throughout 2025 and 2026, TDEC gathered additional feedback through conference presentations and targeted stakeholder review. Two stakeholder committees provided input at different stages of Plan development, including perspectives from public- and private-sector solid waste professionals and private industry representatives. Separately, TDEC presented the draft 2035 Plan to the UST-SWDCB to receive feedback and respond to questions prior to finalization.

4.2 Public Outreach

TDEC conducted three formal public comment periods during development of the 2035 Plan to provide opportunities for public input at key stages. The first, from November 2024 through January 2025, gathered early input to inform Plan development. The second, from March through April 2026, provided an opportunity to review and comment on the draft Plan and included four in-person and one virtual public hearing. TDEC reviewed the input received and published responses to questions on the project webpage.

A third formal public comment period is being conducted from November through December 2026 to provide an additional opportunity for review before finalization. TDEC will consider comments received and incorporate revisions, as appropriate, into the final 2035 Plan.

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5. MOVING THE 2035 PLAN FORWARD

The 2035 Plan provides a strategic framework for advancing solid waste management in Tennessee throughout the 2025–2035 planning period. The objectives, strategies, tactics, and action items presented throughout the Plan establish priorities for addressing Tennessee's current and anticipated solid waste management needs while protecting public health and the environment. Collectively, these priorities are intended to guide statewide and regional planning, investment, program development, and coordination across Tennessee's solid waste management system.

Implementation of the 2035 Plan will depend on coordination among TDEC and the many public- and private-sector entities involved in solid waste management. The Plan provides statewide direction while recognizing that needs, resources, and conditions vary across Tennessee. Regional plans serve as the primary mechanism for applying this statewide direction to regional and local conditions over the 10-year planning horizon, advancing the State Plan's objectives through regional and local planning and implementation.

The timing of the next regional plans provides a near-term opportunity to advance the 2035 Plan. Formal rulemaking criteria for regional plan review are to be developed by July 2027, with updated regional plans due to TDEC by July 1, 2028. These plans will translate statewide priorities into regional needs and actions and help guide implementation as resources and opportunities become available.

Monitoring progress will help maintain the Plan's relevance through 2035. Improved data and performance measures can help TDEC and its partners evaluate progress, identify emerging needs, and adjust priorities as conditions change. This information will also provide a foundation for future statewide and regional planning efforts.

Ultimately, the 2035 Plan establishes a foundation for coordinated action through 2035 while providing flexibility to respond to changing conditions and regional needs. Through implementation of the Plan and development of regional plans, Tennessee can advance the Plan's objectives and strengthen the State's solid waste management system over time. Together, these efforts support a more coordinated, responsive, and resilient system through 2035 and beyond.

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6. REFERENCES

ADEM. 2016a. *A Plan for Boosting Residential Material Recovery and Recycling in Alabama.* https://adem.alabama.gov/programs/land/landforms/ARPReportFinal.pdf.

—. 2025. *ADEM Awards $2.5 Million in Recycling Grants.* https://adem.alabama.gov/sites/default/files/2025-09/ADEM%20Recycling%20Grants%202025.pdf.

—. 2016b. *Emergency Disposal of Debris Resulting from Natural Disasters.* https://adem.alabama.gov/programs/land/landforms/EmergencyDisposalOfDebrisResultingFromNaturalDisasters2016.pdf.

—. 2022. *Solid Waste Biennial Report.* https://adem.alabama.gov/programs/land/landforms/SolidWaste2020-2022BiennialReport.pdf.

Athens-Clarke County, Georgia. n.d. *Composting.* https://www.accgov.com/1350/Composting.

Biocycle. 2024. *Metro Nashville Tests Residential Food Scraps Collection.* https://www.biocycle.net/metro-nashville-tests-residential-food-scraps-collection/.

Careit, Inc. n.d. *Blog – Food Rescue News & Insights.* https://careit.com/blog/.

Charleston County, South Carolina. n.d. *Residential Recycling.* https://www.charlestoncounty.gov/departments/environmental-management/recycle.php.

Chattanooga Area Food Bank. n.d. *Community Partnership.* https://www.chattfoodbank.org/take-action/community-partnership.

Chester County Solid Waste Department. n.d. *West Tennessee Regional Recycling Hub.* https://chestercountytn.org/solidwaste_westtn_hub.html.

City of Atlanta. n.d. *Multi-Family Recycling.* https://www.atlantaga.gov/government/departments/public-works/recycling-program/multi-family-recycling.

City of Austin, Texas. n.d. *Austin Resource Recovery.* https://www.austintexas.gov/resource-recovery/universal-recycling-ordinance-uro.

—. 2026. *Curbside Organics Collections Report (daily).* https://data.austintexas.gov/Utilities-and-City-Services/Curbside-Organics-Collections-Report-daily-/uppc-yawj/about_data.

City of Bloomington, Minnesota. n.d. *FAQs.* https://letstalk.bloomingtonmn.gov/pay-as-you-throw/widgets/75806/faqs.

City of Chattanooga. 2025. *City of Chattanooga Launches Pilot Program to Divert Food and Glass Waste from Landfills.* https://chattanooga.gov/stay-informed/latest-news/city-chattanooga-launches-pilot-program-divert-food-and-glass-waste.

DRAFT 03

—. n.d. *Composting.* https://chattanooga.gov/services/waste-recycling/composting.

City of Durham, North Carolina. n.d. *Disposal and Drop-Off Facilities.* https://www.durhamnc.gov/898/Disposal-and-Drop-Off-Facilities.

City of Knoxville, Tennessee. n.d. *Compost.* https://www.knoxvilletn.gov/DocumentCenter/View/4028/Backyard-Composting-Handout-PDF.

Environmental Council of the States. n.d. *Tennessee Materials Marketplace.* https://www.ecos.org/smm-projects/tennessee-materials-marketplace/.

ESRI. 2026. *For Hurricane Helene, Implementing ArcGIS Quickly Changed Response Efforts.* https://www.esri.com/about/newsroom/arcnews/for-hurricane-helene-implementing-arcgis-quickly-changed-response-efforts.

Florida Department of Environmental Protection. 2025. *Recovered Materials Certification and Reporting Program.* https://floridadep.gov/waste/waste-reduction/content/recovered-materials-certification-and-reporting-program-0.

Franklin County, Tennessee. n.d. *Solid Waste.* https://franklincotn.us/solidwaste.html.

GA EPD. n.d. *Recycling and Waste Diversion Grant.* https://epd.georgia.gov/about-us/land-protection-branch/recovered-materials-and-abatement/recovered-materials/recycling-and.

—. 2022. *Recycling and Waste Diversion Grant Cycle FY23.* https://epd.georgia.gov/recycling-and-waste-diversion-grant-cycle-fy23.

—. 2025. *Solid Waste Trust Fund.* https://epd.georgia.gov/about-us/land-protection-branch/recovered-materials-and-abatement/recovered-materials/solid-waste.

Georgia Department of Community Affairs. n.d. *Solid Waste Management & Recycling Assistance.* https://dca.georgia.gov/community-assistance/coordinated-planning/local-planning/solid-waste-management-recycling.

Goodwill Industries of Middle Tennessee, Inc. n.d. *Give It 2 Goodwill.* https://giveit2goodwill.org/.

Goodwill Industries–Knoxville, Inc. n.d. *Goodwill Knoxville.* https://www.gwiktn.org/.

Greensboro, North Carolina. n.d. *#RecycleRight.* https://www.greensboro-nc.gov/departments/solid-waste-and-recycling/recycle/recycleright.

Iowa Department of Natural Resources. 2024b. *Household Hazardous Materials Program and Household Hazardous Waste Account Annual Reports.* https://www.legis.iowa.gov/docs/publications/DF/1518263.pdf.

—. 2024a. *Iowa Waste Exchange continues successful run, keeping Iowa cleaner and reducing disposal costs.* https://www.iowadnr.gov/news-release/2024-08-22/iowa-waste-exchange-continues-successful-run-keeping-iowa-cleaner-and-reducing-disposal-costs.

Keep Tennessee Beautiful. n.d.a. *KTnB App.* https://www.keeptnbeautiful.org/app.

DRAFT_03

—. n.d.b. *Litter Laws.* https://www.keeptnbeautiful.org/litter-laws.

—. 2026. *Three Grand Divisions Scholarship.* https://www.keeptnbeautiful.org/scholarship.

Kenton County, Kentucky. 2021. *Debris Management Plan.* https://www.kentoncountyky.gov/DocumentCenter/View/2810/Debris-Management-Plan-2021-Update-PDF.

Kentucky Department for Environmental Protection. 2026. *FY2026 Solid Waste Management Plan Annual Report.* https://apps.legislature.ky.gov/CommitteeDocuments/262/44418/July%202%202026%20Dept%20for%20Environmental%20Protection%20Solid%20Waste%20Management%20Plan%20Annual%20Report%20Fiscal%20Year%202026.pdf.

Kentucky Energy and Environment Cabinet. 2025. *Waste Tire Program Annual Report.* https://apps.legislature.ky.gov/CommitteeDocuments/262/44334/Jun%204%202026%20Kentucky%20Energy%20and%20Environment%20Cabinet%20Waste%20Tire%20Program%20Annual%20Report%202025.pdf.

Leon County, Florida. 2013. *Leon County Annual Report.* https://www2.leoncountyfl.gov/coadmin/pio/LCAR/2013/pdfs/LCAR2013-page_54.pdf.

Metropolitan Government of Nashville and Davidson County. 2026. *Collection Calendar and Waste Wizard (Nashville Waste and Recycling App).* https://www.nashville.gov/departments/waste-services/trash-and-recycling-services/recycling-app.

—. n.d.b. *Davidson County Long-Term Zero Waste Master Plan.* https://www.nashville.gov/departments/waste-services/zero-waste-master-plan.

—. n.d.a. *Food Scraps Pickup Pilot.* https://www.nashville.gov/departments/waste-services/composting-resources/food-scraps-pickup.

Michigan Department of Environment, Great Lakes, and Energy. 2025. *EGLE announces record high 25% Michigan recycling rate, more than $11.8M in recycling grants.* https://www.michigan.gov/egle/newsroom/press-releases/2025/04/23/record-high-recycling-rate.

—. 2026a. *Report of Solid Waste Landfilled in Michigan for Fiscal Year 2025.* https://www.michigan.gov/egle/-/media/Project/Websites/egle/Documents/Legislative/MMD/Part-115/Report-FY25-Landfilled-Solid-Waste.pdf.

—. 2026b. *Report on Part 175, Recycling Reporting.* https://www.michigan.gov/egle/-/media/Project/Websites/egle/Documents/Legislative/MMD/Part-175/Report-FY25-Recycling-Reporting.pdf.

DRAFT – 03

Minnesota Pollution Control Agency. n.d. *Household hazardous waste collection.* https://www.pca.state.mn.us/business-with-us/household-hazardous-waste-collection.

—. n.d. *Understanding Solid Waste.* https://www.pca.state.mn.us/air-water-land-climate/understanding-solid-waste.

—. 2023. *Universal Wastes.* https://www.pca.state.mn.us/sites/default/files/w-hw4-62.pdf.

MTAS. 2026. *Solid Waste.* https://www.mtas.tennessee.edu/reference/solid-waste.

National Centers for Environmental Information. 2025. *U.S. Billion-Dollar Weather and Climate Disasters: Tennessee Summary.* https://www.ncei.noaa.gov/access/billions/state-summary/TN.

Nobody Trashes Tennessee. n.d. *Nobody Trashes Tennessee.* https://nobodytrashestennessee.com/.

North Carolina Department of Environmental Quality. n.d.b. *Electronics Management.* https://www.deq.nc.gov/about/divisions/waste-management/solid-waste-section/special-wastes-and-alternative-handling/electronics-management.

—. n.d.b. *Emergency/Disaster Debris Management.* https://www.deq.nc.gov/about/divisions/waste-management/solid-waste-section/special-wastes-and-alternative-handling/emergencydisaster-debris-management#DisasterDebrisManagementWorkshop2017-2307.

—. 2021. *North Carolina Organics Recycling Study.* https://www.deq.nc.gov/environmental-assistance-and-customer-service/composting/nc-organics-recycling-study-2020/download.

—. n.d.a. *Recycling Directories and Maps.* https://www.deq.nc.gov/about/divisions/environmental-assistance-and-customer-service/recycling-and-materials-management/recycling-directories-and-maps.

—. 2024. *State of the State Recycling Report, FY 2023–24.* https://www.deq.nc.gov/environmental-assistance-and-customer-service/local-govt/state-state-recycling-report-fy-2023-24/download.

North Carolina Emergency Management. 2026. *North Carolina SMART Program.* https://ncdebriscleanup.com/#about.

Ohio EPA. 2024. *Ohio Environmental Education Fund, Financial Summary State.* https://dam.assets.ohio.gov/image/upload/epa.ohio.gov/Portals/42/documents/Reports/2024_OEEF_Annual_Report.pdf.

Oliver, Charles. 2022. *Free composting classes scheduled for Edwards Park, Dalton-Whitfield County Public Library.* https://daltoncitizen.com/2022/09/22/free-composting-classes-scheduled-for-edwards-park-dalton-whitfield-county-public-library/.

DRAFT_03

Orange County, North Carolina. n.d. *Regulated Recyclable Material Ordinance.* https://www.orangecountync.gov/933/Regulated-Recyclable-Material-Ordinance.

ReFED. 2026. *Progress on the Plate: 2026 ReFED U.S. Food Waste Report.* https://refed.org/uploads/2026-food-waste-report-design-final-1.pdf?=ver1.

Second Harvest Food Bank of Middle Tennessee. n.d. *Nourishing communities. Empowering lives.* https://www.secondharvestmidtn.org/.

Sevier Solid Waste. n.d. *Our Facility.* https://www.seviersolidwaste.com/our-facility.

Smart Cities Dive. 2012. *Small Town Implements Curbside Recycling Program.* https://www.smartcitiesdive.com/news/archive-acc-small-town-implements-curbside-recycling-program/754811/.

South Carolina Department of Commerce. 2025. *Recycling Market Development Advisory Council 2025 Annual Report.* https://www.scstatehouse.gov/reports/DeptofCommerce/Recycling%20Market%20Development%20Advisory%20Council%202025%20Annual%20Report.pdf.

South Carolina Department of Environmental Services. 2024. *South Carolina Solid Waste Management Annual Report for Fiscal Year 2024.* https://www.scstatehouse.gov/reports/DES/SW%20Management%20Report%202024.pdf.

—. n.d. *What Can I Recycle?* https://des.sc.gov/community/recycling-waste-reduction/what-can-i-recycle.

TDEC. 2026c. *2015-2025 Solid Waste Management Plan.* https://www.tn.gov/environment/program-areas/solid-waste/materials-management/2015-2025-swm-plan.html.

—. 2026a. *About the Department.* https://www.tn.gov/environment/about-tdec.html.

—. 2021. *Annual Report to the Governor and General Assembly.* https://www.tn.gov/content/dam/tn/environment/solid-waste/documents/materials-management/mm-annual-report-governor-general-assembly/sw_mm_annual-report-dswm-cy21.pdf.

—. 2026h. *Debris Management.* https://www.tn.gov/environment/program-areas/solid-waste/materials-management/disaster-debris-management.html.

TDEC. 2024a. "Division of Solid Waste Management 2023 Annual Report to the Governor and General Assembly." https://www.tn.gov/content/dam/tn/environment/solid-waste/documents/materials-management/remediated/sw_mm-2023-annual-report.pdf.

—. n.d.b. *Division of Stakeholder Engagement.* https://www.tn.gov/environment/stakeholder.html.

DRAFT_03

—. 2025f. *Fall 2024 Mobile Household Hazardous Waste Collection Analysis.* https://www.tn.gov/content/dam/tn/environment/solid-waste/archive/mm/sw_mm_fall-2024_mobile-hhw-collection-analysis.pdf.

—. n.d.a. *Get Food Smart Tennessee.* https://getfoodsmarttn.com/.

—. 2026g. *Household Batteries, Oil, Paint, Antifreeze, and Electronics (BOPAE).* https://www.tn.gov/environment/program-areas/solid-waste/materials-management/bopae.html.

—. 2026d. *Household Hazardous Waste Program (HHW).* https://www.tn.gov/environment/program-areas/solid-waste/materials-management/hhw-program.html.

—. 2024b. *TDEC Announces Waste Management Grants for Convenience Center Upgrades, Used Oil Collection.* https://www.tn.gov/environment/news/2024/10/28/wm-grants-for-convenience-center-upgrades.html.

—. n.d.c. *Tire Environmental Act Program (TEAP).* https://www.tn.gov/environment/stewardship/funding/teap.html.

—. 2026b. *Waste Management Branch.* https://www.tn.gov/content/tn/environment/program-areas/solid-waste.html.

—. 2026e. *Waste Tire Hauler Program.* https://www.tn.gov/environment/program-areas/solid-waste/sw/wth.html.

—. 2025d. *WM Wins Environmental Award for Materials Management.* https://www.tn.gov/environment/news/2025/8/4/wm-materials-management-award.html.

TDOT. 2023. *2022 Tennessee Statewide Litter Study.* https://nobodytrashestennessee.com/wp-content/uploads/2023/02/KTNB_Statewide_Litter_Study_2-16-2023.pdf.

Tennessee Composting Council. n.d. *Tennessee Composting Council.* https://www.tncompostingcouncil.com/.

Tennessee Emergency Management Authority. n.d. *Hurricane Helene.* https://www.tn.gov/tema/updates/past-disasters/2024-disasters/hurricane-helene.html.

Tennessee Environmental Council. n.d. *Recycling Roundup.* https://tectn.org/get-involved/recycling-roundups/.

Tennessee Ethics Commission. 2007. *Ethics Code for the Interlocal Solid Waste Authority.* https://www.tn.gov/content/dam/tn/ethicscommission/documents/local-gov/Interlocal%20Solid%20Waste%20Authority.pdf.

Tennessee State Data Center. 2024. *Tennessee Population Projections.* https://myutk.maps.arcgis.com/apps/dashboards/e394a78a6c754af7b6da1a771acc3b26.

DRAFT_03

The Compost Fairy. n.d. *The Compost Fairy.* https://thecompostfairy.com/.

The Environmental Council of the States. n.d. *Tennessee Materials Marketplace.* https://www.ecos.org/smm-projects/tennessee-materials-marketplace/.

The Recycling Partnership. 2015. *Case Study: Columbia, SC.* https://recyclingpartnership.org/case-study-columbia-sc/.

—. 2014. *Where It All Began – Case Study.* https://recyclingpartnership.org/case-study-florence-al/.

Tilt, Jenna, and Najiba Rashid. 2026. "Stakeholder perceptions of effective management of disaster-generated debris after Hurricanes Helene and Milton in Florida, USA." https://www.sciencedirect.com/science/article/pii/S2212420926002864?via%3Dihub.

U.S. Census Bureau. 2012. *2010 Census Urban and Rural Classification and Urban Area Criteria.* https://www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural/2010-urban-rural.html.

—. 2025. *Annual estimates of the resident population for states: April 1, 2010 to July 1, 2025 (Population Estimates Program).* https://www.census.gov/programs-surveys/popest.html.

U.S. EPA. 2020. *Advancing Sustainable Materials Management 2018 Fact Sheet.* https://www.epa.gov/sites/default/files/2021-01/documents/2018_ff_fact_sheet_dec_2020_fnl_508.pdf.

—. 2026e. *Consumer Recycling Education and Outreach Grant Program.* https://www.epa.gov/circulareconomy/consumer-recycling-education-and-outreach-grant-program.

—. n.d. *Data Downloads.* https://echo.epa.gov/tools/data-downloads.

—. 2026a. *Food: Material-Specific Data.* January 23. https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/food-material-specific-data.

—. 2025e. *Guidance about Planning for Natural Disaster Debris.* https://www.epa.gov/disaster-debris/guidance-about-planning-natural-disaster-debris.

—. 2016. *Pay-As-You-Throw success story: Gainesville, FL.* https://archive.epa.gov/wastes/conserve/tools/payt/web/html/ssgaines.html.

—. 2025. *Prevent Wasted Food Through Source Reduction.* https://www.epa.gov/sustainable-management-food/prevent-wasted-food-through-source-reduction.

—. 2026c. *Preventing Wasted Food in Your Community: A Social Marketing Toolkit.* https://www.epa.gov/sustainable-management-food/forms/preventing-wasted-food-your-community-social-marketing-toolkit.

—. 2026d. *Solid Waste Infrastructure for Recycling Grant Program.* https://www.epa.gov/circulareconomy/solid-waste-infrastructure-recycling-grant-program.

DRAFT_09

—. 2026b. *Sustainable Management of Food Basics.* August 19. https://www.epa.gov/sustainable-management-food/sustainable-management-food-basics.

—. 2025b. *Sustainable Materials Management: Non-Hazardous Materials and Waste Management Hierarchy.* https://www.epa.gov/smm/sustainable-materials-management-non-hazardous-materials-and-waste-management-hierarchy.

University of Tennessee, Knoxville. n.d. *UT Compost Facility (Campus Composting).* https://sustainability.utk.edu/initiatives/campus-composting/.

Urban Green Lab. n.d. *Educate & Train.* https://urbangreenlab.org/educate-train/.

Waste Advantage. 2026. *Keep Tennessee Beautiful Awards 2026 Scholarships to Nine Graduating Seniors.* https://wasteadvantagemag.com/keep-tennessee-beautiful-awards-2026-scholarships-to-nine-graduating-seniors/.

Waste Advantage Magazine. 2021. *Nashville, TN Sees Drop in Curbside Recycling Contamination.* https://www.scrapmonster.com/news/scrap-metal-market-report/nashville-tn-sees-drop-in-curbside-recycling-contamination/80605.

—. 2025. *Sullivan County Solid Waste Holds Grand Opening for New $3.5 Million MRF.* https://wasteadvantagemag.com/sullivan-county-solid-waste-holds-grand-opening-for-new-3-5-million-mrf/.

Williamson County Solid Waste Department. n.d.b. *School Environmental Education Programs.* https://www.williamsoncounty-tn.gov/1604/School-Environmental-Education-Programs.

—. 2024. *Spring Back Mattress Recycling.* https://www.williamsoncounty-tn.gov/2090/Spring-Back-Mattress-Recycling.

—. n.d.a. *Williamson Recycles.* https://www.williamsoncounty-tn.gov/156/Williamson-Recycles.

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ATTACHMENT A
Terms and Definitions

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TERMS AND DEFINITIONS[23]

Anaerobic Digestion: A biological process in which microorganisms break down organic materials in the absence of oxygen, producing biogas and nutrient-rich residual materials. Anaerobic digestion is used to manage organic materials such as food waste and other biodegradable feedstocks.

Best Management Practice: A proven procedure, practice, system, or method used to improve performance or achieve a desired solid waste management objective.

Beneficial Use: The productive use of a material that would otherwise be discarded in a manner that replaces or supplements a raw material or provides another useful function.

Capacity Assurance: Planning and documentation used to demonstrate that sufficient disposal capacity is expected to remain available to meet anticipated solid waste disposal needs over the applicable planning period.

Composting: The managed, aerobic biological decomposition of organic materials by microorganisms to produce a stabilized material that may be beneficially used.

Construction and Demolition Debris: Non-hazardous waste materials generated during the construction, renovation, repair, or demolition of buildings, roads, utilities, and other structures.

Contract in Lieu of Bond: A financial assurance mechanism available to certain local governments or solid waste authorities under Tennessee law through which the public entity assumes responsibility for applicable landfill financial obligations in lieu of providing a traditional surety bond or other financial assurance instrument.

Convenience Center: A staffed and fenced collection area with waste receptacles available to the public when an attendant is present for receipt of household waste, municipal solid waste, recyclable materials, or other accepted materials.

Development District: A regional planning organization established under Tennessee law to support coordinated planning and service delivery across counties. Tennessee has nine Development Districts, which provide planning and technical assistance to local governments and Solid Waste Planning Regions.

Disaster Debris: Materials generated by a disaster or emergency that require collection, staging, processing, recycling, beneficial use, or disposal.

Disaster Debris Management Plan: A plan that establishes procedures and responsibilities for managing debris generated by disasters or emergencies, including collection, staging, processing, recycling or beneficial use, disposal, documentation, contracting, and interagency coordination.

Diversion: Management of materials through recycling, composting, reuse, beneficial use, energy recovery, or other alternatives that reduce the amount of material requiring disposal in Class I landfills.

Division of Land Protection: A division of the Tennessee Department of Environment and Conservation responsible for administering applicable land protection and waste management regulatory programs, including solid waste facility permitting, compliance, and related regulatory responsibilities addressed by the Plan.

[23] **Disclaimer**: The provided terms and definitions contained herein are presented exclusively for the purposes of describing, interpreting, and implementing this plan. This is intended to provide context and consistency within this document and should not be construed as superseding or replacing any statutory, regulatory, organizational, or industry-standard definitions.

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Division of Stakeholder Engagement: A division of the Tennessee Department of Environment and Conservation that supports stakeholder engagement, technical assistance, materials management, market development, environmental stewardship, and related programs through the Office of Recovered Materials and Office of Environmental Stewardship.

End Market: A business, manufacturer, processor, or other user that accepts or purchases recovered materials for incorporation into products, productive use, or further processing.

Financial Assurance: A financial mechanism or demonstration used to ensure adequate resources are available to satisfy applicable solid waste facility obligations, including operating, closure, post-closure care, and corrective-action obligations.

Food Rescue: The recovery and redistribution of safe, edible food that otherwise could be discarded for consumption by people.

Full-Cost Accounting: An accounting approach that identifies the full costs associated with providing solid waste management services, including applicable operating, administrative, capital, maintenance, contractual, closure, post-closure, and other costs.

Grand Division: One of Tennessee's three constitutionally established geographic divisions: East Tennessee, Middle Tennessee, and West Tennessee.

Household Hazardous Waste: Household-generated waste that requires specialized management because of hazardous characteristics or constituents and is exempt from federal hazardous waste regulation when generated by households, consistent with applicable federal and state requirements.

Hub-and-Spoke System: A regional service model in which materials from multiple local collection points or programs, or "spokes," are consolidated and transported to a centralized processing, transfer, or marketing facility, or "hub," to achieve greater operational efficiency and economies of scale.

Industrial, Commercial, and Institutional: Waste generators and activities associated with industrial or manufacturing operations, commercial businesses, and institutional facilities such as schools, universities, hospitals, and governmental facilities.

Landfill: A permitted solid waste disposal facility in which waste is placed, compacted, and covered in accordance with applicable regulatory requirements.

Landfill Airspace: The volume of space within a landfill permitted and available for solid waste disposal.

Landfill Capacity: The quantity or volume of waste that a landfill can accept before reaching its permitted disposal limits or final permitted elevation.

Materials Recovery Facility: A facility that receives recyclable materials and separates, sorts, processes, prepares, or consolidates those materials for sale or delivery to end markets.

Municipal Solid Waste: Solid waste other than hazardous waste that generally consists of residential, commercial, and institutional wastes managed through municipal or similar solid waste management systems.

Municipality: An incorporated political subdivision of the State of Tennessee.

Non-Governmental Organization: A nonprofit or other non-governmental organization that operates independently of government and may support solid waste management through education, outreach, technical assistance, funding, research, recycling, reuse, or related activities.

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Non-Putrescible Waste: Waste containing no more than minor amounts of readily decomposable material, including materials such as construction and demolition debris, glass, plastics, metals, and other inorganic materials, as applicable.

Organic Waste: Waste composed of biodegradable organic materials such as food scraps, yard trimmings, and other vegetative materials that may be suitable for composting, anaerobic digestion, or other organics management practices.

Post-Closure Care: Required monitoring, maintenance, and environmental-control activities conducted after a solid waste disposal facility closes, including applicable activities associated with final cover, groundwater, leachate, stormwater, and landfill gas management.

Problematic or Hard-to-Manage Waste: Waste or materials that present unusual environmental, health, safety, logistical, technological, or economic challenges and may require specialized collection, handling, processing, recycling, beneficial use, or disposal.

Public-Private Partnership: A contractual or collaborative arrangement between public and private entities in which responsibilities, resources, financing, risks, operations, or other functions associated with infrastructure or service delivery are shared or allocated between the parties.

Recovered Materials: Materials diverted or removed from the solid waste stream for sale, use, reuse, or recycling, whether or not subsequent separation or processing is required.

Recovered Materials Processing Facility: A facility engaged solely in the storage, processing, resale, or reuse of recovered materials and that is not considered a solid waste processing facility under applicable Tennessee requirements.

Recycling: The process through which recyclable or recovered materials are collected, separated, processed, and returned to productive use, either directly or as raw materials used to manufacture new products.

Rural: For purposes of the Plan's county-level analysis, a Tennessee county with a population of fewer than 35,000.

Solid Waste: Garbage, trash, refuse, abandoned material, spent material, byproducts, scrap, ash, sludge, and other discarded solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, agricultural, or community activities, consistent with applicable Tennessee law and regulations.

Solid Waste Disposal: The permanent or indefinite placement, confinement, compaction, or covering of solid waste.

Solid Waste Facility: Land, buildings, equipment, and related property used or necessary for the collection, receipt, transfer, processing, treatment, or disposal of solid waste.

Solid Waste Management Fund: Tennessee's state fund supporting eligible solid waste planning, waste reduction, recycling, household hazardous waste management, infrastructure, grants, rebates, technical assistance, and related solid waste management activities.

Solid Waste Planning Region: A single- or multi-county planning area established under Tennessee's Solid Waste Management Act of 1991 that is responsible for preparing and maintaining a regional solid waste plan consistent with statewide requirements.

Solid Waste Processing: A process that modifies the characteristics or properties of solid waste, including treatment, incineration, composting, separation, grinding, shredding, or volume reduction, subject to applicable regulatory exclusions.

Solid Waste Stream: The flow of solid waste and recoverable materials from the point of generation or discard through collection, transfer, processing, recovery, recycling, or disposal.

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Source Reduction: Practices that prevent or reduce waste generation at the source before materials enter the waste management system.

Stakeholder: An individual, organization, or other entity with an interest in or potential role in solid waste planning or implementation, including government entities, solid waste professionals, private businesses, nonprofit organizations, educational institutions, and members of the public.

Suburban: For purposes of the Plan's county-level analysis, a Tennessee county with a population between 35,000 and 115,000.

Temporary Debris Management Site: A location identified for the temporary staging, separation, reduction, processing, recycling, or transfer of disaster-generated debris before final recovery or disposal.

Tennessee Department of Environment and Conservation: The State of Tennessee department responsible for protecting Tennessee's air, land, and water resources and administering environmental regulatory and assistance programs, including solid waste management programs addressed by the Plan.

Tipping Fee: A fee charged based on the quantity of waste or material received at a landfill or other waste management facility.

Transfer Station: A facility where waste is transferred from collection vehicles or containers into larger transportation units for subsequent transport to a disposal or processing facility.

Underground Storage Tanks and Solid Waste Disposal Control Board: The Tennessee board that exercises rulemaking, regulatory, and administrative review responsibilities assigned to it under applicable Tennessee law.

U.S. Environmental Protection Agency: The U.S. Environmental Protection Agency is the federal agency responsible for administering and enforcing federal environmental laws and providing regulations, guidance, data, research, technical assistance, and funding related to environmental protection and waste management.

Urban: For purposes of the Plan's county-level analysis, a Tennessee county with a population greater than 115,000.

Waste Reduction: Reduction in the quantity of waste requiring disposal through source reduction and other applicable waste management practices. As used in connection with Tennessee's statutory goal, the term is interpreted according to the applicable statutory and regulatory methodology.

Waste-to-Energy: The controlled conversion of solid waste into usable energy, such as electricity, steam, or heat.

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ATTACHMENT B

Supporting Planning Information and Technical Analyses

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B-1 Supporting Policy, Regulatory, and Planning Information

B-1.1 Policy and Regulatory Framework

Tennessee's solid waste management system functions within a legal and policy framework that guides solid waste planning, permitting, facility operations, environmental protection, waste reduction and diversion, and regulatory oversight. Federal environmental laws establish baseline requirements for protection of human health and the environment, while Tennessee statutes and regulations establish the state's solid waste planning, permitting, compliance, funding, and materials management programs. Together, these authorities support implementation of the 2035 Plan and regional and local solid waste planning.

Federal Regulation

While solid waste management is primarily regulated at the state and local levels, several federal statutes establish environmental requirements that affect the generation, management, recycling, reuse, and disposal of solid waste in Tennessee.

RCRA of 1976 (42 U.S. Code §6901) establishes the primary federal framework for solid and hazardous waste management. Under Subtitle D, states regulate non-hazardous solid waste, including MSW, C&D waste, and industrial non-hazardous waste, consistent with applicable federal criteria. These criteria address areas such as landfill location, design and operation, groundwater monitoring, closure and PCC, financial assurance, and corrective action. Tennessee implements applicable requirements through state permitting and compliance programs administered by TDEC.

Other federal statutes also affect solid waste management in Tennessee:

- **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980** (42 U.S. Code §9601). CERCLA provides a federal framework for responding to releases or threatened releases of hazardous substances and may apply to contaminated, closed, or abandoned waste disposal sites and illegal dumps through the Superfund program.
- **Clean Air Act (CAA);** 42 U.S. Code §7401-7671). The CAA regulates air emissions associated with certain solid waste management activities, including waste-to-energy (WTE) facilities and landfill gas systems.
- **Clean Water Act (CWA);** 33 U.S. Code §1251-1387). The CWA establishes requirements for protecting surface waters and may apply to stormwater, wastewater, leachate management, and other discharges associated with solid waste facilities.

Compliance with applicable federal requirements helps ensure consistency with national environmental standards, supports protection of public health and the environment, and maintains access to applicable federal technical and financial assistance.

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Tennessee Statutory and Regulatory Framework

Solid waste management in Tennessee is governed primarily by the Tennessee Solid Waste Disposal Act and the Solid Waste Management Act of 1991 and is regulated by TDEC. Together, these laws establish the framework for solid waste facility regulation, statewide and regional solid waste planning, waste reduction and diversion, funding, reporting, and related solid waste management programs.

The Solid Waste Management Act of 1991 mandates solid waste planning, establishes regional governance structures, and provides the statutory basis for programs that support statewide, regional, and local solid waste management. Key provisions of the Act include:

- Creation of Regions, each required to prepare and maintain a regional solid waste plan (TCA §68-211-814);
- Preparation of 10-year regional solid waste plans, updated every 10 years following publication of Tennessee's 10-year plan with APRs to track implementation and effectiveness (TCA §68-211-814);
- Establishment of required regional solid waste plan contents under TCA §68-211-815;
- Authorization for TDEC to set diversion goals, administer grants, and conduct enforcement (TCA §68-211-861); and
- Establishment of a waste reduction and diversion goal of 25% per capita by weight, relative to a 1995 baseline (TCA §68-211-861).

The Solid Waste Management Act of 1991 also establishes the SWMF under TCA §68-211-821 and provides the statutory basis for programs supporting solid waste planning, recycling, waste reduction, infrastructure, HHW management, and other solid waste management activities.

Permitting and Facility Regulation

TDEC regulates the siting, permitting, operation, and closure of solid waste facilities, including:

- Class I, II, III, and IV landfills;
- Transfer stations;
- Convenience centers;
- Solid Waste Processing and recycling facilities;
- Composting operations; and
- Tire storage and processing sites.

Facility permits are issued pursuant to the Tennessee Solid Waste Disposal Act and applicable requirements of TDEC Rule Chapter 0400-11-01. Depending on facility type and activity, applicable state and federal requirements address design and operating standards, financial assurance, groundwater monitoring, corrective action, recordkeeping and reporting, closure, and PCC.

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Waste Diversion, Recycling, and Problematic or Hard-to-Manage Waste Policies

Tennessee's regulatory framework also supports waste reduction, recycling, diversion, and management of problematic or hard-to-manage materials. State and local efforts are supported through programs such as recycling and waste reduction grants, convenience center funding, HHW collection, and technical assistance.

The SWMF provides an important source of state financial support for solid waste planning, infrastructure, recycling, waste reduction, HHW management, and related activities. The SWMF is supported in part by disposal-related fees established under TCA §68-211-835.

Tennessee also maintains programs and requirements for specific waste streams:

- Waste Tire Management Program (TCA §68-211-867) requires county collection sites and prohibits landfilling of whole tires; funded by a pre-disposal fee to support proper disposal and reuse. The draft Waste Tire Hauler Rule, developed in response to TN HB1689, introduces enhanced compliance requirements for hauler registration, load tracking, and reporting protocols to strengthen oversight and curb illegal dumping across Tennessee.[24] It was presented at the May 2025 UST-SWDCB meeting and is anticipated to be finalized by late 2026 following public hearings and comment review.
- The Household BOPAE Program supports safe disposal of items like cathode ray tubes and lithium-ion batteries in line with federal standards.
    - The Mercury-Containing and Rechargeable Battery Management Act (TCA §68-211-301) was established to phase out the use of mercury-containing batteries and to promote the recycling of rechargeable batteries such as nickel-cadmium and small sealed lead-acid batteries (TCA §68-211-801);
    - The Used Oil Collection Act of 1993 (TCA §68-211-1001) established a statewide program to reduce improper disposal of used oil and antifreeze by providing incentives and grants to expand public collection facilities for do-it-yourselfers, thereby promoting proper recycling and environmental protection ; and
    - HHW collection program (TCA §68-211-828, 829) supports collection and appropriate management of household wastes requiring specialized handling.

These programs complement Tennessee's broader efforts to reduce disposal, recover materials, and provide appropriate management options for wastes requiring specialized handling.

B-1.2 Implementation Responsibilities

The regulatory and planning framework described above establishes the foundation for implementation of the 2035 Plan. Responsibilities are distributed among TDEC, the UST-SWDCB, Districts, Regions, counties and municipalities, solid waste authorities, and other

[24] (TDEC 2025)

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public and private stakeholders. Tennessee law establishes distinct responsibilities for these entities related to statewide planning, regional planning, regulatory oversight, implementation, technical assistance, and compliance.

Tennessee Department of Environment and Conservation

TDEC is responsible for:

- Developing and maintaining the statewide plan in accordance with TCA §68-211-814 and §68-211-815, ensuring alignment with state goals and regulatory requirements;
- Providing statewide guidance, oversight, technical assistance, and regulatory enforcement to support regional and local planning efforts;
- Administering grants, setting waste reduction goals (TCA §68-211-861), and conducting enforcement actions;
- Reviewing and approving or disapproving regional solid waste plans within 90 days of receipt per TCA §68-211-814; and
- Regulating the siting, permitting, operation, and closure of solid waste facilities, including landfills, transfer stations, convenience centers, RMPFs, MRFs, and composting facilities.

Enforcement Authority

TDEC oversees compliance with Tennessee's solid waste laws and regulations through mechanisms that include permitting, inspections, reporting, plan review, technical assistance, and enforcement actions. The specific enforcement mechanism available to TDEC depends on the applicable statutory or regulatory requirement. Tennessee law provides separate authorities addressing regulatory violations and noncompliance with regional planning requirements.

For noncompliance by a Region, TCA §68-211-816 establishes a graduated sanction process:

- **Warning and Technical Assistance:** On the first instance of noncompliance, the Commissioner issues a warning letter identifying the reasons for noncompliance, setting forth the sequence of graduated sanctions, and offering technical assistance.
- **Loss of Grant Eligibility:** If noncompliance continues for 30 days after receipt of the warning letter, the noncomplying county or Region loses eligibility for SWMF funding unless the Commissioner determines in writing that additional time is appropriate because of particular circumstances.
- **Civil Penalties:** If noncompliance continues for 60 days after receipt of the warning letter, the Commissioner may impose a civil penalty of up to $5,000 for each day of noncompliance beyond the 60-day period, in addition to other penalties provided by law. Penalties collected under §68-211-816 are deposited in the SWMF.
- **Other Statutory Penalties:** Violations of TCA §§68-211-608, 68-211-866(a), or 68-211-867(d) are subject to the penalties provided under TCA §68-211-117.

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Separately, TCA §68-211-117 provides for civil penalties for violations of applicable solid waste requirements and authorizes the Commissioner to issue assessments, subject to administrative review procedures.

Underground Storage Tanks and Solid Waste Disposal Control Board

The UST-SWDCB, established under TCA §68-211-111, provides regulatory oversight and administrative review within Tennessee's solid waste regulatory framework.

The UST-SWDCB is responsible for:

- Exercising rulemaking responsibilities assigned to the Board under Tennessee's solid waste laws;
- Establishing or approving regulatory requirements and methodologies where specifically authorized by statute;
- Hearing administrative appeals of certain permitting, enforcement, and other decisions made by the Commissioner; and
- Providing the regulatory and administrative review functions assigned to the Board under Tennessee law.

Regulatory and Appeals Authority

The UST-SWDCB's role is distinct from TDEC's day-to-day administration and enforcement of the solid waste program. The Board exercises rulemaking and administrative review authorities established under TCA §68-211-111 and other applicable statutes. TCA §68-211-117, for example, allows a person against whom the Commissioner has issued a civil penalty assessment to seek review through a hearing before the Board.

Development Districts

Districts are regional planning organizations established pursuant to TCA §13-14-102. Their boards are responsible for area-wide planning within their respective districts, and TCA §13-14-103 establishes their broader role in supporting coordinated regional planning and assisting local governments in making effective use of federal, state, and local programs.

Within Tennessee's solid waste planning framework, Districts support implementation by:

- Providing technical and planning assistance to counties, municipalities, and Regions;
- Supporting regional solid waste planning, reporting, recycling, waste reduction, and related planning activities;
- Facilitating coordination and cooperative approaches among local governments and regional partners; and
- Connecting local governments and Regions with TDEC programs, technical resources, funding opportunities, and other available assistance.

Districts provide planning, technical assistance, and regional coordination rather than exercising TDEC's regulatory or enforcement authority. This distinction is consistent with TCA §13-14-103, which generally separates the District planning function from

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implementation functions assigned to state and local governments and their instrumentalities.

Solid Waste Planning Regions

Regions, also referred to as Municipal Solid Waste Regions, are responsible for regional solid waste planning and implementation in accordance with TCA §68-211-813, TCA §68-211-814, and TCA §68-211-815.

Regions must prepare and maintain regional solid waste plans consistent with the statewide solid waste management plan, applicable Tennessee law, and TDEC regulations. Each Region must also submit an APR to TDEC covering the next 10 years, as required by TCA §68-211-814.

The regional solid waste plan must include, at a minimum:

- Demographic information and anticipated growth trends for the next ten-year period;
- A current system analysis of waste streams, including data concerning types and amounts generated; collection capability, including data detailing the different types of collection systems and the populations and areas which receive and do not receive such services; disposal capability, including an analysis of the remaining life expectancy of landfills or other disposal facilities; costs, using a full-cost accounting model, or similar, developed by the commissioner, including costs of collection, disposal, maintenance, contracts and other costs; and revenues, including cost reimbursement fees, appropriations and other revenue sources;
- Adoption of the uniform financial accounting system required by TCA §68-211-874;
- Anticipated waste capacity needs and planned capacity assurance, including descriptions of planned or needed facilities;
- A recycling plan, including a description of current public and private recycling efforts and planned efforts to enhance recycling within the county or region;
- A plan for the disposal of HHW;
- Adoption of uniform reporting requirements as required by TCA §68-211-815;
- A description of waste reduction and recycling activities designed to attain the goal required by TCA §68-211-861;
- A description of education initiatives aimed at businesses, industries, schools, citizens, and others, which addresses recycling, waste reduction, collection, and other applicable goals;
- An evaluation of multi-county solid waste disposal region options with an explanation of the reasons for adopting or failing to adopt a multi-county regional approach;
- A timetable for implementation of the plan;
- A description of the responsibilities of the various participating jurisdictions;

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- A certification from the region's solid waste authority, if such an authority has been formed, or if no such authority has been formed, the county legislative body of each county in the region that they have reviewed and approved the region's plan and/or revised plan;
- A plan for managing solid waste generated as a result of disasters or emergencies; and
- Any other information the commissioner may deem relevant to the implementation of this part.

Regions must submit plans and revisions to TDEC for review and approval in accordance with TCA §68-211-814. TDEC must approve or disapprove a submitted plan within 90 days. If a plan is disapproved, the Region must correct the identified deficiencies and resubmit the plan within 60 days of receiving the notice of disapproval.

Regions are also responsible for working toward the state's 25% waste reduction and diversion goal established under TCA §68-211-861. If a Region does not meet the goal, TDEC assesses the activities and expenditures of the Region and its local governments to determine whether the Region's program is qualitatively equivalent to those of Regions meeting the goal and whether the failure resulted from factors beyond the Region's control.

Failure to comply with applicable regional planning requirements may result in the graduated sanctions established under TCA §68-211-816, as described under TDEC's Enforcement Authority above.

Reporting Authority

TCA §68-211-871 provides Regions with specific authority necessary to obtain information for solid waste reporting purposes. In accordance with TCA §68-211-871, a Region may:

- Require any person or entity that is actively and regularly engaged in the collection, transportation, or disposal of MSW, or in the recovery or recycling of materials within the county or counties that make up the region, to provide any information necessary for the region to meet its reporting requirements under this statute; and
- If a person or entity fails to provide the required information, the region may file an action for mandatory injunction in the chancery court to compel compliance. The region is also authorized to recover all associated costs and attorney's fees from any person or entity that fails to meet the reporting requirements of this section.

Local Governments

Local governments play an essential role in implementing the 2035 Plan through the provision of solid waste collection and recycling services, operation and support of local infrastructure, participation in regional planning, and provision of information necessary for statewide and regional planning.

Counties and municipalities support implementation by:

- Operating collection, recycling, and disposal programs and infrastructure within their jurisdictions, including municipal systems that must be coordinated with and

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supplemented by county systems as required under the Solid Waste Management Act.

- Ensuring the availability of at least one site for recyclable material collection per county, in accordance with TCA §68-211-863.
- Supporting regional planning efforts by participating in regional boards, coordinating service levels, and providing required data for APRs as mandated under TCA §68-211-871.

Counties have additional responsibilities for solid waste collection planning. In accordance with TCA §68-211-851, counties must prepare plans addressing adequate solid waste collection services and update those plans annually. County planning must account for municipal collection systems so that county services complement and supplement services provided by municipalities.

Technical assistance for preparing, updating, and implementing local solid waste plans is available through the University of Tennessee CTAS and, where applicable to municipalities, MTAS.

Other Stakeholders

In addition to state, regional, and local governmental entities, successful implementation of waste reduction, recycling, and materials management initiatives requires coordinated participation by private-sector organizations, NGOs, academic institutions, and individual citizens.

- **Private Industry**: Private entities own and operate many solid waste, recycling, processing, and materials recovery facilities; provide collection, transportation, and disposal services; advance material recovery and diversion technologies; and support development of markets for recovered materials.
- **Non-Governmental Organizations**: NGOs support public education, outreach, technical assistance, and community-based programs that advance waste reduction, recycling participation, reuse, and other materials management initiatives.
- **Academic Institutions**: Academic institutions support implementation through research, data analysis, technical assistance, education, and campus-based waste reduction and recycling initiatives. Each institution governed by the Tennessee Board of Regents or the University of Tennessee Board of Trustees is required by TCA §49-7-121 to develop an annual source reduction, recycling, and waste management plan consistent with the statewide plan. In accordance with TDEC guidance (**Appendix 1: TDEC Waste Characterization Study**), plan submission to TDEC is not required; however, TDEC provides technical assistance to support plan development and implementation.
- **Individual Citizens**: Citizens support implementation through participation in local collection, recycling, reuse, and waste reduction programs; adoption of practices that reduce waste generation and disposal; and engagement in community programs and local planning and decision-making processes.

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B-2 Additional Tennessee Characteristics Relevant to Planning

Tennessee's physical, demographic, and economic characteristics influence how waste is generated and managed across the state. Differences in geology and topography affect facility siting and transportation, while household characteristics, socioeconomic conditions, employment, and other population factors influence waste generation, service needs, and participation in solid waste programs. ICI activity and tourism can further affect the type, quantity, and geographic distribution of waste requiring management. This evaluation uses the most current demographic, household, economic, ICI, and tourism data available at the time of the analysis, with source years generally ranging from 2023 through 2025. The following sections summarize these characteristics and their relevance to solid waste planning in Tennessee.

B-2.1 Geology and Topography

Tennessee's terrain falls into three major regions, each shaping waste management in distinct ways.[25] East Tennessee, dominated by the Appalachian Mountains and Ridge-and-Valley Province, has steep slopes, fractured bedrock, and extensive karst, making landfill siting difficult and increasing the complexity of groundwater monitoring, especially in carbonate formations like the Knox Group and Chickamauga Limestone. Middle Tennessee, within the Highland Rim and Central Basin, also contains widespread limestone and karst, creating similar siting challenges. West Tennessee, part of the Gulf Coastal Plain, offers flatter terrain and thick sediments more conducive to traditional landfill development, though it remains susceptible to flooding and perched water tables. These geologic and topographic conditions influence facility siting, design, monitoring, and transportation logistics. Steep grades, long distances, and isolated areas increase hauling costs and limit access to recycling markets.

B-2.2 Household Characteristics

Understanding Tennessee's population and economic landscape is essential for effective solid waste planning. Population growth can drive increases in residential waste, while employment and economic activity shape waste generation in the ICI sector. Household size, housing type, and whether residents own or rent their homes affect consumption and recycling behaviors, and cultural and language considerations can influence outreach and participation. This section explores these and other key demographic and economic indicators to provide a foundation for projecting future waste generation and planning responsive, equitable solid waste services.

Household characteristics directly impact solid waste and recycling system design. Household size influences waste volume, while housing type, whether single-family or multi-family, determines whether curbside collection or centralized infrastructure is more feasible. Since one-third of Tennessee households are renter-occupied, higher turnover

[25] (Safford 1869)

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rates can disrupt recycling participation and necessitate more frequent, targeted outreach to ensure compliance.[26]

Tennessee's average household size is 2.49, with Middle Tennessee having the highest at 2.55.[27] Owner-occupied households are slightly larger (2.52) than renter-occupied ones (2.41), a consistent trend across all three Grand Divisions (**Table B - 1**).

Table B - 1: Average Household Size

Region of Interest	Owner-Occupied	Renter-Occupied	Average
East	2.47	2.34	2.43
Middle	2.58	2.49	2.56
West	2.48	2.38	2.46
Statewide	**2.52**	**2.41**	**2.49**

Housing type also varies regionally. East Tennessee leads in single-family housing, comprising 83.1%, while multi-family housing comprises over 20% of both Middle and West Tennessee housing (**Table B - 2**). Rural areas have the highest share of single-family homes (92%), followed by urban (73.8%), while urban areas have the most multi-family housing (26.2%), likely due to mobile home parks and small apartment complexes.

Table B - 2: Housing Type

Region of Interest	Total Housing Units	Single Family Units	% Single Family	Multi-Family Units	% Multi-Family
East	1,180,492	981,058	83.1%	199,434	16.9%
Middle	1,208,263	949,397	78.6%	258,866	21.4%
West	691,117	550,382	79.6%	140,735	20.4%
Statewide	**3,079,872**	**2,480,837**	**80.6%**	**599,035**	**19.4%**

Homeownership rates follow a similar pattern: East Tennessee has the highest (69.2%) and West Tennessee has the lowest (61.5%).[28] **Table B - 3** provides additional detail on owner- and renter-occupied units by Grand Division and region type.

Table B - 3: Housing Units and Tenure Status

Region of Interest	Occupied Housing	Owner-Occupied	Owner-Occupied	Renter-Occupied	Renter-Occupied
East	1,043,773	731,573	70.1%	312,200	29.9%
Middle	1,114,676	748,945	67.2%	365,731	32.8%
West	610,294	375,275	61.5%	235,019	38.5%
Statewide	**2,768,743**	**1,855,793**	**67.0%**	**912,950**	**33.0%**

These variations in household size, housing type, and tenure status shape waste generation rates, infrastructure needs, and outreach effectiveness. Understanding these

[26] (U.S. Census Bureau 2023a)
[27] (U.S. Census Bureau 2023b)
[28] (U.S. Census Bureau 2023c)

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patterns enables more responsive, data-informed planning tailored to Tennessee's diverse living arrangements and service requirements.

B-2.3 Employment, Income, and Economic Indicators

Employment, income, and poverty trends across Tennessee's Grand Divisions provide important context for differences in waste generation and access to solid waste services. As detailed in **Table B - 4**, Tennessee's median household income of approximately $62,061 remains well below the national median of $80,610, despite steady growth of 4.8% annually from 2014 to 2023[29] Per capita income, however, exceeds the national average at approximately $52,152.[30] Employment has stabilized near 58% since 2020 (**Table B - 5**), and strong business formation in 2024, particularly in Davidson, Shelby, Knox, and Hamilton counties, reflects continued economic activity associated with increased residential and ICI waste generation.

Table B - 4: Average Income Per Capita and Household Income

Region of Interest	2023 Income Per Capita	2025 Income Per Capita[1]	2023 Household Income	2025 Household Income[2]
East	$48,286	$50,741	$57,577	$60,473
Middle	$51,029	$53,595	$62,754	$65,910
West	$49,123	$51,594	$54,309	$57,041
Statewide	**$49,654**	**$52,152**	**$59,089**	**$62,061**

Notes:

1. [1]Income per Capita adjusted to maintain purchasing power in 2025 dollars.
2. [2]Median Household Income adjusted to maintain purchasing power in 2025 dollars.

Table B - 5: Employment Rates for Population Aged 16 and Over

Region of Interest	Population Age 16+	Total Employed	% Employed
East	2,002,695	1,096,508	55%
Middle	2,202,275	1,363,134	62%
West	1,232,272	687,688	56%
Statewide	**5,551,644**	**3,213,805**	**58%**

Approximately 16% of Tennessee residents live below the poverty line (**Table B - 6**), with the highest poverty rates in West Tennessee and the largest number of individuals in poverty in East Tennessee. In these areas, affordability challenges and limited access to curbside and recycling services can reduce participation and widen service disparities. These conditions highlight the need for flexible and inclusive solid waste strategies, such as subsidized services and targeted outreach, to support economically vulnerable populations.

Table B - 6: Population Living in Poverty

Region of Interest	Number in Poverty	Average % in Poverty
East	373,646	16%

[29] (Federal Reserve Bank of St. Louis 2023).
[30] (U.S. Census Bureau 2025)

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Region of Interest	Number in Poverty	Average % in Poverty
Middle	325,507	14%
West	264,325	18%
Statewide	**963,478**	**15.7%**

B-2.4 Language, Education, and Cultural Considerations

Understanding differences in language and education levels is critical to designing effective solid waste outreach strategies. English proficiency in Tennessee is relatively high, with only 1.51% of residents classified as having limited English proficiency (LEP; **Table B - 7**), and Spanish is the most common non-English language spoken.[31] Educational attainment, however, varies by region: 13.5% of residents statewide have less than a high school diploma, with significantly higher concentrations in West Tennessee. Middle Tennessee has the highest share of residents with a bachelor's degree or higher (**Table B - 8**).

Table B - 7: LEP and Most Common Non-English Languages

Region of Interest	Average LEP Population	Most Common Other Primary Languages
East	1.42%	Spanish or Spanish Creole, Chinese, Vietnamese, French (Patois, Cajun)
Middle	1.68%	Spanish or Spanish Creole, Arabic, African Languages, Chinese
West	1.31%	Spanish or Spanish Creole, Vietnamese, African Languages, Chinese
Statewide	**1.51%**	**Spanish or Spanish Creole, Vietnamese, African Languages, Chinese**

Table B - 8: Average Educational Attainment

Region of Interest	< High School Diploma	High School / Equivalent	Bachelor's	Graduate/Professional	Other
East	13.5%	38.7%	12.1%	7.4%	28.3%
Middle	13.1%	39.2%	13.6%	7.4%	26.8%
West	14.4%	42.6%	10.9%	6.3%	25.8%
Statewide	**13.5%**	**39.8%**	**12.5%**	**7.1%**	**27.1%**

B-2.5 Age Distribution

Age demographics shape solid waste service needs and program design across Tennessee. Older residents may require assisted collection and accessible services, while younger, student-heavy communities tend to respond better to digital tools, flexible scheduling, and incentive-based recycling programs. As shown in **Table B - 9**, Tennessee's population comprises 22.1% under age 18, 60.6% working-age adults, and 17.4% seniors.[32] East Tennessee has the highest share of seniors, indicating a greater need for age-friendly services, whereas Middle Tennessee has the largest working-age population, linked to rapid urban growth.

[31] (U.S. Department of Justice 2025)
[32] (U.S. Census Bureau 2023d)

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Table B - 9: Population Distribution by Age Group

Region of Interest	< Age 5	Ages 5-13	Ages 14-17	Ages18-24	Ages 25-44	Ages 45-64	> Age 65
East	136,965 (5.2%)	264,586 (10.0%)	130,602 (5.0%)	233,815 (8.9%)	651,635 (24.7%)	686,400 (26.1%)	530,176 (20.1%)
Middle	172,659 (6.0%)	323,558 (11.3%)	154,323 (5.4%)	262,862 (9.2%)	818,973 (28.6%)	694,490 (24.3%)	431,696 (15.1%)
West	97,389 (6.3%)	186,118 (12.0%)	87,728 (5.6%)	132,225 (8.5%)	409,721 (26.3%)	378,298 (24.3%)	265,845 (17.1%)
Statewide	**407,103 (5.8%)**	**774,262 (11.0%)**	**372,653 (5.3%)**	**628,902 (8.9%)**	**1,880,329 (26.7%)**	**1,759,188 (25.0%)**	**1,227,717 (17.4%)**

Notes:

1. Values shown first indicate the population count, and those in parentheses indicate the corresponding percentage.

B-2.6 Industrial, Commercial, and Institutional Sector

The ICI sector generates a substantial share of Tennessee's solid waste but remains poorly characterized due to reliance on private haulers and limited reporting requirements. Nationally, ICI waste accounts for an estimated 40-60% of non-hazardous solid waste, a range likely applicable to Tennessee given its strong manufacturing, logistics, healthcare, and tourism sectors, particularly in urban counties such as Davidson, Shelby, Hamilton, and Knox.[33]

Recent employment trends suggest shifts within the ICI waste stream. Healthcare employment has remained relatively flat since 2019, while food services grew by 11.6%, accelerating food waste and disposable packaging generation.[34] Manufacturing remains a major source of industrial waste, especially from automotive facilities, though planned plant closures may reduce output in some subsectors.[35] Retail trade and accommodation and food services continue to generate large volumes of recyclable materials such as cardboard and food waste, making them key targets for diversion. Despite this, data gaps persist statewide, and available audits, such as Nashville's 2018 ICI waste characterization, show high landfill disposal rates for readily recoverable materials, highlighting significant untapped diversion potential.[36]

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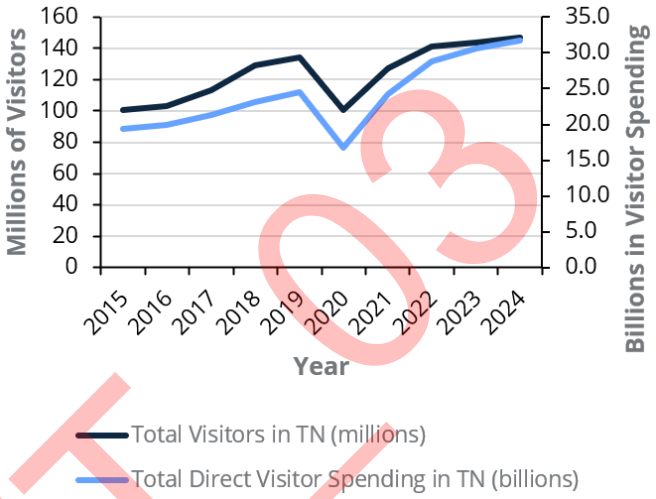
[33] (U.S. EPA 2020)
[34] (U.S. Census Bureau 2022)
[35] (IndustrySelect 2024, Bridgestone Americas Press Center 2025)
[36] (Metropolitan Government of Nashville and Davidson County 2018)

B-2.7 Tourism

Tourism is a major economic driver in Tennessee, drawing tens of millions of visitors annually to destinations such as the Great Smoky Mountains, the most visited national park in the U.S., as well as Nashville, Memphis, and historic small towns.[37] The Tennessee Department of Tourist Development (TDTD) reported a record 147 million visitors who spent $31.7 billion, averaging $87 million in daily economic activity.[38] Between 2015 and 2024, visitation rose by 46%, and rose by spending 63%, with annual increases averaging 5% and 7%. International visitors spent nearly six times more per person than domestic travelers, signaling a strong post-pandemic recovery and sustained growth (**Figure B- 1**).

Figure B- 1: Tourism Trends from 2015 to 2024



Peak tourism months, May through August and September through October, place added pressure on local solid waste management systems, requiring expanded collections and more frequent service schedules.[39] High-tourism counties like Sevier, Davidson, Shelby, Knox, and Hamilton experience sharp spikes in monthly waste tonnage. In Sevier County, which includes Gatlinburg, Pigeon Forge, and Dollywood, short-term rental cleaning alone generates an estimated 20–25 tons of waste daily, creating operational and financial challenges.[40]

Tourism adds a significant but often underrecognized burden to Tennessee's solid waste management system. **Table 12** in **Attachment C: Supplemental Data Tables** compiles estimates from multiple studies, showing wide variability in per-tourist waste generation depending on location, season, and tourism type. While high-volume destinations skew the mean, the median offers a more typical planning value. A reasonable estimate ranges from 2.5 to 4.5 pounds of waste per tourist per day, lower for outdoor recreation and higher for urban tourism, hotels, events, and festivals.

To support planning, the following model can be used: **Tourist Waste (tons) = (number of tourists x average stay in days x waste per tourist per day) ÷ 2000**. This formula helps estimate seasonal waste loads by county or attraction type and informs infrastructure proposals, grant applications, and comparisons between resident and visitor impacts. Tennessee could also conduct targeted waste audits at hotels, campgrounds, festival sites,

[37] (U.S. National Park Service 2022)
[38] (TDTD 2024a)
[39] (TDTD 2024b)
[40] (Sevier County Government 2024)

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and trailheads. These would yield region-specific data to guide recycling, composting, and litter management strategies.

Despite tourism's impact, few local or regional solid waste plans explicitly address it. Most counties lack mechanisms to attribute waste tonnage to tourism, and many hospitality businesses use private haulers, limiting visibility into volumes and diversion rates. This creates a persistent blind spot in planning, especially for peak season services, infrastructure budgeting, and public education.

Tourism is both a major economic driver and a complex challenge for Tennessee's solid waste management system. Understanding the impacts of waste and integrating them into planning is essential for maintaining service quality and meeting environmental goals.

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B-3 Financial Analysis

A modeling and analysis process was conducted to evaluate Tennessee's solid waste management system under current conditions (CY2021–2024) and through the planning period (CY2025–2035). The analysis evaluated waste flow, system capacity, costs, and anticipated future needs to support implementation of the 2035 Plan.

B-3.1 Financial Modeling and Scenario Analysis

A state-level waste flow, capacity, and cost model was developed in Microsoft Excel to assess population trends, waste generation and diversion, infrastructure and capacity, capital and operating costs, and system performance relative to planning goals. Model inputs included state and federal data, county-level needs assessments from Districts, stakeholder input collected during statewide outreach, and guidance from TDEC.

The conceptual model segmented waste flow into five primary activities: generation, collection and transport, transfer and management, processing, and disposal. U.S. Census and TDEC permit and waste volume data were used to characterize the movement of residential and non-residential materials through the solid waste management system, including consideration of private-sector diversion and interstate waste movement.

This framework was used to develop a pro forma model with six core sections: (1) Population, (2) Diversion, (3) Disposal, (4) Scenario Assumptions, (5) Facility Census, and (6) Scenario Metrics, including per capita calculations, percentage metrics, and disposal capacity.

Model Boundaries and Assumptions

The model was primarily structured at the statewide level but incorporated analysis by Grand Division, District, Region, county, and selected facility-level metrics. Baseline conditions reflect CY2021–2024, with projections extending through CY2025–2035.

Data gaps required assumptions in some areas, including residential recycling capacity at MRFs and local cost and revenue information. While all Districts provided goals and action plans, only some reported detailed cost and revenue estimates. Where available, reported unmet needs informed model inputs; otherwise, projections relied on the best available data and professional judgment.

Assumptions were informed by state and federal reports, needs assessments, statewide stakeholder input, and TDEC guidance. Key assumptions addressed population growth, waste generation and disposal volumes, disposal capacity, system costs, and stakeholder funding priorities. Solid waste-related costs were assumed to increase at a rate exceeding general inflation. A minimum system condition assumed attainment of the statewide goal to reduce per capita disposal at Class I MSW landfills and incinerators by 25%, and scenario evaluations were guided by the eight planning objectives established in the 2035 Plan.

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Scenario Analysis

Two primary scenarios were modeled using consistent assumptions for population growth and waste generation:

Baseline Scenario

The Baseline Scenario evaluated projected system conditions if current infrastructure and diversion levels generally continue through the planning period. The results indicate that Tennessee's projected 7% population growth will increase waste generation and place additional pressure on existing infrastructure. As of FY2023, reported Class I capacity ranged from 260 to 340 million cubic yards, representing approximately 30 years of disposal capacity. By FY2035, the remaining statewide capacity is estimated at approximately 205 million cubic yards, equivalent to 15–17 years of disposal capacity. However, capacity constraints are unevenly distributed, with Middle Tennessee projected to fall below 10 years of remaining capacity by FY2025, indicating a need for additional disposal, transfer, or diversion investments.

The FY2024 statewide diversion rate was estimated at 53%; however, approximately 85% of diverted material was associated with industrial diversion, which is influenced by market conditions and inconsistent reporting. Combined residential and commercial diversion was approximately 13%, indicating substantial opportunity for increased diversion.

Residential recycling remains constrained by both service availability and processing capacity. In CY2021, only 20% of municipalities reported curbside recycling programs, while residential recycling totaled approximately 229,000 tons, compared with approximately 1.3 million tons of commercial and institutional recycling and 6.3 million tons of industrial recycling and diversion. Combined residential and commercial MRF and composting capacity was estimated at approximately 450,000 to 550,000 tons per year, indicating that expansion of both collection programs and processing infrastructure would be needed to support higher diversion levels.

Capacity Investment and Growth Scenario

This scenario evaluated additional system needs associated with population and economic growth, tourism, natural disasters, diversion objectives, and regional capacity constraints. Population growth was the primary statewide driver, but impacts varied geographically, with Middle Tennessee projected to grow by 12% while West Tennessee is expected to remain relatively flat or decline. Economic growth, construction activity, tourism, and disaster debris can further increase waste volumes and place localized demands on infrastructure and services.

The model indicates that Middle Tennessee may require additional infrastructure to manage approximately 1.5 to 3.0 million tons of waste annually, depending on the success of waste reduction, reuse, and diversion efforts and the availability of regional disposal capacity. To achieve a 25% waste reduction and diversion goal for residential and commercial MSW, combined diversion capacity would need to increase from approximately 1.2 million to 2.6 million tons annually. Additional processing capacity and in-state end markets would also be needed to manage recovered materials and reduce reliance on long-distance transportation.

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Data gaps and inconsistent reporting were identified as an additional system constraint because they affect the ability to identify trends, evaluate diversion performance, and support long-term planning.

Additional Scenario Drivers

The Capacity Investment and Growth Scenario also considered economic growth, natural disasters, and tourism as factors that may create additional or localized demands beyond those associated with population growth. Employment is projected to increase by approximately 12%, or 423,000 jobs, through 2035, potentially increasing commercial and industrial waste generation and C&D waste associated with construction activity.[41] Tennessee's industrial base may also create opportunities for development of in-state end markets for recovered plastics, metals, and fiber.

Natural disasters create episodic demands for processing and disposal capacity. Tennessee has experienced increasingly frequent major events,[42] and Tropical Storm Helene generated more than six million cubic yards, or approximately 1.5 million tons, of debris in eastern Tennessee.[43] Additionally, tourism creates a different localized pressure. It accounted for an estimated 8% of residential and commercial MSW disposal during the base years, and projected growth in visitor days could add approximately 145,000 tons of MSW annually through the planning period.

Together, these factors indicate that statewide population growth alone does not fully represent future capacity needs. Regional planning should also account for economic activity, episodic disaster debris, and tourism-related waste generation.

Summary of Findings and Recommendations

Tennessee's projected population growth will increase solid waste generation, with greater impacts in tourism- and construction-heavy areas. While statewide Class I landfill capacity is expected to remain sufficient through 2035, Middle Tennessee is projected to have less than 10 years of remaining capacity in 2025. Without additional investment, transferring waste to other regions could add $20–$40 per ton, or approximately $40–$80 million annually.

Industrial activity drove 2024 diversion, with an estimated 58% recycling and organics diversion rate, while residential and commercial diversion remains constrained by limited program and infrastructure capacity, market volatility, and data gaps. Counties also report a statewide operating shortfall of $10–$20 million annually, while waste collection costs have outpaced inflation since 2017, further straining local budgets.

The modeling indicates that Tennessee will need coordinated policy, program, funding, and infrastructure adjustments over the planning period. Priority actions include:

[41] (Tennessee Department of Labor & Workforce Development 2025)
[42] (National Centers for Environmental Information 2024)
[43] (TEMA 2024)

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- Expand regional coordination and PPPs to increase program and infrastructure capacity, achieve economies of scale, diversify funding, and improve service delivery.
- Increase diversion and infrastructure capacity, including development of approximately 1.5–2.5 million tons of additional capacity for MSW and C&D recycling, organics processing, and transfer, while expanding upstream reuse, reduction, recycling, and organics programs.
- Develop in-state end markets and strengthen data systems to support recovered-material demand, reduce transportation constraints and market exposure, and provide more reliable information for statewide and regional planning.

These investments will be increasingly important as population growth, tourism, construction activity, and disaster events add financial and operational demands to Tennessee's solid waste system.

B-3.2 Contract in Lieu of Bond Exposure

An additional analysis was conducted based on December 2025 data to assess the financial risks associated with solid waste closure and post-closure liabilities to the State of Tennessee. This assessment examined potential exposure if counties or municipalities are unable to meet closure and post-closure care obligations for municipally or county-owned Class I landfills under existing CILB agreements. The analysis also evaluated potential exposure for publicly owned landfills where closure and PCC responsibilities are contractually assigned to private operators, but where the municipality or county may retain residual liability in the event of operator default. Locally owned Class III liabilities and liabilities associated with Class I landfills already in PCC were not included in the scope of analysis. The review included analysis of contract documentation, 30-day operating closure and post-closure cost estimates, and financial data for publicly owned landfills. Annual Comprehensive Financial Reports were examined to identify established liability accounts and assess each county's solid waste fund.

For counties without dedicated liability accounts, bond ratings were obtained from credit agencies, such as S&P and Moody's, and reviewed to gauge credit strength and the ability to raise funds if reserves prove insufficient. Financial, operational, and credit-based metrics were then integrated into a risk matrix to compare projected liabilities with each municipality's future financial capacity, identify counties where obligations may exceed available resources, and highlight elevated near-term risks.

Summary of Findings

The results indicate that:

- The total exposure to 30-day operating, corrective action, closure, and post-closure obligations modeled is approximately $293 million (in 2025 dollars).

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- Excluding the modeled exposure covered by counties that maintain liability accounts for closure and post-closure activities, the exposure drops to approximately $214 million.
- Considering the counties that have a positive net position in their fund balance and that could therefore use a portion of these funds to pay for closure and PCC, the net exposure drops further to approximately $182 million.
- Excluding the liabilities of counties and cities that have private contracts with operators who are responsible for closure and post-closure costs (Bradley, Rhea, Iris Glen, Loudon), the net exposure drops to approximately $91 million.

All counties without a liability account or a positive net position have strong credit ratings (AA- and above) and therefore could potentially mitigate the net exposure further.

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B-4 Funding and Contract Mechanisms for Local Governments

Local governments in Tennessee rely on a combination of funding tools and contractual structures to provide solid waste services, maintain regulatory compliance, and invest in infrastructure. These mechanisms directly influence service reliability, affordability, financial risk, and long-term system resilience. Because community size, market access, and infrastructure needs vary widely across the state, no single approach is universally applicable. Instead, successful systems intentionally combine funding sources and contract structures that reflect local conditions while meeting state regulatory requirements.

This section identifies many of the primary funding mechanisms available to Tennessee local governments; outlines state, federal, and nonprofit support programs; and describes contracting models commonly used for financial assurance for waste collection, processing, disposal, and landfill facilities.

B-4.1 Common Funding Mechanisms

Local governments may use a combination of local revenues, financing mechanisms, and external funding sources to support solid waste services, programs, and infrastructure. Common funding mechanisms are summarized in **Table B - 10** below.

Table B - 10: Common Funding Mechanisms

Funding Mechanism	Structure and Application	Key Considerations
Property and Sales Taxes	General tax revenues may support baseline solid waste operations, convenience centers, and long-term capital needs. Environmental or tourism-related revenues may also support solid waste programs where permitted.	Can provide relatively stable and predictable funding but competes with other local government priorities and may be subject to statutory or local restrictions.
User Fees and Collection Charges	Directly link service costs to users and are commonly applied to collection and disposal services. Pay-As-You-Throw systems vary charges based on the amount of waste generated.	Supports cost recovery and can encourage waste reduction but requires appropriate rate setting, billing and collection systems, administrative capacity, and public education.
Tipping Fees	Charges assessed based on the quantity of waste received at a disposal facility can support facility operations, maintenance, and capital repayment.	Provides a direct connection between facility use and revenue. Fee variability among facilities and jurisdictions can influence waste flows and complicate long-term planning and regional coordination.
Revenue from Recyclables or Energy Recovery	Includes revenue from the sale of recovered materials or energy recovery activities, such as landfill gas-to-energy projects.	Can offset system costs but may vary significantly based on commodity prices, energy markets, material quality, and contractual arrangements.
Debt Financing	Municipal bonds, lease-purchase agreements, and other financing mechanisms allow large capital projects, such as landfills, transfer stations, and processing facilities, to be financed over time.	Supports major capital investments without requiring full upfront funding but requires sufficient credit capacity, reliable revenue for repayment, and long-term financial commitments.

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Funding Mechanism	Structure and Application	Key Considerations
Public-Private Partnerships	Combine public oversight with private investment, financing, development, or operational expertise and may be used for collection services, landfills, transfer stations, MRFs, and energy recovery projects.	Can provide access to private capital and expertise and transfer certain project risks but requires careful allocation of financial, operational, regulatory, and performance responsibilities.
State Funding	Tennessee's SWMF supports grants and rebates for activities such as waste reduction, recycling equipment, organics management, convenience centers, HHW, used oil, and technical assistance.	Can reduce local costs for eligible programs and infrastructure but is subject to available funding, eligibility requirements, application cycles, matching requirements, and other program conditions.
Federal Funding	Federal grants and loans can support solid waste planning, feasibility studies, infrastructure, recycling, and resilience. Potential sources include USDA Rural Development, Housing and Urban Development Community Development Block Grants, FEMA Hazard Mitigation Assistance, and U.S. EPA grant programs.	Eligibility and eligible activities vary substantially by program and funding cycle. Federal funding may also involve competitive applications, cost-sharing, environmental review, procurement, and reporting requirements.
NGO Funding	NGOs and nonprofit organizations may provide grants, technical assistance, equipment, and other support for targeted recycling and materials management initiatives. Examples include programs offered by the Glass Recycling Foundation and The Recycling Partnership.	Often well suited to targeted material streams, pilot projects, and recycling-system improvements but may be competitive, limited in duration or geography, and dependent on specific program priorities.

Local governments are encouraged to pursue diversified funding portfolios that use a mix of funding mechanisms to balance revenue stability, affordability, and scalability, particularly in anticipation of future regulatory and infrastructure needs.

B-4.2 Contract Mechanisms

Contract mechanisms define how solid waste services are delivered, financed, and regulated. They allocate operational responsibility, financial risk, and performance accountability between public and private entities. Selecting an appropriate contract structure is essential for cost control, regulatory compliance, and service quality. Common mechanisms are summarized in **Table B - 11** below**.**

Table B - 11: Contract Mechanisms

Mechanism	Structure and Application	Key Considerations
Interlocal Agreements	Allow counties, municipalities, and other public agencies to jointly provide services or facilities under TCA §12-9-104. May support shared collection, transfer, disposal, recycling, or other regional services.	Can achieve economies of scale and share costs and resources among jurisdictions; requires clear allocation of responsibilities, costs, and governance.
Exclusive Contracts	Assign a single service provider to a defined geographic area or service type.	Simplifies oversight and supports standardized service levels and economies of scale; requires effective performance monitoring and contract controls.
Non-Exclusive Contracts	Allow multiple service providers to operate within the same jurisdiction under established terms and requirements.	Promotes competition and customer choice but can increase administrative, monitoring, and enforcement complexity.
Franchise Agreements	Grant one or more private haulers the right to provide services within a jurisdiction under specified service, pricing, reporting, and customer-protection requirements.	Maintains public control over service requirements while using private providers; effective administration requires clearly defined franchise conditions.

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Mechanism	Structure and Application	Key Considerations
Fee-for-Service Contracts	Compensate providers based on services delivered, such as households served, containers collected, or tons managed.	Provides flexibility and links payment to service volume; requires reliable service tracking, measurement, and billing.
Performance-Based Contracts	Link contractor compensation or incentives to measurable outcomes such as service reliability, contamination reduction, diversion, or customer-service standards.	Can incentivize performance and innovation; requires measurable standards, reliable data, and clearly defined remedies.
PPPs	Combine public oversight with private participation in financing, development, construction, operation, or maintenance of facilities or services.	Can provide access to private capital and expertise; requires careful allocation of financial, operational, regulatory, and performance risks.
Design-Build	Combines facility design and construction under a single contract.	Can reduce project delivery time and coordination risks; requires clear performance and design criteria at procurement.
Design-Build-Operate	Combines design and construction with long-term operation by the same entity.	Can better align facility design with long-term operating performance and lifecycle costs; creates a longer-term contractual relationship requiring strong performance provisions.
Construction Manager at Risk	Engages a construction manager during design to provide cost, constructability, and scheduling input and subsequently manage construction, typically subject to an agreed cost structure.	Can improve cost and schedule control for complex projects; requires clearly defined responsibilities and procurement procedures.
Concession Agreements	Grant a private entity rights to develop, operate, maintain, or generate revenue from a publicly controlled facility or service for a defined period.	Can transfer operational and financial responsibilities to the private sector; requires careful treatment of rates, revenue, asset condition, performance, and end-of-term obligations.
Cooperative Purchasing Agreements	Allow multiple jurisdictions to coordinate or jointly procure equipment, supplies, or services.	Can reduce procurement burden and improve purchasing power; participating entities need compatible specifications, schedules, and procurement requirements.
Open-Market Systems	Allow customers to select among eligible private service providers rather than using a single contracted provider.	Maximizes provider and customer choice but can result in fragmented service, variable pricing, overlapping collection routes, and reduced public control over service standards.
Subscription-Based Private Contracting	Residents or businesses contract directly with private haulers, with those not subscribing typically relying on available self-haul or other disposal options.	Reduces direct local-government service administration but can result in inconsistent participation, service levels, and costs.

Each mechanism presents trade-offs in cost control, service quality, administrative complexity, accountability, and allocation of risk. The appropriate approach depends on the services being provided, community goals, available public and private resources, desired level of local control, and applicable procurement and regulatory requirements.

Landfill Financial Assurance and Contract in Lieu of Bonds

State law requires landfill operators to demonstrate financial assurance sufficient to cover closure, post-closure care, 30-day operating costs, and corrective action. Under TCA §68-211-116, Tennessee allows CILBs as an alternative to traditional surety bonds or other financial assurance instruments for landfills owned or controlled by local governments.

A CILB is a legally binding agreement between the landfill owner/operator and a local government or solid waste authority that commits the public entity to ensure closure and

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post-closure obligations are met. This mechanism may be appropriate where the local government:

- Owns the landfill or controls its operation through a contractual agreement;
- Has the financial capacity and legal authority to assume closure obligations; or
- Seeks to reduce bonding costs or address limited access to commercial surety markets.

When used, the contract must clearly define responsibilities, funding mechanisms, and contingency provisions to ensure compliance with regulatory requirements. While this approach can offer cost savings and flexibility, it also shifts long-term financial risk to the public entity and should be evaluated carefully.

However, a CILB does not eliminate landfill financial assurance requirements; rather, it transfers responsibility from a third-party financial instrument to the local government itself, as authorized under TCA §68-211-116. If a county or municipality fails to meet its contractual obligations, the obligation to fund closure and post-closure care remains and may require the use of public revenues or alternative financial assurance mechanisms to maintain permit compliance. As a result, this option is most appropriate for jurisdictions with stable revenues, clear operational control, and a thorough understanding of the long-term financial and legal commitments being assumed.

B-4.3 Funding Gaps and Strategic Considerations

Despite the availability of multiple funding and contracting tools, many Tennessee communities, particularly small and rural jurisdictions, continue to face revenue constraints, rising costs, and infrastructure investment barriers. Addressing these challenges will require greater use of regional collaboration, state and federal programs, innovative contracting structures, and long-term financial planning.

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B-5 Review of Technologies

A technology review was conducted in support of the development of TDEC's 2035 Plan to evaluate safe, proven, and cost-effective approaches that could support Tennessee's current and future solid waste management needs. The review considered existing and emerging waste diversion and disposal technologies within Tennessee, nationwide, and globally, including recycling, composting, and energy recovery.

B-5.1 Solid Waste Technology Screening

The analysis began with a broad review of solid waste management technologies and systems, which were categorized by their primary role in the solid waste management system. Technologies were initially screened based on maturity, market presence, and alignment with Tennessee's solid waste management objectives. Maturity considered the stage of technology development and commercial deployment, while market presence considered the extent of existing implementation. Alignment considered the potential for each technology to support Tennessee's priorities for disposal capacity, materials processing and market development, organics diversion, data and performance, problematic or hard-to-manage wastes, and disaster debris management.

Following the initial screening, nine technologies were selected for further evaluation:

- Convenience centers, transfer stations, and MRFs;
- Composting and AD;
- WTE and beneficial ash reuse; and
- Gasification/pyrolysis and molecular recycling.

Gasification/pyrolysis and molecular recycling were included despite their more emergent status because of their potential applicability to Tennessee's solid waste system. Problematic or hard-to-manage wastes, emerging waste streams, and disaster debris management technologies were also considered qualitatively.

B-5.2 Technology Assessment

Selected technologies were evaluated using two primary considerations: performance and financial and economic feasibility. Performance criteria considered scalability, facility footprint, diversion potential, and applicable material streams. Financial and economic criteria considered typical tipping fees, capital costs (CAPEX), and operating costs (OPEX). The criteria were applied consistently to compare technologies with similar functions and identify relative opportunities and limitations within Tennessee's solid waste management system.

Quantitative and qualitative information was used to develop Low, Medium, and High ratings for the applicable assessment criteria. The results provide a comparative assessment rather than a determination that an individual technology is appropriate for every location or application. Actual feasibility depends on factors such as waste quantity

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and composition, available infrastructure, facility scale, markets, transportation requirements, regulatory requirements, and local and regional financial conditions. The results of the comparative assessment of the selected technologies are summarized in **Table B - 12**, including performance and financial and economic considerations.

The assessment demonstrates that technologies differ substantially in scalability, diversion potential, material applicability, and cost. Established collection, transfer, recycling, and organics systems generally provide broader near-term applicability, while capital-intensive and emerging technologies may be most appropriate where sufficient waste volumes, markets, infrastructure, and economic conditions support implementation. **Table B - 13** further summarizes the diversion potential of the selected technologies by major material stream.

The material-stream assessment further demonstrates that no single technology addresses all components of Tennessee's waste stream. An integrated system combining collection and transfer infrastructure with recycling, organics processing, disposal, and other appropriate technologies provides greater flexibility to address different materials and regional conditions.

B-5.3 Qualitative Assessment

To supplement the quantitative assessment criteria, qualitative benchmarking was performed to assess the state of practice of various technologies in Tennessee and the southeastern U.S. In addition to the nine selected technologies, qualitative benchmarking of problematic or hard-to-manage waste, emerging waste streams, and disaster debris management technologies was performed.

Materials Handling Facilities. Three types of intermediary materials-handling facilities for waste processing were evaluated. These facilities incorporate various combinations of mechanical sorting, separation, consolidation, and compaction techniques. Convenience centers are local drop-off sites for household trash, recyclables, and sometimes bulky or HHW. Transfer stations are key components of Tennessee's "hub-and-spoke" waste management model and improve transportation efficiency, lower hauling costs, and support centralized infrastructure such as landfills, MRFs, and organics diversion facilities. MRFs are specialized recycling facilities that receive, separate, and prepare recyclable materials from waste or source-separated recycling streams for marketing to end-users.

Organics Diversion. As Tennessee Regions, local governments, and private sector partners work to expand diversion and reduce landfill dependency, organics processing technologies play a critical role in managing food scraps, yard trimmings, agricultural residues, and other biodegradable materials. Composting is a controlled aerobic process that transforms organic waste such as food scraps, yard trimmings, and agricultural residues into a nutrient-rich product. Anaerobic digestion is a biological process that converts organic materials into renewable energy and nutrient-rich byproducts in the absence of oxygen.

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Table B - 12: Technology Assessment

Technology	Scalability	Facility Footprint Efficiency	Diversion Potential	Material Streams Accepted	Average Tipping Fee	CAPEX	OPEX
Convenience Center	High	High	Med	High	Low	Low	Low
Transfer Station	High	High	Low	High	Med	Med	Med
MRFs	Low	High	High	Med	Med	High	Med
Composting	High	Med	High	Med	Low	Med	Med
Anaerobic Digestion	Med	High	Med	Low	Med	High	Med
WTE	Low	High	High	High	High	High	Med
Beneficial Ash Reuse	Low	High	Low	Low	Med	High	Med
Gasification / Pyrolysis	Low	High	Low	Low	High	High	High
Molecular Recycling	Low	High	Low	Low	High	High	High

Notes:

1. Green shading (Materials Handling Facilities, Regional Established Technologies)
2. Red shading (Organics Management, Regional Established Technologies)
3. Blue shading (WTE & Ash Reuse, Regional Established Technologies)
4. Orange shading (Other, Global Emergent Technology)

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Table B - 13: Technology Diversion Potential by Major Material Stream

Technology	Paper / Cardboard	Plastic	Yard Waste	Food Waste	Other Organics	Metal	Glass	Special Waste	Storm Debris / C&D / Industrial
Convenience Centers	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Transfer Stations	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MRFs	Yes	Yes	No	No	No	Yes	Yes	No	Yes
Composting	Yes	No	Yes	Yes	Yes	No	No	No	Yes
Anaerobic Digestion	Yes	No	Yes	Yes	Yes	No	No	No	Yes
WTE	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Beneficial Ash Reuse	No	No	No	No	No	No	No	No	Yes
Gasification / Pyrolysis	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes
Molecular Recycling	No	Yes	No	No	No	No	No	No	No

Notes:

1. Green shading (Materials Handling Facilities, Regional Established Technologies)
2. Red shading (Organics Management, Regional Established Technologies)
3. Blue shading (WTE & Ash Reuse, Regional Established Technologies)
4. Orange shading (Other, Global Emergent Technology)

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WTE and Ash Management. WTE technologies recover energy from solid waste in the form of steam, heated water, or electricity. WTE is a well-established technology that produces energy while enabling the recovery of metals and other materials. Emissions are managed through advanced control systems, and the resulting ash, both bottom ash and fly ash, can be landfilled, stockpiled, or beneficially reused. Ash reuse is an increasingly important consideration, with applications in construction materials such as concrete, road base, and cement additives, offering opportunities to reduce landfill use and support circular economy goals.

Other Waste Conversion Technologies. Other technologies with potential to process waste in Tennessee include waste conversion technologies that convert waste into energy and saleable byproducts through the application of biological, thermal, and mechanical processes. Other than composting, AD, and WTE, these methods are largely emergent and not used on a broad scale to dispose of MSW. Gasification and pyrolysis are advanced thermal technologies that convert waste into simpler molecular forms using high heat in oxygen-limited environments, producing outputs such as syngas and biochar. Molecular recycling refers to emerging processes that break down generally low-value waste plastics into their original molecular building blocks.

Problematic or Hard-to-Manage Wastes. Problematic or hard-to-manage wastes are materials that pose unique challenges because of their environmental, health, or economic effects. These materials are often produced in small amounts but are expensive to manage and can pose risks to human health or the environment if not handled properly. Problematic waste includes household BOPAE and tires. Emerging waste streams, including spent electric vehicle batteries, end-of-life solar photovoltaic panels, and retired wind turbine blades, are expected to grow significantly in the coming decades, creating unique management challenges.

Disaster Debris Management. As severe storms leave large quantities of C&D, vegetative debris, sediment, and other waste in their wake, it is critical to leverage technology to manage disaster debris more effectively. Debris management requires specialized equipment at multiple stages, from initial clearing and handling of various debris types to transfer, processing, and disposal. Mulching and grinding have become essential components of disaster debris management, especially in the aftermath of severe weather events. Air curtain incineration is a controlled method of incinerating waste material with the addition of forced air to reduce emissions, usually in the field as part of temporary operations.

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B-5.4 Technology Assessment Conclusions

The assessment highlights clear opportunities for investment and innovation within Tennessee's solid waste system. High- and medium-priority technologies offer actionable pathways for improving diversion, enhancing infrastructure, and supporting environmental goals. While low-priority technologies may require further development or validation, they represent emerging solutions that could contribute to long-term progress. Overall, the

scoring framework provides a valuable foundation for data-informed decision-making and future program development.

Convenience Centers, Transfer Stations, and Composting: High Priority. Convenience centers enhance the logistics of waste collection and transport, especially in rural areas, and provide opportunities for source separation of materials for diversion. Transfer stations significantly improve the logistics of waste transport, especially as average transport distances grow between generation and end use, and create opportunities for co-located infrastructure to offer additional materials management services. Due to its relative simplicity and scalability, composting is increasingly used by public solid waste managers to divert waste organics that make up approximately 30 to 40% of the disposal stream.

MRFs, Anaerobic Digestion, and WTE: Medium Priority. MRFs are the backbone infrastructure for large-scale residential and commercial recycling of traditional commodity recyclables and benefit significantly from economies of scale. Advancements in AD technology have increased its scalability and modular ability, providing an opportunity to divert certain organic waste streams that composting systems cannot. WTE is most common in highly populated areas with limited remaining MSW landfill airspace and could be a potential avenue to increase landfill life in Tennessee, especially in Middle Tennessee.

Beneficial Ash Reuse, Gasification/Pyrolysis, and Molecular Recycling: Low Priority. Beneficial use of ash residuals and similar materials is being explored to reduce reliance on landfills. Gasification, pyrolysis, and waste conversion are broadly emerging technologies and have not yet been successfully deployed at a large scale for processing MSW in the U.S. Molecular or "advanced" recycling offers an approach to recycling hard-to-recycle plastics as an alternative to conventional methods, and the technology is used at Eastman Chemical's Kingsport plant.

The assessment does not prescribe a single technology or approach for statewide implementation. Rather, the results provide a framework for evaluating investments based on regional needs, waste streams, system capacity, economics, and technology maturity. Overall, the assessment supports continued investment in proven collection, transfer, recycling, and organics infrastructure while maintaining flexibility to evaluate emerging technologies as they become technically and economically viable.

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B-6 References

Bridgestone Americas Press Center. 2025. *Bridgestone Americas Announces Business Footprint Optimization and Closure of its LaVergne Plant.* https://www.bridgestoneamericas.com/en/press-release-details.en.2025.bridgestone-announces-business-footprint-optimization.

Federal Reserve Bank of St. Louis. 2023. *Median Household Income in Tennessee (MEHOINUSTNA646N).* https://fred.stlouisfed.org/series/MEHOINUSTNA646N.

IndustrySelect. 2024. *Top 10 Manufacturing Companies in Tennessee.* https://www.industryselect.com/blog/top-10-manufacturing-companies-in-tennessee.

Metropolitan Government of Nashville and Davidson County. 2018. "Metro Nashville and Davidson County, TN Waste Stream and Recycling Characterization Study." https://www.nashville.gov/departments/waste-services].

National Centers for Environmental Information. 2024. Billion-Dollar Weather and Climate Disasters: Tennessee State Summary. https://www.ncei.noaa.gov/access/billions/state-summary/TN.

Safford, J.M. 1869. The Geology of Tennessee. Nashville, TN: S.C. Mercer.

Sevier County Government. 2024. Update To Sevier County Solid Waste Plan and New Short-Term Rental Household Waste Sites. https://seviercountytn.gov/news_detail_T2_R36.php.

TDEC. 2025a. Notice of Rulemaking Hearing – May 9, 2025. https://www.tn.gov/content/dam/tn/environment/solid-waste/documents/public-notices/rulemaking/ppo_sw_rulemaking-comprehensive-amendments.pdf.

Tennessee Department of Labor & Workforce Development. 2025. Tennessee's Economy. https://www.tn.gov/content/dam/tn/workforce/documents/majorpublications/reports-02/Tennessee-Economy-2024-2025.pdf.

TDTD. 2024a. 2023 Economic Impact of Travel Report. https://www.tn.gov/tourism/news/2024/7/23/tennessee-tourism-breaks-30b-in-visitor-spending-in-2023-creating-a-record-tax-benefit-for-tennesseans.html.

—. 2024b. 2024 Tennessee Visitor Profile. https://tdtdfiles.egnyte.com/fl/PHjWF4g3dMYb.

TEMA. 2024. Tennessee Disaster Dashboard. https://acdisaster.maps.arcgis.com/apps/dashboards/a052d249c59b4798a6b74c707632cb00.

U.S. Census Bureau. 2023d. 2023 Population Estimates by Age and Sex. https://www.census.gov/newsroom/press-releases/2024/population-estimates-age-sex.html.

—. 2022. Labor Force Statistics. https://www.census.gov/topics/employment/labor-force.html.

—. 2023b. American Community Survey Table B25010: Average Household Size of Occupied Housing Units by Tenure. https://data.census.gov/table?q=b25010.

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—. 2023a. Profile of Owners and Renters. https://www.census.gov/library/visualizations/2024/demo/owners-and-renters.html.

—. 2023c. Selected Housing Characteristics (Table S2502). https://data.census.gov/table/ACSST5Y2023.S2502.

—. 2025. Annual estimates of the resident population for states: April 1, 2010 to July 1, 2025 (Population Estimates Program). https://www.census.gov/programs-surveys/popest.html.

U.S. Department of Justice. 2025. Language Access Information. https://www.justice.gov/ust/language-access-information.

U.S. EPA. 2020. Advancing Sustainable. https://www.epa.gov/sites/default/files/2021-01/documents/2018_ff_fact_sheet_dec_2020_fnl_508.pdf.

U.S. National Park Service. 2022. Visitor Use Statistics – Great Smoky Mountains National Park. https://www.nps.gov/grsm/learn/management/statistics.htm.

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ATTACHMENT C
Supplemental Data Tables

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Table C-1a. Projected Population Growth (2015–2035) – Grand Division and State Summary

Region of Interest	2015	2020	2025	2030*	2035*	Average Annual Growth Rate	Growth Rate 2015-2025	Growth Rate 2025-2035*	Total Growth Rate
East - Total	2,384,690	2,477,169	2,589,177	2,662,599	2,709,720	0.7%	8.6%	4.7%	13.6%
East - Average	72,263	75,066	78,460	80,685	82,113	0.7%	8.6%	4.7%	13.6%
Middle - Total	2,641,824	2,893,203	3,112,067	3,325,500	3,522,997	1.7%	17.8%	13.2%	33.4%
Middle - Average	64,435	70,566	75,904	81,110	85,927	1.7%	17.8%	13.2%	33.4%
West - Total	1,564,656	1,557,532	1,541,489	1,525,658	1,506,191	-0.2%	-1.5%	-2.3%	-3.7%
West - Average	74,507	74,168	73,404	72,650	71,723	-0.2%	-1.5%	-2.3%	-3.7%
State - Total	**6,591,170**	**6,927,904**	**7,242,733**	**7,513,757**	**7,738,908**	**0.9%**	**9.9%**	**6.9%**	**17.4%**
State - Average	**69,381**	**72,925**	**76,239**	**79,092**	**81,462**	**0.9%**	**9.9%**	**6.9%**	**17.4%**

Table C-1b. Projected Population Growth (2015–2035) – East Grand Division by County

County	Classification	2015	2020	2025	2030*	2035*	Average Growth Rate	Growth Rate 2015-2025	Growth Rate 2025-2035*	Total Growth Rate
Anderson	Suburban	75,456	77,327	80,627	82,687	84,058	0.6%	6.9%	4.3%	11.4%
Bledsoe	Rural	14,601	14,955	15,248	15,800	16,201	0.6%	4.4%	6.3%	11.0%
Blount	Urban	126,954	135,656	144,400	150,249	154,647	1.1%	13.7%	7.1%	21.8%
Bradley	Suburban	103,774	108,831	113,913	118,555	122,486	0.9%	9.8%	7.5%	18.0%
Campbell	Suburban	39,772	39,306	39,385	38,764	37,908	-0.2%	-1.0%	-3.8%	-4.7%
Carter	Suburban	56,375	56,386	55,741	54,341	52,794	-0.3%	-1.1%	-5.3%	-6.4%
Claiborne	Rural	31,555	32,066	32,413	32,127	31,499	0.0%	2.7%	-2.8%	-0.2%
Cocke	Suburban	35,138	36,043	37,242	37,357	37,013	0.3%	6.0%	-0.6%	5.3%
Cumberland	Suburban	58,217	31,372	65,861	68,249	68,793	0.9%	13.1%	4.5%	18.2%
Grainger	Rural	22,848	23,569	24,579	24,807	24,769	0.4%	7.6%	0.8%	8.4%
Greene	Suburban	68,586	70,348	72,656	73,542	73,285	0.3%	5.9%	0.9%	6.9%
Hamblen	Suburban	63,353	64,542	66,340	67,885	69,176	0.5%	4.7%	4.3%	9.2%
Hamilton	Urban	353,690	367,891	385,843	401,714	414,689	0.9%	9.1%	7.5%	17.2%
Hancock	Rural	6,577	6,626	6,810	6,677	6,483	-0.1%	3.5%	-4.8%	-1.4%
Hawkins	Suburban	56,370	56,721	58,537	58,560	57,815	0.1%	3.8%	-1.2%	2.6%
Jefferson	Suburban	53,011	54,917	58,783	60,935	61,624	0.8%	10.9%	4.8%	16.2%
Johnson	Rural	17,842	17,994	18,008	17,692	17,174	-0.2%	0.9%	-4.6%	-3.7%
Knox	Urban	451,297	480,530	508,654	530,212	550,368	1.1%	12.7%	8.2%	22.0%
Loudon	Suburban	50,916	55,136	61,596	65,897	67,778	1.7%	21.0%	10.0%	33.1%
Marion	Rural	28,397	28,905	29,265	29,269	29,909	0.1%	3.1%	-0.9%	2.2%
McMinn	Suburban	52,502	53,344	55,752	56,845	57,357	0.5%	6.2%	2.9%	9.2%
Meigs	Rural	11,804	12,809	13,769	14,348	14,683	1.2%	16.7%	6.6%	24.4%
Monroe	Suburban	45,625	46,399	48,951	49,983	49,855	0.5%	7.3%	1.9%	9.3%
Morgan	Rural	21,494	21,050	21,091	20,579	19,931	-0.4%	-1.9%	-5.5%	-7.3%
Polk	Rural	16,769	17,567	18,244	18,605	18,687	0.6%	8.8%	2.4%	11.4%
Rhea	Rural	32,373	33,287	33,948	34,138	34,089	0.3%	4.9%	0.4%	5.3%
Roane	Suburban	52,770	53,664	55,607	55,734	55,149	0.2%	5.4%	-0.8%	4.5%
Scott	Rural	21,893	21,876	21,975	21,754	21,394	-0.1%	0.4%	-2.6%	-2.3%
Sevier	Suburban	95,417	98,865	101,026	104,174	106,963	0.6%	5.9%	5.9%	12.1%
Sullivan	Urban	156,199	158,244	164,002	167,076	167,680	0.4%	5.0%	2.2%	7.4%
Unicoi	Rural	17,819	17,873	17,613	17,345	16,947	-0.2%	-1.2%	-3.8%	-4.9%
Union	Rural	19,159	19,845	20,745	20,991	20,939	0.5%	8.3%	0.9%	9.3%
Washington	Urban	126,137	133,225	140,553	145,708	148,477	0.9%	11.4%	5.6%	17.7%

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Table C-1. Projected Population Growth (2015–2035)

Table C-1c. Projected Population Growth (2015–2035) – Middle Grand Division by County

County	Classification	2015	2020	2025	2030*	2035*	Average Growth Rate	Growth Rate 2015-2025	Growth Rate 2025-2035*	Total Growth Rate
Bedford	Suburban	46,948	50,396	54,010	57,365	60,790	1.5%	15.0%	12.6%	29.5%
Cannon	Rural	13,740	14,561	15,075	15,393	15,518	0.7%	9.7%	2.9%	12.9%
Cheatham	Suburban	39,593	41,090	42,603	43,436	43,827	0.5%	7.6%	2.9%	10.7%
Clay	Rural	7,663	7,564	7,499	7,281	7,055	-0.4%	-2.1%	-5.9%	-7.9%
Coffee	Suburban	54,093	58,145	61,896	65,179	68,309	1.3%	14.4%	10.4%	26.3%
Davidson	Urban	679,793	716,095	728,443	762,912	797,342	0.9%	7.2%	9.5%	17.3%
DeKalb	Rural	19,292	20,191	21,727	22,647	23,249	1.0%	12.6%	7.0%	20.5%
Dickson	Suburban	51,334	54,453	57,739	60,389	62,443	1.1%	12.5%	8.2%	21.6%
Fentress	Rural	17,965	18,534	19,687	19,922	19,762	0.5%	9.6%	0.4%	10.0%
Franklin	Suburban	41,343	42,812	44,787	45,732	46,235	0.6%	8.3%	3.2%	11.8%
Giles	Rural	28,973	30,344	30,757	30,979	31,168	0.4%	6.2%	1.3%	7.6%
Grundy	Rural	13,337	13,548	13,743	13,590	13,352	0.0%	3.0%	-2.9%	0.1%
Hickman	Rural	24,373	24,970	25,688	25,788	25,624	0.3%	5.4%	-0.3%	5.1%
Houston	Rural	8,124	8,305	8,181	8,095	8,014	-0.1%	0.7%	-2.0%	-1.4%
Humphreys	Rural	18,157	18,996	19,372	19,587	19,611	0.4%	6.7%	1.2%	8.0%
Jackson	Rural	11,534	11,631	12,180	12,298	12,190	0.3%	5.6%	0.1%	5.7%
Lawrence	Suburban	42,592	44,179	46,311	47,496	48,451	0.7%	8.7%	4.6%	13.8%
Lewis	Rural	11,875	12,607	13,172	13,410	13,524	0.7%	10.9%	2.7%	13.9%
Lincoln	Suburban	33,609	35,338	36,570	37,327	37,876	0.6%	8.8%	3.6%	12.7%
Macon	Rural	23,076	25,269	27,378	29,126	30,684	1.7%	18.6%	12.1%	33.0%
Marshall	Suburban	31,590	34,472	37,788	40,356	42,329	1.7%	19.6%	12.0%	34.0%
Maury	Suburban	87,425	101,836	116,119	128,574	140,086	3.0%	32.8%	20.6%	60.2%
Montgomery	Urban	192,398	221,309	251,815	279,340	306,526	3.0%	30.9%	21.7%	59.3%
Moore	Rural	6,261	6,466	6,795	6,863	6,900	0.5%	8.5%	1.6%	10.2%
Overton	Rural	22,067	22,587	23,336	23,605	23,660	0.4%	5.8%	1.4%	7.2%
Perry	Rural	7,852	8,386	8,952	9,255	9,398	1.0%	14.0%	5.0%	19.7%
Pickett	Rural	5,139	4,999	5,048	4,946	4,837	-0.3%	-1.8%	-4.2%	-5.9%
Putnam	Suburban	75,074	80,078	85,418	89,465	92,582	1.2%	13.8%	8.4%	23.3%
Robertson	Suburban	68,867	72,962	77,700	81,003	84,087	1.1%	13.1%	8.2%	22.4%
Rutherford	Urban	298,197	343,302	388,909	432,774	473,052	2.9%	30.4%	21.6%	58.6%
Sequatchie	Rural	14,641	15,847	17,603	18,551	19,220	1.6%	20.2%	9.2%	31.3%
Smith	Rural	19,308	19,966	20,715	20,956	21,134	0.5%	7.3%	2.0%	9.5%
Stewart	Rural	13,187	13,709	14,231	14,418	14,426	0.5%	7.9%	1.4%	9.4%
Sumner	Suburban	175,326	197,420	215,234	232,956	247,339	2.1%	22.8%	14.9%	41.1%
Trousdale	Rural	8,051	11,634	12,512	13,025	13,520	3.4%	55.4%	8.1%	67.9%
Van Buren	Rural	5,695	6,175	6,604	6,825	6,973	1.1%	16.0%	5.6%	22.4%
Warren	Suburban	40,262	41,059	42,888	43,888	44,491	0.5%	6.5%	3.7%	10.5%
Wayne	Rural	16,767	16,225	16,112	15,962	15,203	-0.5%	-3.9%	-5.6%	-9.3%
White	Rural	26,342	27,446	28,569	29,216	29,683	0.6%	8.5%	3.9%	12.7%
Williamson	Urban	211,605	249,616	277,193	304,573	333,948	2.9%	31.0%	20.5%	57.8%
Wilson	Urban	128,536	148,651	171,708	191,267	208,579	3.1%	33.6%	21.5%	62.3%

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Table C-1d. Projected Population Growth (2015–2035) – West Grand Division by County

County	Classification	2015	2020	2025	2030*	2035*	Average Growth Rate	Growth Rate 2015-2025	Growth Rate 2025-2035*	Total Growth Rate
Benton	Rural	16,220	15,853	15,837	15,453	14,998	-0.4%	-2.4%	-5.3%	-7.5%
Carroll	Rural	27,982	28,428	28,559	28,531	28,374	0.1%	2.1%	-0.7%	1.4%
Chester	Rural	17,123	17,385	17,741	17,812	17,774	0.2%	3.6%	0.2%	3.8%
Crockett	Rural	14,586	13,905	13,818	13,664	13,506	-0.4%	-5.3%	-2.3%	-7.4%
Decatur	Rural	11,600	11,433	11,549	11,435	11,239	-0.2%	-0.4%	-2.7%	-3.1%
Dyer	Suburban	37,753	36,709	36,105	35,381	34,571	-0.4%	-4.4%	-4.3%	-8.4%
Fayette	Suburban	39,280	41,865	44,948	46,519	47,361	1.0%	14.4%	5.4%	20.6%
Gibson	Suburban	49,329	50,447	51,352	52,022	52,678	0.3%	4.1%	2.6%	6.8%
Hardeman	Rural	25,817	25,438	25,028	24,115	23,176	-0.5%	-3.1%	-7.4%	-10.2%
Hardin	Rural	25,754	26,958	27,405	27,921	27,505	0.3%	6.4%	0.4%	6.8%
Haywood	Rural	18,036	17,825	17,222	16,586	15,857	-0.6%	-4.5%	-7.9%	-12.1%
Henderson	Rural	28,078	27,831	27,958	27,792	27,479	-0.1%	-0.4%	-1.7%	-2.1%
Henry	Rural	32,127	32,146	32,439	32,267	31,864	0.0%	1.0%	-1.8%	-0.8%
Lake	Rural	7,602	6,985	6,376	6,051	5,754	-1.2%	-16.1%	-9.8%	-24.3%
Lauderdale	Rural	26,903	25,125	24,139	22,937	21,671	-1.0%	-10.3%	-10.2%	.19.4
Madison	Suburban	97,569	98,834	99,089	98,070	96,436	-0.1%	1.6%	-2.7%	-1.2%
McNairy	Rural	25,864	25,858	26,089	26,023	25,794	0.0%	0.9%	-1.1%	-0.3%
Obion	Rural	30,561	30,775	30,207	29,666	28,998	-0.3%	-1.2%	-4.0%	-5.1%
Shelby	Urban	937,067	929,788	911,049	900,267	889,457	-0.3%	-2.8%	-2.4%	-5.1%
Tipton	Suburban	61,533	61,047	62,044	61,955	61,267	0.0%	0.8%	-1.3%	-4.0%
Weakley	Rural	33,872	32,897	32,535	31,491	30,432	-0.5%	-4.0%	-6.5%	-10.2%

Notes:

1. "*" Indicates the population or growth rate is projected.
2. U.S. Census Bureau. n.d. Explore Census Data. https://data.census.gov/
3. Counties are classified by the following criteria: Urban = populations > 115,000, Suburban = populations from 35,001 to 115,000, Rural = populations 35,000 or fewer.

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Table C-2a. Projected Population Density Growth (2015–2035) – Grand Division and State Summary

Region of Interest	Area (square miles)	2015	2020	2025	2030*	2035*	Average Annual Growth Rate	Total Growth Rate
East - Total	13,298	7,837	8,061	8,337	8,516	8,626	0.5%	10.1%
East - Average	403	237	244	2,533	258	261	0.5%	10.1%
Middle - Total	17,278	7,453	7,959	8,387	8,795	9,168	1.2%	23.0%
Middle - Average	421	182	194	205	215	224	1.2%	23.0%
West - Total	10,656	2,483	2,467	2,444	2,418	2,385	-0.2%	-3.9%
West - Average	507	118	117	116	115	114	-0.2%	-3.9%
State - Total	**41,233**	**17,772**	**18,487**	**19,168**	**19,728**	**20,180**	**0.7%**	**13.5%**
State - Average	**434**	**187**	**195**	**202**	**208**	**212**	**0.7%**	**13.5%**

Table C-2b. Projected Population Density Growth (2015–2035) – East Grand Division by County

County	Classification	Area (square miles)	2015	2020	2025	2030*	2035*	Average Annual Growth Rate	Total Growth Rate
Anderson	Suburban	337.2	224	229	239	245	249	0.6%	11.4%
Bledsoe	Rural	406.6	36	37	38	39	40	0.6%	11.0%
Blount	Urban	558.8	227	243	258	269	277	1.1%	21.8%
Bradley	Suburban	328.8	316	331	346	361	373	0.9%	18.0%
Campbell	Suburban	480.2	83	82	82	81	79	-0.2%	-4.7%
Carter	Suburban	341.3	165	165	163	159	155	-0.3%	-6.4%
Claiborne	Rural	434.6	73	74	75	74	72	0.0%	-0.2%
Cocke	Suburban	436.1	81	83	85	86	85	0.3%	5.3%
Cumberland	Suburban	681.3	85	90	97	100	101	0.9%	18.2%
Grainger	Rural	280.6	81	84	88	88	88	0.4%	8.4%
Greene	Suburban	622.2	110	113	117	118	118	0.3%	6.9%
Hamblen	Suburban	161.2	393	400	412	421	429	0.5%	9.2%
Hamilton	Urban	542.2	652	679	712	741	765	0.9%	17.2%
Hancock	Rural	222.3	30	30	31	30	29	-0.1%	-1.4%
Hawkins	Suburban	487.1	116	116	120	120	119	0.1%	2.6%
Jefferson	Suburban	275.1	193	200	214	222	224	0.8%	16.2%
Johnson	Rural	298.4	60	60	60	59	58	-0.2%	-3.7%
Knox	Urban	508.3	888	945	1,001	1,043	1,083	1.1%	22.0%
Loudon	Suburban	229.3	222	240	269	287	296	1.7%	33.1%
Marion	Rural	498.3	57	58	59	59	58	0.1%	2.2%
McMinn	Suburban	430.1	122	124	130	132	133	0.5%	9.2%
Meigs	Rural	195.1	60	66	71	74	75	1.2%	24.4%
Monroe	Suburban	635.8	72	73	77	79	78	0.5%	9.2%
Morgan	Rural	522.2	41	40	40	39	38	-0.4%	-7.3%
Polk	Rural	434.6	39	40	42	43	43	0.6%	11.4%
Rhea	Rural	315.5	103	106	108	108	108	0.3%	4.5%
Roane	Suburban	360.8	146	149	154	154	153	0.2%	4.5%
Scott	Rural	532.3	41	41	41	41	40	-0.1%	-2.3%
Sevier	Suburban	592.5	161	167	171	176	181	0.6%	12.1%
Sullivan	Urban	413.4	378	383	397	404	406	0.4%	7.4%
Unicoi	Rural	186.1	96	96	95	93	91	-0.2%	-4.9%
Union	Rural	223.6	86	89	93	94	94	0.5%	9.3%
Washington	Urban	326.5	386	408	430	446	455	0.9%	17.7%

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Table C-2c. Projected Population Density Growth (2015–2035) – Middle Grand Division by County

County	Classification	Area (square miles)	2015	2020	2025	2030*	2035*	Average Annual Growth Rate	Total Growth Rate
Bedford	Suburban	473.6	99	106	114	121	128	1.5%	29.5%
Cannon	Rural	265.6	52	55	57	58	58	0.7%	12.9%
Cheatham	Suburban	302.5	131	136	141	144	145	0.5%	10.7%
Clay	Rural	236.5	32	32	32	31	30	-0.4%	-7.9%
Coffee	Suburban	429.0	126	136	144	152	159	1.3%	26.3%
Davidson	Urban	503.7	1,350	1,422	1,446	1,515	1,583	0.9%	17.3%
DeKalb	Rural	304.4	63	66	71	74	76	1.0%	20.5%
Dickson	Suburban	489.9	105	111	118	123	127	1.1%	21.6%
Fentress	Rural	498.6	36	37	39	40	40	0.5%	10.0%
Franklin	Suburban	554.5	75	77	81	82	83	0.6%	11.8%
Giles	Rural	610.9	47	50	50	51	51	0.4%	7.6%
Grundy	Rural	360.4	37	38	38	38	37	0.0%	0.1%
Hickman	Rural	312.5	40	41	42	42	42	0.3%	5.1%
Houston	Rural	200.3	41	41	41	40	40	-0.1%	-1.4%
Humphreys	Rural	530.8	34	36	36	37	37	0.4%	8.0%
Jackson	Rural	308.8	37	38	39	40	39	0.3%	5.7%
Lawrence	Suburban	617.1	69	72	75	77	79	0.7%	13.8%
Lewis	Rural	282.1	42	45	47	48	48	0.7%	13.9%
Lincoln	Suburban	570.3	59	62	64	65	66	0.6%	12.7%
Macon	Rural	307.1	75	82	89	95	100	1.7%	33.0%
Marshall	Suburban	375.5	84	92	101	107	113	1.7%	34.0%
Maury	Suburban	613.1	143	166	189	210	228	3.0%	60.2%
Montgomery	Urban	539.2	357	410	467	518	569	3.0%	59.3%
Moore	Rural	129.2	48	50	53	53	53	0.5%	10.2%
Overton	Rural	433.5	51	52	54	54	55	0.4%	7.2%
Perry	Rural	414.8	19	20	22	22	23	1.0%	19.7%
Pickett	Rural	163.0	32	31	31	30	30	-0.3%	-5.9%
Putnam	Suburban	401.1	187	200	213	223	231	1.2%	23.3%
Robertson	Suburban	476.3	144	153	163	170	177	1.1%	22.4%
Rutherford	Urban	619.3	482	554	628	699	764	2.9%	58.6%
Sequatchie	Rural	265.9	55	60	66	70	72	1.6%	31.3%
Smith	Rural	314.3	61	64	66	67	67	0.5%	9.5%
Stewart	Rural	459.8	29	30	31	31	31	0.5%	9.4%
Sumner	Suburban	529.3	331	373	407	440	467	2.1%	41.1%
Trousdale	Rural	114.3	70	102	109	114	118	3.4%	67.9%
Van Buren	Rural	273.4	21	23	24	25	26	1.1%	22.4%
Warren	Suburban	432.7	93	95	99	101	103	0.5%	10.5%
Wayne	Rural	734.1	23	22	22	21	21	-0.5%	-9.3%
White	Rural	376.7	70	73	76	78	79	0.6%	12.7%
Williamson	Urban	582.9	363	428	476	523	573	2.9%	57.8%
Wilson	Urban	570.9	225	260	301	335	365	3.1%	62.3%

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Table C-2d. Projected Population Density Growth (2015–2035) – West Grand Division by County

County	Classification	Area (square miles)	2015	2020	2025	2030*	2035*	Average Annual Growth Rate	Total Growth Rate
Benton	Rural	394.3	41	40	40	39	38	-0.4%	-7.5%
Carroll	Rural	597.7	47	48	48	48	47	0.1%	1.4%
Chester	Rural	285.7	60	61	62	62	62	0.2%	3.8%
Crockett	Rural	265.5	55	52	52	51	51	-0.4%	-7.4%
Decatur	Rural	333.9	35	34	35	34	34	-0.2%	-3.1%
Dyer	Suburban	512.4	74	72	70	69	67	-0.4%	-8.4%
Fayette	Suburban	704.8	56	59	64	66	67	1.0%	20.6%
Gibson	Suburban	602.8	82	84	85	86	87	0.3%	6.8%
Hardeman	Rural	667.8	39	38	37	36	35	-0.5%	-10.2%
Hardin	Rural	577.5	45	47	47	48	48	0.3%	6.8%
Haywood	Rural	533.1	34	33	32	31	30	-0.6%	-12.1%
Henderson	Rural	520.0	54	54	54	53	53	-0.1%	-2.1%
Henry	Rural	561.9	57	57	58	57	57	0.0%	-0.8%
Lake	Rural	165.8	46	42	38	36	35	-1.2%	-24.3%
Lauderdale	Rural	471.9	57	53	51	49	46	-1.0%	-19.4%
Madison	Suburban	557.2	175	177	178	176	173	-0.1%	-1.2%
McNairy	Rural	562.8	46	46	46	46	46	0.0%	-0.3%
Obion	Rural	544.9	56	56	55	54	53	-0.3%	-5.1%
Shelby	Urban	760.6	1,232	1,223	1,198	1,184	1,169	-0.3%	-5.1%
Tipton	Suburban	455.6	135	134	136	136	134	0.0%	-0.4%
Weakley	Rural	580.4	58	57	54	54	52	-0.5%	-10.2%

Notes:

1. "*" Indicates the population or growth rate is projected.
2. U.S. Census Bureau. n.d. Explore Census Data. https://data.census.gov/
3. Counties are classified by the following criteria: Urban = populations > 115,000, Suburban = populations from 35,001 to 115,000, Rural = populations 35,000 or fewer.

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Table C-3a. Housing Type – Grand Division and State Summary

Region of Interest	Total Housing Units	Single Family Housing	Multi Family Housing
East - Total	1,180,492	981,058	199,434
East	1,180,492	83.1%	16.9%
Middle - Total	1,208,263	949,397	258,866
Middle	1,208,263	78.6%	21.4%
West - Total	691,117	550,382	140,735
West	691,117	79.6%	20.4%
State - Total	**3,079,872**	**2,480,837**	**599,035**
State	**3,079,872**	**80.6%**	**19.4%**

Table C-3b. Housing Type – East Grand Division by County

County	Classification	Total Housing Units	Single Family Housing	Multi Family Housing
Anderson	Suburban	35,570	29,759	2,811
Bledsoe	Rural	5,895	5,607	288
Blount	Urban	60,912	54,564	6,348
Bradley	Suburban	45,411	37,494	7,917
Campbell	Suburban	20,370	17,842	2,528
Carter	Suburban	27,982	24,305	3,677
Claiborne	Rural	15,437	14,218	1,219
Cocke	Suburban	17,883	16,356	1,527
Cumberland	Suburban	31,037	28,044	2,993
Grainger	Rural	11,746	11,230	516
Greene	Suburban	32,470	29,755	2,715
Hamblen	Suburban	27,805	22,783	5,022
Hamilton	Urban	165,605	124,952	40,653
Hancock	Rural	3,667	3,360	307
Hawkins	Suburban	27,299	24,882	2,417
Jefferson	Suburban	25,223	23,044	2,179
Johnson	Rural	8,755	8,152	603
Knox	Urban	214,606	161,332	53,274
Loudon	Suburban	25,415	23,538	1,877
Marion	Rural	24,027	21,758	2,269
McMinn	Suburban	43,919	34,675	9,244
Meigs	Rural	6,164	6,009	155
Monroe	Suburban	21,555	19,526	2,029
Morgan	Rural	8,550	8,235	315
Polk	Rural	8,856	5,433	423
Rhea	Rural	15,311	13,614	1,697
Roane	Suburban	25,560	23,258	2,302
Scott	Rural	9,851	9,134	717
Sevier	Suburban	57,809	47,646	10,163
Sullivan	Urban	75,917	63,323	12,594
Unicoi	Rural	8,740	7,803	937
Union	Rural	9,719	9,431	288
Washington	Urban	61,426	46,996	14,430

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Table C-3c. Housing Type – Middle Grand Division by County

County	Classification	Total Housing Units	Single Family Housing	Multi Family Housing
Bedford	Suburban	20,129	17,722	2,407
Cannon	Rural	6,384	6,192	192
Cheatham	Suburban	17,171	15,911	1,260
Clay	Rural	3,987	3,718	269
Coffee	Suburban	25,187	21,913	3,274
Davidson	Urban	345,026	208,831	136,195
DeKalb	Rural	10,033	9,165	868
Dickson	Suburban	23,198	21,223	1,975
Fentress	Rural	9,228	8,706	522
Franklin	Suburban	19,815	18,163	1,652
Giles	Rural	14,104	12,815	1,289
Grundy	Rural	6,213	5,855	353
Hickman	Rural	10,588	10,218	370
Houston	Rural	3,960	3,819	141
Humphreys	Rural	8,868	8,282	586
Jackson	Rural	5,832	5,673	159
Lawrence	Suburban	18,699	16,944	1,755
Lewis	Rural	5,746	5,619	127
Lincoln	Suburban	16,124	14,957	1,167
Macon	Rural	10,845	9,906	939
Marshall	Suburban	14,521	13,398	1,123
Maury	Suburban	12,278	11,830	448
Montgomery	Urban	90,226	71,724	18,502
Moore	Rural	2,996	2,882	114,347
Overton	Rural	10,368	10,021	140
Perry	Rural	4,830	4,690	146
Pickett	Rural	3,362	3,216	8,900
Putnam	Suburban	35,991	27,091	2,349
Robertson	Suburban	29,263	26,914	2,349
Rutherford	Urban	135,336	104,650	30,686
Sequatchie	Rural	6,951	6,538	413
Smith	Rural	8,649	8,086	563
Stewart	Rural	6,698	6,503	195
Sumner	Suburban	81,376	67,274	14,102
Trousdale	Rural	3,866	3,543	323
Van Buren	Rural	2,915	2,804	111
Warren	Suburban	18,343	15,993	2,350
Wayne	Rural	7,205	6,861	344
White	Rural	12,158	11,510	648
Williamson	Urban	94,418	80,311	14,107
Wilson	Urban	60,976	52,550	8,426

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Table C-3d. Housing Type – West Grand Division by County

County	Classification	Total Housing Units	Single Family Housing	Multi Family Housing
Benton	Rural	8,544	8,319	225
Carroll	Rural	13,107	11,803	1,304
Chester	Rural	7,251	6,811	440
Crockett	Rural	6,114	5,661	453
Decatur	Rural	6,588	6,337	251
Dyer	Suburban	16,296	13,978	2,318
Fayette	Suburban	18,087	17,295	792
Gibson	Suburban	22,500	19,362	3,138
Hardeman	Rural	10,708	10,210	498
Hardin	Rural	15,096	14,331	765
Haywood	Rural	8,247	7,151	1,096
Henderson	Rural	12,944	12,141	803
Henry	Rural	17,044	15,652	1,392
Lake	Rural	2,497	1,864	633
Lauderdale	Rural	10,697	9,463	1,204
Madison	Suburban	13,837	13,311	526
McNairy	Rural	44,841	37,199	7,642
Obion	Rural	14,343	12,713	1,630
Shelby	Urban	403,144	291,294	111,850
Tipton	Suburban	24,204	22,822	1,382
Weakley	Rural	15,028	12,635	2,393

Notes:

1. U.S. Census Bureau. 2023b. Table B25010: Average Household Size of Occupied Housing Units by Tenure [Data set]. American Community survey 1-Year Estimates. https://data.census.gov/table?q=b25010

2. Counties are classified by the following criteria: Urban = populations > 115,000, Suburban = populations from 35,001 to 115,000, Rural = populations 35,000 or fewer.

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Table C-4a. Average Household Size – Grand Division and State Summary

Region of Interest	Average Household Size (All)	Owner-Occupied Units	Renter-Occupied Units
East	2.43	2.47	2.34
Middle	2.56	2.58	2.49
West	2.46	2.48	2.38
State	**2.49**	**2.52**	**2.41**

Table C-4b. Average Household Size – East Grand Division by County

County	Classification	Average Household Size (All)	Owner-Occupied Units	Renter-Occupied Units
Anderson	Suburban	2.40	2.58	2.19
Bledsoe	Rural	2.85	2.74	3.27
Blount	Urban	2.49	2.50	2.46
Bradley	Suburban	2.55	2.63	2.39
Campbell	Suburban	2.33	2.36	2.27
Carter	Suburban	2.27	2.30	2.19
Claiborne	Rural	2.30	2.36	2.15
Cocke	Suburban	2.39	2.44	2.15
Cumberland	Suburban	2.26	2.26	2.27
Grainger	Rural	2.49	2.58	2.22
Greene	Suburban	2.46	2.48	2.14
Hamblen	Suburban	2.49	2.54	2.37
Hamilton	Urban	2.39	2.49	2.39
Hancock	Rural	2.40	2.40	2.20
Hawkins	Suburban	2.46	2.47	2.40
Jefferson	Suburban	2.54	2.59	2.43
Johnson	Rural	2.29	2.28	2.38
Knox	Urban	2.41	2.55	2.15
Loudon	Suburban	2.41	2.38	2.58
Marion	Rural	2.47	2.52	2.31
McMinn	Suburban	2.40	2.45	2.31
Meigs	Rural	2.45	2.45	2.44
Monroe	Suburban	2.41	2.50	2.18
Morgan	Rural	2.65	2.65	2.65
Polk	Rural	2.45	2.52	2.07
Rhea	Rural	2.46	2.49	2.37
Roane	Suburban	2.39	2.43	2.22
Scott	Rural	2.51	2.65	2.14
Sevier	Suburban	2.49	2.47	2.57
Sullivan	Urban	2.30	2.37	2.11
Unicoi	Rural	2.22	2.34	1.91
Union	Rural	2.57	2.46	3.02
Washington	Urban	2.31	2.45	2.07

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Table C-4c. Average Household Size – Middle Grand Division by County

County	Classification	Average Household Size (All)	Owner-Occupied Units	Renter-Occupied Units
Bedford	Suburban	2.67	2.69	2.63
Cannon	Rural	2.55	2.47	2.83
Cheatham	Suburban	2.59	2.56	2.73
Clay	Rural	2.35	2.30	2.50
Coffee	Suburban	2.56	2.56	2.56
Davidson	Urban	2.19	2.30	2.07
DeKalb	Rural	2.38	2.41	2.32
Dickson	Suburban	2.58	2.61	2.47
Fentress	Rural	2.44	2.44	2.40
Franklin	Suburban	2.41	2.46	2.23
Giles	Rural	2.54	2.59	2.40
Grundy	Rural	2.64	2.71	2.27
Hickman	Rural	2.58	2.56	2.67
Houston	Rural	2.54	2.57	2.39
Humphreys	Rural	2.73	2.70	2.82
Jackson	Rural	2.49	2.47	2.63
Lawrence	Suburban	2.66	2.81	2.17
Lewis	Rural	2.43	2.46	2.30
Lincoln	Suburban	2.41	2.45	2.29
Macon	Rural	2.77	2.71	2.94
Marshall	Suburban	2.63	2.60	2.74
Maury	Suburban	2.61	2.62	2.59
Montgomery	Urban	2.65	2.74	2.50
Moore	Rural	2.47	2.53	2.20
Overton	Rural	2.51	2.48	2.62
Perry	Rural	2.77	2.67	3.04
Pickett	Rural	2.36	2.30	2.68
Putnam	Suburban	2.36	2.47	2.19
Robertson	Suburban	2.65	2.65	2.64
Rutherford	Urban	2.76	2.85	2.57
Sequatchie	Rural	2.64	2.65	2.62
Smith	Rural	2.63	2.64	2.60
Stewart	Rural	2.65	2.65	2.66
Sumner	Suburban	2.59	2.68	2.36
Trousdale	Rural	2.52	2.54	2.47
Van Buren	Rural	2.52	2.58	2.19
Warren	Suburban	2.54	2.59	2.42
Wayne	Rural	2.51	2.56	2.32
White	Rural	2.49	2.57	2.24
Williamson	Urban	2.80	2.93	2.29
Wilson	Urban	2.68	2.74	2.48

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Table C-4d. Average Household Size – West Grand Division by County

County	Classification	Average Household Size (All)	Owner-Occupied Units	Renter-Occupied Units
Benton	Rural	2.28	2.29	2.23
Carroll	Rural	2.43	2.41	2.48
Chester	Rural	2.56	2.69	2.14
Crockett	Rural	2.50	2.56	2.37
Decatur	Rural	2.55	2.58	2.45
Dyer	Suburban	2.43	2.42	2.44
Fayette	Suburban	2.52	2.58	2.24
Gibson	Suburban	2.47	2.51	2.39
Hardeman	Rural	2.41	2.49	2.21
Hardin	Rural	2.45	2.45	2.44
Haywood	Rural	2.44	2.57	2.25
Henderson	Rural	2.52	2.53	2.50
Henry	Rural	2.41	2.45	2.31
Lake	Rural	2.23	1.99	2.43
Lauderdale	Rural	2.47	2.35	2.68
Madison	Suburban	2.50	2.56	2.24
McNairy	Rural	2.51	2.58	2.35
Obion	Rural	2.41	2.43	2.39
Shelby	Urban	2.52	2.60	2.41
Tipton	Suburban	2.69	2.64	2.86
Weakley	Rural	2.32	2.40	2.16

Notes:

1. U.S. Census Bureau. 2023b. Table B25010: Average Household Size of Occupied Housing Units by Tenure [Data set] . American Community survey 1-Year Estimates. https://data.census.gov/table?q=b25010
2. Counties are classified by the following criteria: Urban = populations > 115,000, Suburban = populations from 35,001 to 115,000, Rural = populations 35,000 or fewer.

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Table C-5a. Housing Units and Type – Grand Division and State Summary

Region of Interest	Occupied Housing Units	Owner - Occupied Units	Renter - Occupied Units
East - Total	1,043,773	731,573	312,200
East	1,043,773	70.1%	29.9%
Middle - Total	114,676	748,945	365,731
Middle	114,676	67.2%	32.8%
West - Total	610,294	372,275	235,019
West	610,294	61.5%	38.5%
State - Total	**2,768,743**	**1,855,793**	**912,950**
State	**2,768,743**	**67.0%**	**33.0%**

Table C-5b. Housing Units and Type – East Grand Division by County

County	Classification	Occupied Housing Units	Owner - Occupied Units	Renter - Occupied Units
Anderson	Suburban	32,069	22,785	9,284
Bledsoe	Rural	4,812	3,808	1,004
Blount	Urban	54,449	41,900	12,549
Bradley	Suburban	41,909	28,300	13,609
Campbell	Suburban	16,709	11,252	5,457
Carter	Suburban	24,188	17,916	6,272
Claiborne	Rural	13,456	9,635	3,821
Cocke	Suburban	15,123	10,762	4,361
Cumberland	Suburban	27,447	22,023	5,424
Grainger	Rural	9,566	7,525	2,041
Greene	Suburban	28,093	21,325	6,768
Hamblen	Suburban	25,758	17,602	8,156
Hamilton	Urban	151,316	97,369	53,947
Hancock	Rural	2,773	2,015	758
Hawkins	Suburban	23,090	18,350	4,740
Jefferson	Suburban	21,351	15,807	5,544
Johnson	Rural	7,172	5,637	1,535
Knox	Urban	197,298	128,142	69,156
Loudon	Suburban	23,438	18,972	4,466
Marion	Rural	21,471	16,046	5,425
McMinn	Suburban	39,534	24,705	14,829
Meigs	Rural	5,279	4,062	1,217
Monroe	Suburban	19,283	13,927	5,356
Morgan	Rural	7,188	6,060	1,128
Polk	Rural	7,144	6,011	1,133
Rhea	Rural	13,243	9,661	3,582
Roane	Suburban	22,539	17,492	5,047
Scott	Rural	8,638	6,201	2,437
Sevier	Suburban	39,221	28,230	10,991
Sullivan	Urban	68,408	49,889	18,519
Unicoi	Rural	7,803	5,678	2,125
Union	Rural	7,771	6,245	1,526
Washington	Urban	56,234	36,241	19,993

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Table C-5c. Housing Units and Type – Middle Grand Division by County

County	Classification	Total Housing Units	Single Family Housing	Multi Family Housing
Bedford	Suburban	18,953	13,301	5,652
Cannon	Rural	5,686	4,389	1,297
Cheatham	Suburban	15,908	13,036	2,872
Clay	Rural	3,201	2,483	718
Coffee	Suburban	22,794	16,012	6,782
Davidson	Urban	314,578	168,040	146,538
DeKalb	Rural	8,495	5,850	2,645
Dickson	Suburban	21,092	16,933	4,159
Fentress	Rural	7,706	6,208	1,498
Franklin	Suburban	17,097	13,059	4,038
Giles	Rural	11,710	8,664	3,046
Grundy	Rural	5,106	4,249	857
Hickman	Rural	9,180	7,130	2,050
Houston	Rural	3,190	2,589	601
Humphreys	Rural	6,864	5,457	1,407
Jackson	Rural	4,695	3,913	782
Lawrence	Suburban	16,704	12,718	3,986
Lewis	Rural	5,153	4,147	1,006
Lincoln	Suburban	14,589	11,238	3,351
Macon	Rural	9,200	6,610	2,590
Marshall	Suburban	13,268	10,275	2,993
Maury	Suburban	9,806	7,719	2,087
Montgomery	Urban	84,321	53,073	31,248
Moore	Rural	2,638	2,171	467
Overton	Rural	8,992	6,970	2,022
Perry	Rural	3,040	2,281	759
Pickett	Rural	2,106	1,734	372
Putnam	Suburban	33,057	20,058	12,999
Robertson	Suburban	27,755	21,431	6,324
Rutherford	Urban	125,861	81,828	44,033
Sequatchie	Rural	6,121	4,572	1,549
Smith	Rural	7,619	5,749	1,870
Stewart	Rural	5,173	4,323	850
Sumner	Suburban	76,706	55,400	21,306
Trousdale	Rural	3,658	2,725	933
Van Buren	Rural	2,462	2,086	376
Warren	Suburban	16,132	11,433	4,699
Wayne	Rural	5,734	4,674	1,060
White	Rural	11,001	8,553	2,448
Williamson	Urban	90,716	72,730	18,346
Wilson	Urban	56,609	43,494	13,115

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Table C-5d. Housing Units and Type – West Grand Division by County

County	Classification	Total Housing Units	Single Family Housing	Multi Family Housing
Benton	Rural	6,928	5,172	1,756
Carroll	Rural	11,258	5,422	2,836
Chester	Rural	6,333	4,853	1,480
Crockett	Rural	5,494	3,784	1,710
Decatur	Rural	4,439	3,328	1,111
Dyer	Suburban	14,884	9,285	5,599
Fayette	Suburban	16,730	13,509	3,221
Gibson	Suburban	20,098	13,422	6,676
Hardeman	Rural	9,049	6,439	2,610
Hardin	Rural	10,833	8,450	2,383
Haywood	Rural	7,166	4,109	3,057
Henderson	Rural	10,928	7,814	3,114
Henry	Rural	13,205	9,982	3,223
Lake	Rural	2,022	915	1,107
Lauderdale	Rural	9,214	5,759	3,455
Madison	Suburban	11,529	9,199	2,330
McNairy	Rural	41,260	29,410	11,850
Obion	Rural	12,516	8,402	4,114
Shelby	Urban	360,590	196,804	163,786
Tipton	Suburban	22,544	17,401	5,143
Weakley	Rural	13,274	8,816	4,458

Notes:

1. U.S. Census Bureau. 2023a. American Community Survey 1-Year Estimates: Table S2502 – Demographic Characteristics for Occupied Housing Units. https://data.census.gov/table?q=S2502
2. Counties are classified by the following criteria: Urban = populations > 115,000, Suburban = populations from 35,001 to 115,000, Rural = populations 35,000 or fewer.

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Table C-6a. Income Per Capita and Household Income – Grand Division and State Summary

Region of Interest	2023 Income Per Capita	2025 Income Per Capita[1]	2023 Household Income	2025 Household Income[2]
East - Total	$1,593,422	$1,673,571	$1,900,052	$1,995,625
East - Average	$48,286	$50,714	$57,577	$60,473
Middle - Total	$2,092,174	$2,197,410	$2,572,911	$2,702,328
Middle - Average	$51,029	$53,595	$62,754	$65,910
West - Total	$1,031,579	$1,083,467	$1,140,485	$1,197,851
West - Average	$49,123	$51,594	$54,309	$57,041
State - Total	**$4,717,175**	**$4,954,449**	**$5,613,448**	**$5,895,804**
State - Average	**$49,654**	**$52,152**	**$59,089**	**$62,061**

Table C-6b. Income Per Capita and Household Income – East Grand Division by County

County	Classification	2023 Income Per Capita	2025 Income Per Capita[1]	2023 Household Income	2025 Household Income[2]
Anderson	Suburban	$56,260	$59,090	$63,171	$66,349
Bledsoe	Rural	$36,038	$37,851	$49,655	$52,153
Blount	Urban	$58,447	$61,387	$74,607	$78,360
Bradley	Suburban	$50,014	$52,530	$63,789	$66,998
Campbell	Suburban	$44,694	$46,942	$50,260	$52,788
Carter	Suburban	$42,833	$44,987	$48,435	$50,871
Claiborne	Rural	$44,367	$46,599	$46,587	$48,930
Cocke	Suburban	$42,387	$44,519	$48,416	$50,851
Cumberland	Suburban	$48,091	$50,510	$48,475	$61,416
Grainger	Rural	$45,678	$47,976	$51,351	$53,934
Greene	Suburban	$44,945	$47,206	$54,071	$56,791
Hamblen	Suburban	$50,094	$52,614	$52,794	$55,450
Hamilton	Urban	$65,525	$68,821	$72,568	$76,218
Hancock	Rural	$33,223	$34,894	$31,995	$33,604
Hawkins	Suburban	$44,192	$46,415	$55,278	$58,058
Jefferson	Suburban	$48,184	$50,608	$63,084	$66,257
Johnson	Rural	$40,345	$42,374	$52,152	$54,775
Knox	Urban	$67,323	$70,709	$71,662	$75,267
Loudon	Suburban	$70,063	$73,587	$80,296	$84,335
Marion	Rural	$51,590	$54,185	$58,103	$61,026
McMinn	Suburban	$45,629	$47,924	$59,674	$62,676
Meigs	Rural	$41,017	$43,080	$58,395	$61,332
Monroe	Suburban	$44,350	$46,851	$56,648	$59,497
Morgan	Rural	$40,237	$42,261	$57,408	$60,296
Polk	Rural	$42,519	$44,658	$60,227	$63,256
Rhea	Rural	$45,745	$48,046	$58,133	$61,057
Roane	Suburban	$53,353	$56,037	$66,218	$69,549
Scott	Rural	$39,326	$41,304	$42,679	$44,826
Sevier	Suburban	$57,533	$60,427	$63,829	$67,040
Sullivan	Urban	$54,453	$57,192	$56,802	$59,659
Unicoi	Rural	$45,593	$47,886	$50,381	$52,915
Union	Rural	$43,407	$45,590	$61,858	$64,969
Washington	Urban	$55,967	$58,782	$61,051	$64,122

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Table C-6c. Income Per Capita and Household Income – Middle Grand Division by County

County	Classification	2023 Income Per Capita	2025 Income Per Capita[1]	2023 Household Income	2025 Household Income[2]
Bedford	Suburban	$47,850	$50,257	$62,197	$65,326
Cannon	Rural	$48,732	$51,183	$58,092	$61,014
Cheatham	Suburban	$59,907	$62,920	$82,015	$86,140
Clay	Rural	$39,424	$41,407	$44,712	$46,961
Coffee	Suburban	$50,163	$52,686	$60,656	$63,707
Davidson	Urban	$92,496	$97,149	$75,664	$79,470
DeKalb	Rural	$50,940	$53,502	$48,484	$50,923
Dickson	Suburban	$54,986	$57,752	$73,223	$76,906
Fentress	Rural	$43,102	$45,270	$50,865	$53,424
Franklin	Suburban	$49,891	$52,401	$61,553	$64,649
Giles	Rural	$47,548	$49,940	$61,476	$64,568
Grundy	Rural	$40,453	$42,488	$45,573	$47,865
Hickman	Rural	$45,298	$47,576	$57,223	$60,101
Houston	Rural	$41,112	$43,180	$54,475	$57,215
Humphreys	Rural	$47,364	$49,746	$59,333	$62,317
Jackson	Rural	$40,132	$42,151	$41,475	$43,561
Lawrence	Suburban	$43,273	$45,450	$53,233	$55,911
Lewis	Rural	$44,554	$46,795	$49,477	$51,966
Lincoln	Suburban	$51,229	$53,806	$63,115	$66,290
Macon	Rural	$41,530	$43,619	$56,269	$59,099
Marshall	Suburban	$50,555	$53,098	$70,829	$74,392
Maury	Suburban	$57,191	$60,068	$74,162	$77,892
Montgomery	Urban	$52,478	$55,118	$72,365	$76,055
Moore	Rural	$51,017	$53,583	$66,867	$70,041
Overton	Rural	$42,000	$44,113	$46,159	$48,481
Perry	Rural	$37,048	$38,912	$50,489	$53,029
Pickett	Rural	$42,545	$44,685	$44,591	$46,834
Putnam	Suburban	$51,132	$53,704	$563,537	$59,381
Robertson	Suburban	$56,484	$59,325	$78,439	$82,384
Rutherford	Urban	$54,623	$57,371	$82,588	$86,742
Sequatchie	Rural	$48,254	$50,681	$52,260	$54,889
Smith	Rural	$50,388	$52,923	$62,799	$65,958
Stewart	Rural	$50,483	$53,022	$62,052	$65,173
Sumner	Suburban	$67,865	$71,279	$86,005	$90,331
Trousdale	Rural	$40,015	$42,028	$63,190	$66,368
Van Buren	Rural	$36,680	$38,680	$60,281	$63,313
Warren	Suburban	$44,375	$46,607	$54,088	$56,809
Wayne	Rural	$38,758	$40,708	$52,824	$55,481
White	Rural	$42,866	$45,022	$52,206	$54,832
Williamson	Urban	$128,610	$135,079	$131,202	$137,801
Wilson	Urban	$68,675	$72,129	$94,048	$98,779

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Table C-6d. Income Per Capita and Household Income – West Grand Division by County

County	Classification	2023 Income Per Capita	2025 Income Per Capita[1]	2023 Household Income	2025 Household Income[2]
Benton	Rural	$43,832	$46,037	$50,435	$52,972
Carroll	Rural	$44,182	$46,404	$50,391	$52,926
Chester	Rural	$43,542	$45,732	$60,543	$63,588
Crockett	Rural	$50,106	$56,626	$59,049	$62,019
Decatur	Rural	$52,005	$54,621	$46,190	$48,513
Dyer	Suburban	$53,828	$56,536	$54,973	$57,738
Fayette	Suburban	$81,728	$85,839	$84,764	$89,028
Gibson	Suburban	$49,536	$52,028	$59,009	$61,977
Hardeman	Rural	$36,966	$38,825	$46,173	$48,496
Hardin	Rural	$47,525	$49,916	$49,149	$51,621
Haywood	Rural	$40,397	$42,429	$43,513	$45,702
Henderson	Rural	$48,395	$50,829	$53,471	$56,161
Henry	Rural	$55,959	$58,774	$48,540	$50,982
Lake	Rural	$32,554	$34,191	$30,500	$32,034
Lauderdale	Rural	$41,198	$43,270	$49,205	$51,680
Madison	Suburban	$55,537	$58,331	$58,189	$61,116
McNairy	Rural	$40,085	$42,101	$59,714	$62,718
Obion	Rural	$51,945	$54,558	$53,102	$55,773
Shelby	Urban	$61,979	$65,097	$62,337	$65,473
Tipton	Suburban	$52,829	$55,486	$71,736	$75,344
Weakley	Rural	$47,451	$49,838	$49,502	$51,992

Notes:

1. U.S. Census Bureau. n.d. Explore Census Data. https://data.census.gov/
2. [1]Income per Capita adjusted to maintain purchasing power in 2025 dollars
3. [2] Median Household Income adjusted to maintain purchasing power in 2025 dollars

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Table C-7a. Employment Rate for Population Aged 16 and Over – Grand Division and State Summary

Region of Interest	Population Age 16+	Total Employed	Percent Employed
East - Total	2,002,695	1,096,508	55%
East - Average	60,688	33,228	55%
Middle - Total	2,202,275	1,363,134	62%
Middle - Average	53,714	33,247	62%
West - Total	1,232,272	687,688	56%
West - Average	58,680	32,747	56%
State - Total	**5,551,644**	**3,213,805**	**58%**
State - Average	**58,438**	**33,830**	**58%**

Table C-7b. Employment Rate for Population Aged 16 and Over – East Grand Division by County

County	Classification	Population Age 16+	Total Employed	Percent Employed
Anderson	Suburban	62,065	32,420	52%
Bledsoe	Rural	12,916	5,963	46%
Blount	Urban	108,598	61,779	57%
Bradley	Suburban	56,338	49,966	58%
Campbell	Suburban	32,457	15,687	48%
Carter	Suburban	47,362	23,166	49%
Claiborne	Rural	26,579	12,662	48%
Cocke	Suburban	29,475	14,031	48%
Cumberland	Suburban	50,875	21,850	43%
Grainger	Rural	19,364	9,896	51%
Greene	Suburban	57,258	28,218	49%
Hamblen	Suburban	51,320	26,929	52%
Hamilton	Urban	297,556	177,431	60%
Hancock	Rural	5,349	2,089	39%
Hawkins	Suburban	46,902	22,001	47%
Jefferson	Suburban	44,948	23,889	53%
Johnson	Rural	15,068	5,725	38%
Knox	Urban	379,072	233,540	62%
Loudon	Suburban	44,045	23,059	52%
Marion	Rural	23,413	12,317	53%
McMinn	Suburban	43,622	22,163	51%
Meigs	Rural	10,036	4,702	47%
Monroe	Suburban	37,702	17,960	48%
Morgan	Rural	17,949	7,197	40%
Polk	Rural	13,983	7,351	53%
Rhea	Rural	26,422	13,031	49%
Roane	Suburban	44,825	22,969	51%
Scott	Rural	17,442	8,203	47%
Sevier	Suburban	80,293	47,086	59%
Sullivan	Urban	130,936	67,296	51%
Unicoi	Rural	15,293	7,606	50%
Union	Rural	15,970	7,815	49%
Washington	Urban	107,262	60,511	56%

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Table C-7c. Employment Rate for Population Aged 16 and Over – Middle Grand Division by County

County	Classification	Population Age 16+	Total Employed	Percent Employed
Bedford	Suburban	37,757	22,517	60%
Cannon	Rural	11,663	6,304	54%
Cheatham	Suburban	32,725	20,106	61%
Clay	Rural	6,218	2,708	44%
Coffee	Suburban	44,239	25,679	58%
Davidson	Urban	560,745	383,444	68%
DeKalb	Rural	16,135	8,015	50%
Dickson	Suburban	42,448	24,592	58%
Fentress	Rural	15,104	7,102	47%
Franklin	Suburban	34,624	18,315	53%
Giles	Rural	24,103	12,694	53%
Grundy	Rural	10,859	5,385	50%
Hickman	Rural	20,515	10,445	51%
Houston	Rural	6,678	3,158	47%
Humphreys	Rural	15,031	7,546	50%
Jackson	Rural	9,916	4,661	47%
Lawrence	Suburban	34,040	16,960	50%
Lewis	Rural	9,842	4,804	49%
Lincoln	Suburban	27,417	15,536	57%
Macon	Rural	18,706	10,793	58%
Marshall	Suburban	26,776	15,292	57%
Maury	Suburban	74,918	45,851	61%
Montgomery	Urban	155,404	85,780	55%
Moore	Rural	5,321	2,789	52%
Overton	Rural	17,912	9,545	53%
Perry	Rural	6,366	2,862	45%
Pickett	Rural	4,166	1,868	45%
Putnam	Suburban	63,891	35,753	56%
Robertson	Suburban	56,074	34,904	62%
Rutherford	Urban	253,295	171,935	68%
Sequatchie	Rural	12,484	6,137	49%
Smith	Rural	16,007	9,030	56%
Stewart	Rural	11,092	5,622	51%
Sumner	Suburban	148,655	94,770	64%
Trousdale	Rural	9,119	4,747	52%
Van Buren	Rural	4,838	2,406	50%
Warren	Suburban	32,579	17,790	55%
Wayne	Rural	14,081	6,151	44%
White	Rural	21,765	10,914	50%
Williamson	Urban	177,600	117,937	66%
Wilson	Urban	111,167	70,287	63%

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Table C-7d. Employment Rate for Population Aged 16 and Over – West Grand Division by County

County	Classification	Population Age 16+	Total Employed	Percent Employed
Benton	Rural	13,215	5,645	43%
Carroll	Rural	22,414	11,544	52%
Chester	Rural	14,028	6,522	46%
Crockett	Rural	11,281	6,221	55%
Decatur	Rural	9,461	4,377	46%
Dyer	Suburban	29,297	16,376	56%
Fayette	Suburban	33,860	17,885	53%
Gibson	Suburban	38,860	20,236	52%
Hardeman	Rural	21,117	8,329	39%
Hardin	Rural	21,035	9,990	47%
Haywood	Rural	13,966	7,633	55%
Henderson	Rural	22,275	11,238	50%
Henry	Rural	26,357	12,493	47%
Lake	Rural	6,426	1,711	27%
Lauderdale	Rural	20,523	9,242	45%
Madison	Suburban	78,377	42,686	54%
McNairy	Rural	20,973	9,540	45%
Obion	Rural	24,444	12,613	52%
Shelby	Urban	728,446	431,683	59%
Tipton	Suburban	48,369	27,421	57%
Weakley	Rural	27,728	14,303	52%

Notes:

1. U.S. Census Bureau. 2020. American Community Survey 5-Year Estimates (2016–2020). https://www.census.gov/programssurveys/acs/technical-documentation/table-and-geography-changes/2020/5-year.html

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Table C-8a. Population Living in Poverty – Grand Division and State Summary

Region of Interest	Number in Poverty	Average Percent in Poverty
East	373,646	16%
Middle	325,507	14%
West	264,325	18%
State Total	**963,478**	**15.7%**

Table C-8b. Population Living in Poverty - East Grand Division by County

County	Classification	Number in Poverty	Percent in Poverty
Anderson	Suburban	11,386	14.4%
Bledsoe	Rural	2,830	21.6%
Blount	Urban	13,528	9.7%
Bradley	Suburban	16,404	15.0%
Campbell	Suburban	8,147	20.6%
Carter	Suburban	9,386	16.9%
Claiborne	Rural	5,818	18.6%
Cocke	Suburban	7,563	20.4%
Cumberland	Suburban	9,385	14.6%
Grainger	Rural	3,800	15.5%
Greene	Suburban	10,430	14.8%
Hamblen	Suburban	11,359	17.3%
Hamilton	Urban	47,922	12.9%
Hancock	Rural	1,807	26.7%
Hawkins	Suburban	9,995	17.2%
Jefferson	Suburban	7,279	12.9%
Johnson	Rural	3,505	20.9%
Knox	Urban	67,213	13.8%
Loudon	Suburban	6,316	10.5%
Marion	Rural	8,141	14.9%
McMinn	Suburban	17,629	18.6%
Meigs	Rural	2,116	15.6%
Monroe	Suburban	7,706	16.0%
Morgan	Rural	3,191	16.2%
Polk	Rural	2,672	15.0%
Rhea	Rural	5,320	16.0%
Roane	Suburban	7,448	13.4%
Scott	Rural	4,596	21.0%
Sevier	Suburban	12,045	12.2%
Sullivan	Urban	21,649	13.5%
Unicoi	Rural	2,153	12.3%
Union	Rural	3,262	15.9%
Washington	Urban	21,645	16.3%

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Table C-8c. Population Living in Poverty - Middle Grand Division by County

County	Classification	Number in Poverty	Percent in Poverty
Bedford	Suburban	6,882	13.3%
Cannon	Rural	2,150	14.4%
Cheatham	Suburban	3,625	8.7%
Clay	Rural	1,620	21.2%
Coffee	Suburban	8,657	14.5%
Davidson	Urban	85,007	12.3%
DeKalb	Rural	3,408	16.3%
Dickson	Suburban	5,522	9.9%
Fentress	Rural	3,653	18.9%
Franklin	Suburban	5,406	12.9%
Giles	Rural	4,570	15.3%
Grundy	Rural	3,127	22.8%
Hickman	Rural	3,900	15.9%
Houston	Rural	1,401	17.0%
Humphreys	Rural	2,763	14.7%
Jackson	Rural	2,427	20.0%
Lawrence	Suburban	6,770	14.9%
Lewis	Rural	2,075	16.1%
Lincoln	Suburban	5,176	14.5%
Macon	Rural	4,279	16.2%
Marshall	Suburban	3,917	10.7%
Maury	Suburban	3,994	15.5%
Montgomery	Urban	29,603	12.6%
Moore	Rural	662	9.9%
Overton	Rural	3,299	14.3%
Perry	Rural	1,521	17.5%
Pickett	Rural	842	16.6%
Putnam	Suburban	13,884	17.3%
Robertson	Suburban	7,511	9.9%
Rutherford	Urban	32,883	9.1%
Sequatchie	Rural	2,530	15.1%
Smith	Rural	2,371	11.7%
Stewart	Rural	1,797	12.9%
Sumner	Suburban	18,409	8.9%
Trousdale	Rural	1,535	15.8%
Van Buren	Rural	942	14.7%
Warren	Suburban	7,424	17.6%
Wayne	Rural	2,563	18.0%
White	Rural	3,884	13.7%
Williamson	Urban	12,845	4.9%
Wilson	Urban	10,673	6.6%

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Table C-8d. Population Living in Poverty - West Grand Division by County

County	Classification	Number in Poverty	Percent in Poverty
Benton	Rural	2,800	17.6%
Carroll	Rural	4,803	17.4%
Chester	Rural	2,740	16.7%
Crockett	Rural	2,045	14.9%
Decatur	Rural	2,207	19.2%
Dyer	Suburban	6,368	17.7%
Fayette	Suburban	5,588	12.8%
Gibson	Suburban	7,373	14.7%
Hardeman	Rural	4,687	21.5%
Hardin	Rural	5,262	19.7%
Haywood	Rural	3,592	21.0%
Henderson	Rural	3,865	14.0%
Henry	Rural	5,898	18.3%
Lake	Rural	1,573	34.0%
Lauderdale	Rural	5,614	24.6%
Madison	Suburban	4,405	15.1%
McNairy	Rural	11,685	10.7%
Obion	Rural	5,791	19.3%
Shelby	Urban	163,297	18.2%
Tipton	Suburban	9,010	14.8%
Weakley	Rural	5,722	18.6%

Notes:

1. U.S. Census Bureau. 2020. American Community Survey 5-Year Estimates 2016–2020). https://www.census.gov/programs-surveys/acs/technical-documentation/table-and-geography-changes/2020/5-year.html.
2. Counties are classified by the following criteria: Urban = populations > 115,000, Suburban = populations from 35,001 to 115,000, Rural = populations 35,000 or fewer.

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Table C-9a. Limited English Proficiency (LEP) and Most Common Non-English Languages – Grand Division and State Summary

Region of Interest	Average Population With LEP	Most Common Other Primary Languages
East	1.42%	Spanish or Spanish Creole, Chinese, Vietnamese, French (Patois, Cajun)
Middle	1.68%	Spanish or Spanish Creole, Arabic, African Languages, Chinese
West	1.31%	Spanish or Spanish Creole, Vietnamese, African Languages, Chinese
State Average	**1.51%**	**Spanish or Spanish Creole, Vietnamese, African Languages, Chinese**

Table C-9b. Limited English Proficiency (LEP) and Most Common Non-English Languages - East Grand Division by County

County	Classification	Population With LEP	Other Primary Languages
Anderson	Suburban	1.57%	Spanish or Spanish Creole, Chinese, Korean, French (incl. Patois, Cajun)
Bledsoe	Rural	1.15%	Spanish or Spanish Creole, German, Other Asian langs., Japanese
Blount	Urban	1.56%	Spanish or Spanish Creole, Chinese, Other Indo-European langs., Japanese
Bradley	Suburban	3.00%	Spanish or Spanish Creole, Other Slavic langs., Chinese, Gujarati
Campbell	Suburban	0.62%	Spanish or Spanish Creole, Korean, French (incl. Patois, Cajun), Chinese
Carter	Suburban	0.40%	Spanish or Spanish Creole, German, French (incl. Patois, Cajun), Vietnamese
Claiborne	Rural	0.57%	Arabic, Tagalog, Japanese, Korean
Cocke	Suburban	0.73%	Spanish or Spanish Creole, Chinese, Persian, German
Cumberland	Suburban	1.25%	Spanish or Spanish Creole, Russian, Hungarian, Italian
Grainger	Rural	0.67%	Spanish or Spanish Creole, Portuguese/Portuguese Creole, Arabic, Other Asian langs.
Greene	Suburban	1.40%	Spanish or Spanish Creole, French (incl. Patois, Cajun), Tagalog, Korean
Hamblen	Suburban	5.48%	Spanish or Spanish Creole, Chinese, Korean, German
Hamilton	Urban	3.16%	Spanish or Spanish Creole, Vietnamese, Korean, Serbo-Croatian
Hancock	Rural	0.30%	Korean, Spanish or Spanish Creole, Other Asian langs., Japanese
Hawkins	Suburban	0.60%	Spanish or Spanish Creole, Tagalog, French (incl. Patois, Cajun), Italian
Jefferson	Suburban	1.42%	Spanish or Spanish Creole, Scandinavian langs., Korean, Italian
Johnson	Rural	0.75%	Spanish or Spanish Creole, French (incl. Patois, Cajun), Persian, African langs.
Knox	Urban	2.65%	Spanish or Spanish Creole, Vietnamese, Chinese, Arabic
Loudon	Suburban	3.55%	Spanish or Spanish Creole, French (incl. Patois, Cajun), Japanese, Gujarati
Marion	Rural	1.19%	Spanish or Spanish Creole, Japanese, Laotian, Urdu
McMinn	Suburban	1.70%	Spanish or Spanish Creole, Vietnamese, Hindi, Portuguese/Portuguese Creole
Meigs	Rural	0.00%	Spanish or Spanish Creole, Other Asian langs., Japanese, Korean
Monroe	Suburban	1.40%	Spanish or Spanish Creole, Vietnamese, Chinese, French (incl. Patois, Cajun)
Morgan	Rural	0.80%	Spanish or Spanish Creole, Laotian, French (incl. Patois, Cajun), Hebrew
Polk	Rural	0.62%	Spanish or Spanish Creole, Tagalog, French (incl. Patois, Cajun), Portuguese/Portuguese Creole
Rhea	Rural	0.94%	Spanish or Spanish Creole, Arabic, German, Hungarian
Roane	Suburban	0.54%	Spanish or Spanish Creole, Other Pacific Island langs., Vietnamese, French (incl. Patois, Cajun)
Scott	Rural	0.16%	French (incl. Patois, Cajun), German, Japanese, Other Asian langs.
Sevier	Suburban	2.92%	Spanish or Spanish Creole, Russian, Gujarati, Other Indic langs.
Sullivan	Urban	0.78%	Spanish or Spanish Creole, Chinese, African langs., Thai
Unicoi	Rural	3.21%	Spanish or Spanish Creole, Other Indic langs., French Creole, Chinese
Union	Rural	0.51%	Spanish or Spanish Creole, French (incl. Patois, Cajun), African langs., Hebrew
Washington	Urban	1.32%	Spanish or Spanish Creole, Chinese, Gujarati, German

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Table C-9c. Limited English Proficiency (LEP) and Most Common Non-English Languages - Middle Grand Division by County

County	Classification	Population With LEP	Other Primary Languages
Bedford	Suburban	6.56%	Spanish or Spanish Creole, Japanese, African langs., Chinese
Cannon	Rural	0.77%	Spanish or Spanish Creole, Other Asian langs., Japanese, Korean
Cheatham	Suburban	0.92%	Spanish or Spanish Creole, Other Indo-European langs., Persian, Gujarati
Clay	Rural	0.98%	Spanish or Spanish Creole, Korean, French (incl. Patois, Cajun), Hebrew
Coffee	Suburban	2.22%	Spanish or Spanish Creole, Chinese, Korean, Japanese
Davidson	Urban	7.47%	Spanish or Spanish Creole, Arabic, African langs., Vietnamese
DeKalb	Rural	5.10%	Spanish or Spanish Creole, Serbo-Croatian, Japanese, Other Indo-European langs.
Dickson	Suburban	1.27%	Spanish or Spanish Creole, Portuguese/Portuguese Creole, German, Russian
Fentress	Rural	0.38%	Spanish or Spanish Creole, Other Asian langs., Japanese, Korean
Franklin	Suburban	1.13%	Spanish or Spanish Creole, Korean, Russian, Gujarati
Giles	Rural	1.45%	Spanish or Spanish Creole, Other West Germanic langs., German, Gujarati
Grundy	Rural	0.28%	Vietnamese, Spanish or Spanish Creole, French (incl. Patois, Cajun), Hebrew
Hickman	Rural	0.40%	Spanish or Spanish Creole, Other Asian langs., Japanese, Korean
Houston	Rural	0.16%	Spanish or Spanish Creole, Other Asian langs., Japanese, Korean
Humphreys	Rural	0.55%	Spanish or Spanish Creole, German, French (incl. Patois, Cajun), Hebrew
Jackson	Rural	0.13%	Spanish or Spanish Creole, Other Indic langs., French Creole, Chinese
Lawrence	Suburban	1.64%	Spanish or Spanish Creole, German, Other West Germanic langs., Chinese
Lewis	Rural	1.00%	Gujarati, Chinese, Spanish or Spanish Creole, Portuguese/Portuguese Creole
Lincoln	Suburban	0.96%	Spanish or Spanish Creole, Other Indo-European langs., Korean, Other Asian langs.
Macon	Rural	2.61%	Spanish or Spanish Creole, Other Asian langs., Japanese, Korean
Marshall	Suburban	2.80%	Spanish or Spanish Creole, German, Japanese, French (incl. Patois, Cajun)
Maury	Suburban	1.33%	Spanish or Spanish Creole, German, Gujarati, Portuguese/Portuguese Creole
Montgomery	Urban	3.25%	Spanish or Spanish Creole, Korean, African langs., German
Moore	Rural	0.12%	Spanish or Spanish Creole, Other Asian langs., Japanese, Korean
Overton	Rural	0.36%	Spanish or Spanish Creole, German, Thai, Other Asian langs.
Perry	Rural	0.22%	Spanish or Spanish Creole, Other Asian langs., Japanese, Korean
Pickett	Rural	0.53%	Spanish or Spanish Creole, Other Asian langs., Japanese, Korean
Putnam	Suburban	3.75%	Spanish or Spanish Creole, Chinese, Other Indic langs., Korean
Robertson	Suburban	3.10%	Spanish or Spanish Creole, Gujarati, Japanese, Korean
Rutherford	Urban	3.62%	Spanish or Spanish Creole, Laotian, Chinese, Arabic
Sequatchie	Rural	0.54%	Spanish or Spanish Creole, Other Asian langs., Japanese, Korean
Smith	Rural	1.03%	Spanish or Spanish Creole, French (incl. Patois, Cajun), Gujarati, Tagalog
Stewart	Rural	0.63%	Korean, Spanish or Spanish Creole, German, Other Indo-European langs.
Sumner	Suburban	1.93%	Spanish or Spanish Creole, Chinese, Gujarati, Other Indo-European langs.
Trousdale	Rural	0.54%	Spanish or Spanish Creole, Laotian, Other Asian langs., Japanese
Van Buren	Rural	0.17%	Spanish or Spanish Creole, Other Indic langs., French Creole, Chinese
Warren	Suburban	4.36%	Spanish or Spanish Creole, Vietnamese, Mon-Khmer(Cambodian), Polish
Wayne	Rural	1.02%	Spanish or Spanish Creole, Laotian, Serbo-Croatian, Other Indo-European langs.
White	Rural	0.54%	Spanish or Spanish Creole, Other West Germanic langs., French (incl. Patois, Cajun), Hebrew
Williamson	Urban	1.76%	Spanish or Spanish Creole, Korean, Chinese, Other Asian langs.
Wilson	Urban	1.50%	Spanish or Spanish Creole, Vietnamese, Gujarati, French (incl. Patois, Cajun)

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Table C-9d. Limited English Proficiency (LEP) and Most Common Non-English Languages - West Grand Division by County

County	Classification	Population With LEP	Other Primary Languages
Benton	Rural	1.01%	Spanish or Spanish Creole, Other Indic langs., Korean, French Creole
Carroll	Rural	0.42%	Spanish or Spanish Creole, Portuguese/Portuguese Creole, Russian, Other Indic langs.
Chester	Rural	1.62%	Spanish or Spanish Creole, French (incl. Patois, Cajun), Tagalog, Korean
Crockett	Rural	4.39%	Spanish or Spanish Creole, African langs., French (incl. Patois, Cajun), Arabic
Decatur	Rural	1.18%	Spanish or Spanish Creole, Arabic, Other Asian langs., Japanese
Dyer	Suburban	1.02%	Spanish or Spanish Creole, African langs., Tagalog, Persian
Fayette	Suburban	0.80%	Spanish or Spanish Creole, Korean, Scandinavian langs., Arabic
Gibson	Suburban	0.45%	Spanish or Spanish Creole, German, French (incl. Patois, Cajun), Japanese
Hardeman	Rural	0.44%	Spanish or Spanish Creole, Laotian, Hmong, Mon-Khmer(Cambodian)
Hardin	Rural	0.46%	Spanish or Spanish Creole, Thai, Other Pacific Island langs., Other Native North American
Haywood	Rural	2.04%	Spanish or Spanish Creole, French (incl. Patois, Cajun), African langs., Hebrew
Henderson	Rural	0.66%	Spanish or Spanish Creole, Tagalog, French (incl. Patois, Cajun), German
Henry	Rural	0.60%	Spanish or Spanish Creole, German, African langs., Chinese
Lake	Rural	1.45%	Spanish or Spanish Creole, Korean, German, Vietnamese
Lauderdale	Rural	0.84%	Spanish or Spanish Creole, Mon-Khmer(Cambodian), Gujarati, Other Native North American
Madison	Suburban	0.35%	Spanish or Spanish Creole, French (incl. Patois, Cajun), Chinese, Gujarati
McNairy	Rural	2.29%	Spanish or Spanish Creole, French (incl. Patois, Cajun), Tagalog, German
Obion	Rural	1.91%	Spanish or Spanish Creole, Arabic, Thai, German
Shelby	Urban	3.96%	Spanish or Spanish Creole, Vietnamese, African langs., Chinese
Tipton	Suburban	1.09%	Spanish or Spanish Creole, Chinese, Tagalog, Other Pacific Island langs.
Weakley	Rural	0.54%	Spanish or Spanish Creole, Arabic, French (incl. Patois, Cajun), German

Notes:

1. U.S. Department of Justice. n.d. *Language Map App 2015: Limited English Proficiency*. https://www.lep.gov/maps/lma2015/Final_508.

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Table C-10a. Average Educational Attainment – Grand Division and State Summary

Region of Interest	Less Than Highschool Diploma	High School Diploma or Equivalent	Bachelor's Degree	Graduate or Professional Degree	Other
East	13.5%	38.7%	12.1%	7.4%	28.3%
Middle	13.1%	39.2%	13.6%	7.4%	26.8%
West	14.4%	42.6%	10.9%	6.3%	25.8%
State	**13.5%**	**39.8%**	**12.5%**	**7.1%**	**27.1%**

Table C-10b. Average Educational Attainment - East Grand Division by County

County	Less Than Highschool Diploma	High School Diploma or Equivalent	Bachelor's Degree	Graduate or Professional Degree	Other
Anderson	8.7%	33.2%	15.2%	11.1%	31.8%
Bledsoe	20.4%	50.5%	5.0%	3.8%	20.3%
Blount	9.3%	35.4%	17.1%	9.6%	28.6%
Bradley	11.6%	30.8%	15.1%	9.6%	32.9%
Campbell	17.2%	41.6%	7.8%	5.4%	28.0%
Carter	11.3%	37.9%	13.8%	6.8%	30.2%
Claiborne	16.9%	39.9%	9.7%	7.7%	25.8%
Cocke	16.3%	47.4%	7.5%	4.1%	24.7%
Cumberland	10.4%	39.8%	10.8%	7.7%	31.3%
Grainger	16.2%	42.6%	8.5%	6.4%	26.3%
Greene	13.3%	42.9%	11.1%	6.5%	26.2%
Hamblen	12.8%	38.7%	11.8%	8.3%	28.4%
Hamilton	8.8%	23.3%	23.2%	13.8%	30.9%
Hancock	21.2%	41.7%	4.4%	4.2%	28.5%
Hawkins	13.6%	42.9%	11.1%	5.7%	26.7%
Jefferson	11.0%	36.4%	12.8%	8.2%	31.6%
Johnson	18.7%	38.3%	11.2%	4.5%	27.3%
Knox	7.7%	24.6%	24.4%	15.7%	27.6%
Loudon	11.0%	30.8%	17.8%	10.8%	29.6%
Marion	9.5%	37.1%	14.8%	6.1%	32.5%
McMinn	12.6%	48.5%	7.8%	4.0%	27.1%
Meigs	17.1%	45.3%	8.0%	3.9%	25.7%
Monroe	13.7%	40.9%	10.6%	5.2%	29.6%
Morgan	16.5%	43.2%	8.4%	5.3%	26.6%
Polk	14.3%	38.0%	9.2%	5.5%	33.0%
Rhea	15.9%	41.4%	11.8%	5.6%	25.3%
Roane	10.6%	37.4%	12.8%	9.3%	29.9%
Scott	19.5%	48.3%	5.8%	4.4%	22.0%
Sevier	12.2%	35.3%	14.5%	6.9%	31.1%
Sullivan	10.3%	32.6%	17.7%	8.9%	30.5%
Unicoi	12.0%	37.6%	12.4%	7.6%	30.4%
Union	16.6%	43.4%	9.0%	5.6%	25.4%
Washington	8.9%	29.4%	19.0%	14.6%	28.1%

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Table C-10c. Average Educational Attainment - Middle Grand Division by County

County	Less Than Highschool Diploma	High School Diploma or Equivalent	Bachelor's Degree	Graduate or Professional Degree	Other
Bedford	15.3%	41.2%	11.8%	5.1%	26.6%
Cannon	15.8%	41.5%	11.7%	5.2%	25.8%
Cheatham	9.7%	36.8%	16.6%	8.4%	28.5%
Clay	16.2%	48.1%	6.3%	5.7%	23.7%
Coffee	12.6%	37.9%	13.0%	9.9%	26.6%
Davidson	9.7%	20.1%	29.3%	18.1%	22.8%
DeKalb	17.3%	39.4%	12.9%	7.1%	23.3%
Dickson	10.8%	39.0%	14.0%	7.4%	28.8%
Fentress	16.8%	42.2%	9.8%	5.5%	25.7%
Franklin	9.1%	40.5%	14.3%	8.7%	27.4%
Giles	12.4%	42.4%	12.6%	6.7%	25.9%
Grundy	20.0%	44.8%	6.0%	6.4%	22.8%
Hickman	15.5%	42.4%	9.4%	4.1%	28.6%
Houston	12.7%	46.0%	8.8%	4.9%	27.6%
Humphreys	12.3%	42.2%	10.2%	6.2%	29.1%
Jackson	17.4%	46.0%	9.9%	3.6%	23.1%
Lawrence	14.5%	42.2%	9.5%	6.0%	27.8%
Lewis	14.6%	39.8%	7.7%	3.2%	34.7%
Lincoln	13.1%	43.3%	11.5%	7.8%	24.3%
Macon	13.8%	39.0%	11.4%	6.1%	29.7%
Marshall	9.7%	34.7%	15.9%	10.1%	29.6%
Maury	7.5%	34.0%	18.6%	7.9%	32.0%
Montgomery	5.7%	27.3%	19.4%	12.4%	35.2%
Moore	10.9%	36.8%	16.3%	8.4%	27.6%
Overton	18.2%	45.0%	8.9%	4.6%	23.3%
Perry	17.6%	47.3%	9.7%	3.0%	22.4%
Pickett	18.6%	40.0%	10.6%	6.5%	24.3%
Putnam	11.3%	33.1%	18.4%	10.8%	26.4%
Robertson	11.2%	39.6%	15.5%	5.6%	28.1%
Rutherford	7.6%	28.1%	23.4%	10.9%	30.0%
Sequatchie	18.3%	37.5%	12.2%	6.7%	25.3%
Smith	12.6%	41.5%	12.6%	5.4%	27.9%
Stewart	10.1%	46.5%	11.6%	4.6%	27.2%
Sumner	8.2%	29.0%	22.0%	10.6%	30.2%
Trousdale	14.9%	52.2%	6.4%	3.7%	22.8%
Van Buren	15.8%	42.8%	8.6%	5.3%	27.5%
Warren	15.2%	47.3%	10.3%	4.8%	22.4%
Wayne	16.5%	46.1%	8.4%	4.1%	24.9%
White	16.6%	40.0%	9.5%	4.6%	29.3%
Williamson	4.1%	13.2%	38.3%	23.5%	20.9%
Wilson	6.5%	28.8%	24.9%	12.3%	27.5%

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Table C-10d. Average Educational Attainment - West Grand Division by County

County	Less Than Highschool Diploma	High School Diploma or Equivalent	Bachelor's Degree	Graduate or Professional Degree	Other
Benton	12.7%	48.3%	7.5%	4.9%	26.6%
Carroll	11.3%	41.9%	11.0%	7.9%	27.9%
Chester	14.3%	40.0%	11.8%	7.4%	26.5%
Crockett	14.0%	42.20%	10.60%	5.10%	28.1%
Decatur	15.8%	45.30%	12.50%	2.50%	23.9%
Dyer	10.9%	40.60%	13.30%	8.30%	26.9%
Fayette	9.1%	33.00%	18.20%	8.70%	31.0%
Gibson	11.6%	41.30%	12.20%	6.90%	28.0%
Hardeman	17.3%	44.10%	7.30%	4.00%	27.3%
Hardin	15.6%	44.00%	9.30%	5.50%	25.6%
Haywood	17.2%	46.20%	8.20%	4.90%	23.5%
Henderson	10.7%	49.60%	9.80%	4.60%	25.3%
Henry	11.6%	45.30%	12.00%	6.60%	24.5%
Lake	28.2%	43.10%	5.20%	4.20%	19.3%
Lauderdale	17.2%	48.00%	6.90%	4.10%	23.8%
Madison	18.4%	49.30%	7.90%	3.90%	20.5%
McNairy	17.7%	37.90%	10.10%	6.40%	27.9%
Obion	15.0%	44.30%	10.90%	7.10%	22.7%
Shelby	10.2%	27.40%	20.10%	14.10%	28.2%
Tipton	10.7%	36.40%	11.70%	6.70%	34.5%
Weakley	12.1%	45.40%	13.20%	8.50%	20.8%

Notes:

1. U.S. Department of Justice. n.d. *Language Map App 2015: Limited English Proficiency*. https://www.lep.gov/maps/lma2015/Final_508.

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Table C-11a. Population Distribution by Age Group – Grand Division and State Summary

Region of Interest	Population under 5	Population 5-13	Population 14-17	Population 18-24	Population 25-44	Population 45-64	Population above 65
East	136,965	264,586	130,602	233,815	651,635	686,400	530,176
East - Percentage of Population	5.2%	10.0%	5.0%	8.9%	24.7%	26.1%	20.1%
Middle	172,659	323,558	154,323	262,862	818,973	694,490	431,696
Middle - Percentage of Population	6.0%	11.3%	5.4%	9.2%	28.6%	24.3%	15.1%
West	97,389	186,118	87,728	132,225	409,721	378,298	265,845
West - Percentage of Population	6.3%	12.0%	5.6%	8.5%	26.3%	24.3%	17.1%
State Total	**407,013**	**774,262**	**372,653**	**628,902**	**1,880,329**	**1,759,188**	**1,227,717**
State - Percentage of Population	**5.8%**	**11.0%**	**5.3%**	**8.9%**	**26.7%**	**25.0%**	**17.4%**

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Table C-11b. Population Distribution by Age Group - East Grand Division by County

County	Classification	Population under 5	Population 5-13	Population 14-17	Population 18-24	Population 25-44	Population 45-64	Population above 65
Anderson	Suburban	4,232	8,354	4,254	6,121	20,208	20,900	16,165
Bledsoe	Rural	629	1,118	572	929	4,002	4,528	3,282
Blount	Urban	6,797	14,071	7,001	10,526	34,027	38,633	30,401
Bradley	Suburban	6,040	12,163	5,952	10,153	28,098	29,297	19,876
Campbell	Suburban	2,222	4,072	1,971	2,931	9,582	11,175	8,270
Carter	Suburban	2,379	4,852	2,616	4,637	13,496	15,888	13,154
Claiborne	Rural	1,606	3,040	1,584	3,015	7,882	8,806	6,721
Cocke	Suburban	1,924	3,786	1,931	2,497	8,394	10,584	8,288
Cumberland	Suburban	2,728	5,597	2,601	3,708	12,383	16,703	21,040
Grainger	Rural	1,256	2,226	1,256	1,779	5,494	7,268	5,402
Greene	Suburban	3,324	6,783	3,572	6,297	16,256	20,171	16,174
Hamblen	Suburban	4,036	7,877	3,864	5,516	15,984	17,360	11,579
Hamilton	Urban	22,154	39,331	18,589	31,373	104,387	92,896	71,134
Hancock	Rural	330	768	362	467	1,583	1,865	1,581
Hawkins	Suburban	2,701	5,486	2,919	4,209	13,342	17,002	12,941
Jefferson	Suburban	2,718	5,579	2,793	4,802	13,248	16,593	12,105
Johnson	Rural	771	1,471	785	1,271	4,318	5,349	4,410
Knox	Urban	27,114	52,055	24,952	60,035	134,685	118,955	82,873
Loudon	Suburban	2,853	5,724	2,741	3,892	12,214	16,143	17,024
Marion	Rural	3,112	5,899	2,838	4,424	13,148	14,816	11,441
McMinn	Suburban	5,925	10,998	5,263	10,043	24,379	24,300	18,285
Meigs	Rural	674	1,410	662	980	3,067	3,939	2,959
Monroe	Suburban	2,505	4,888	2,474	3,462	10,838	13,505	10,922
Morgan	Rural	1,001	2,166	1,054	1,665	5,679	5,858	4,150
Polk	Rural	880	1,625	873	1,299	4,013	5,592	3,751
Rhea	Rural	1,873	3,666	1,801	2,847	8,039	8,996	6,702
Roane	Suburban	2,561	5,299	2,679	3,876	12,600	15,718	13,363
Scott	Rural	1,314	2,530	1,276	1,860	5,397	5,932	3,862
Sevier	Suburban	5,388	10,125	5,121	7,251	23,512	27,158	20,860
Sullivan	Urban	7,673	15,172	7,907	11,814	38,862	44,277	36,430
Unicoi	Rural	773	1,614	793	1,256	4,038	5,049	4,233
Union	Rural	1,140	2,112	1,098	1,477	5,004	5,912	3,998
Washington	Urban	6,332	12,729	6,448	17,403	33,476	35,232	26,800

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Table C-11c. Population Distribution by Age Group - Middle Grand Division by County

County	Classification	Population under 5	Population 5-13	Population 14-17	Population 18-24	Population 25-44	Population 45-64	Population above 65
Bedford	Suburban	3,561	6,506	3,281	4,741	13,940	13,027	7,999
Cannon	Rural	947	1,633	725	1,014	3,797	4,141	2,806
Cheatham	Suburban	2,332	4,366	2,273	3,047	11,290	11,974	6,972
Clay	Rural	368	762	394	515	1,565	2,132	1,978
Coffee	Suburban	3,771	7,210	3,586	4,593	15,312	15,392	10,769
Davidson	Urban	45,660	68,978	30,699	69,697	249,041	153,239	95,020
DeKalb	Rural	1,259	2,216	1,093	1,572	5,149	5,902	4,034
Franklin	Suburban	2,256	4,288	2,069	5,386	9,804	11,446	9,405
Giles	Rural	1,568	3,167	1,572	2,559	7,011	8,311	6,533
Grundy	Rural	825	1,442	736	1,018	3,287	3,765	2,882
Hickman	Rural	1,464	2,673	1,290	1,997	6,760	6,898	4,744
Houston	Rural	424	881	446	611	1,998	2,313	1,720
Humphreys	Rural	972	1,854	1,132	1,368	4,661	5,294	3,928
Jackson	Rural	553	1,181	530	786	2,768	3,592	2,953
Lawrence	Suburban	2,940	5,846	2,776	3,528	11,119	11,735	8,170
Lewis	Rural	676	1,444	729	952	3,090	3,362	2,813
Lincoln	Suburban	2,039	3,892	2,173	2,694	8,394	9,569	7,408
Macon	Rural	1,701	3,474	1,481	2,063	6,913	6,886	4,275
Marshall	Suburban	2,242	4,367	2,053	2,784	9,758	9,616	6,141
Maury	Suburban	1,451	2,739	1,430	2,063	5,997	7,030	5,453
Montgomery	Urban	18,095	32,182	13,452	24,335	79,003	48,085	24,720
Moore	Rural	319	671	324	462	1,558	1,892	1,522
Overton	Rural	1,287	2,371	1,221	1,755	5,458	6,427	4,808
Perry	Rural	553	990	452	594	2,116	2,280	1,906
Pickett	Rural	214	414	222	333	966	1,506	1,473
Putnam	Suburban	4,515	8,655	4,224	12,219	21,007	19,203	14,021
Robertson	Suburban	4,837	9,092	4,428	5,882	20,461	20,264	11,812
Rutherford	Urban	22,511	45,340	22,052	42,555	106,467	85,950	42,226
Sequatchie	Rural	976	1,607	867	1,259	3,958	4,726	3,768
Smith	Rural	1,146	2,343	1,087	1,498	5,214	5,633	3,617
Stewart	Rural	694	1,512	720	1,044	3,288	3,963	3,001
Sumner	Suburban	11,722	23,879	11,757	15,897	55,064	54,158	35,517
Trousdale	Rural	633	1,169	516	1,219	4,316	2,806	1,612

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Table C-11c. Population Distribution by Age Group - Middle Grand Division by County

County	Classification	Population under 5	Population 5-13	Population 14-17	Population 18-24	Population 25-44	Population 45-64	Population above 65
Van Buren	Rural	331	693	310	418	1,336	1,851	1,554
Warren	Suburban	2,621	4,816	2,384	3,377	10,633	11,046	7,761
Wayne	Rural	694	1,249	730	1,196	4,352	4,616	3,229
White	Rural	1,535	3,149	1,436	2,037	6,808	7,774	5,953
Williamson	Urban	13,412	35,214	18,531	21,510	61,046	74,003	40,744
Wilson	Urban	9,555	19,293	9,142	12,284	44,268	42,683	26,449

Table C-11d. Population Distribution by Age Group - West Grand Division by County

County	Classification	Population under 5	Population 5-13	Population 14-17	Population 18-24	Population 25-44	Population 45-64	Population above 65
Benton	Rural	822	1,647	779	1,071	3,402	4,472	3,910
Carroll	Rural	1,503	3,197	1,553	2,824	6,537	7,441	5,805
Chester	Rural	919	1,940	951	2,324	4,134	4,270	3,068
Crockett	Rural	793	1,589	826	1,162	3,393	3,553	2,666
Decatur	Rural	564	1,174	637	802	2,557	3,192	2,730
Dyer	Suburban	2,382	4,360	2,063	2,950	9,033	9,189	6,521
Fayette	Suburban	2,224	3,741	1,960	2,890	9,951	12,977	10,432
Gibson	Suburban	3,016	6,337	3,067	3,992	12,795	12,901	8,937
Hardeman	Rural	1,306	2,453	1,264	2,170	7,149	6,413	4,812
Hardin	Rural	1,345	2,720	1,405	1,891	5,879	7,399	6,590
Haywood	Rural	972	1,919	952	1,375	3,922	4,440	3,748
Henderson	Rural	1,520	3,158	1,611	2,138	6,855	7,362	5,426
Henry	Rural	1,536	3,217	1,729	2,212	6,982	8,961	7,917
Lake	Rural	280	467	238	617	1,998	1,663	1,084
Lauderdale	Rural	1,460	2,613	1,368	2,180	6,525	6,256	4,208
Madison	Suburban	1,539	2,986	1,455	2,100	6,784	8,162	6,356
McNairy	Rural	6,875	12,531	5,811	7,913	30,894	27,066	19,670
Obion	Rural	1,777	3,334	1,553	2,284	7,174	7,807	6,482
Shelby	Urban	61,391	116,350	53,311	78,638	250,163	210,887	139,302
Tipton	Suburban	3,526	7,313	3,692	4,955	16,297	16,183	10,049
Weakley	Rural	1,639	3,072	1,503	5,737	7,297	7,704	6,132

Notes:

1. U.S. Census Bureau. n.d.. *Explore Census Data.* Retrieved January 1, 2025, https://data.census.gov/

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Table C-12. Daily Waste Generation by Tourists Across Global Destinations

Source/Destination	Waste per Tourist per Day (pounds)
UNEP – Europe	2.20
UNEP – USA	4.40
Koh Phayam, Thailand	5.95
Menorca, Spain	2.89
Crete, Greece	2.65
Global Median	2.43
Global Mean	3.68

Notes:

1. United Nations Environment Programme. 2011. *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication – Tourism Chapter*. United Nations Environment Programme. https://sustainabledevelopment.un.org/content/documents/126GER_synthesis_en.pdf.

2. Zsigraiová, Z., V. Semião, and F. Beijoco. 2013. The impact of tourism on municipal solid waste generation: The case of Menorca Island, Spain. *Waste Management & Research* 31(10): 976–982.

3. Kissinger, M., and D. Kasper. 2021. Tourism waste generation and the circular economy in island destinations: A framework for policy and planning. *Sustainability* 13(17): 9926. https://doi.org/10.3390/su13179926.

4. Schwartz, E., and B. Schauer. 2023. Tourist waste quantification in remote island settings: Koh Phayam case study. *International Journal of Environmental Research and Public Health* 20(6): 1037. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10370731.

5. Gössling, S., P. Peeters, C. M. Hall, J. P. Ceron, G. Dubois, L. V. Lehmann, and D. Scott. 2012. Tourism and water use: Supply, demand, and security. An international review. *Tourism Management.* 33(1): 1–15.

6. Palatty, M., and D. Swan. 2021. Tourism waste management practices in Southeast Asia: Case studies from Thailand and the Philippines. *Asia Pacific Journal of Tourism Research* 26(9): 980–995.

7. Tibbetts, J. 2002. Coastal cities: Living on the edge. *Environmental Health Perspectives* 110(7): A390–A397. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1240914.

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Table C-13a. Permitted and Operating Transfer Stations by County - East Grand Division by County

County	Facility Name	Domain (Public or Private)	Permittee/Owner	Average Daily Tons (2023, estimated)	Tons Accepted (2023)
Anderson	Aftermath Services LLC	Private	Aftermath Services LLC	Unknown	Unknown
Anderson	Oak Ridge Transfer Station	Private	Waste Connections of Tennessee, Inc.	0.0	0.0
Bradley	Waste Connections Of Tenn., Inc. Transfer Station	Private	Waste Connections of Tennessee, Inc.	Unknown	Unknown
Campbell	Campbell County Transfer Station	Public	Campbell County Government	66.9	20,551.4
Carter	Carter County Landfill Transfer Station	Public	Carter County Government	Unknown	Unknown
Claiborne	Claiborne County Solid Waste Transfer Facility	Public	Claiborne County Government	52.4	16,100.2
Cocke	City of Newport Solid Waste Transfer Station	Public	City of Newport	Unknown	Unknown
Cumberland	WM Crossville Transfer Station	Private	Cumberland Waste Disposal	Unknown	Unknown
Cumberland	Cumberland Waste Disposal Transfer Station - Crossville Site	Private	Waste Connections of Tenn., Inc. Dba Cumberland Waste Disposal	Unknown	Unknown
Greene	Greeneville/Greene County Transfer Station	Public	Town of Greeneville	122.1	37,488.9
Greene	Mountain Laurel Environmental Corporation	Private	Mountain Laurel Environmental Corporation	Unknown	Unknown
Hamilton	Signal Mountain Transfer Station	Public	Town of Signal Mountain	Unknown	Unknown
Hamilton	Collegedale Transfer Facility	Public	City of Collegedale	Unknown	Unknown
Hamilton	Bfi Chattanooga Transfer Station	Private	Bfi Waste Services, LLC	512.1	157,223.4
Hamilton	Global Envirotech, LLC	Private	Global Envirotech, LLC	Unknown	Unknown
Hamilton	Chattanooga Transfer Station, LLC	Private	Chattanooga Transfer, LLC	Unknown	Unknown
Hamilton	City Waste, LLC	Private	City Waste LLC	126.8	38,933.1
Hamilton	Wisdom Properties, LLC Transfer Station	Private	Capital Waste Services, LLC	Unknown	Unknown
Hamilton	CWS - Soddy Daisy Transfer	Private	Capital Waste Services, LLC	Unknown	Unknown
Johnson	Johnson County Transfer Station	Public	Johnson County Government	18.7	5,745.7
Knox	Knoxville Transfer Station	Private	Waste Connections of Tennessee, Inc.	Unknown	Unknown
Knox	Sharps Medical Waste Services	Private	Sharps Medical Waste Services	Unknown	Unknown
Knox	Stericycle Inc.	Private	Stericycle, Inc.	Unknown	Unknown
Knox	Trilogy MedWaste Southeast, LLC	Private	Trilogy MedWaste Southeast, LLC	Unknown	Unknown
Loudon	Waste Connections Of Tennessee, Inc. Lenoir City	Private	Waste Connections of Tennessee, Inc. Lenoir City	153.0	46,965.1
Loudon	Hickory Creek Road Transfer Station	Private	Summit Medical Waste	Unknown	Unknown
Marion	Solid Waste Disposal, Inc. Transfer Station	Private	Solid Waste Disposal, Inc.	Unknown	Unknown
Monroe	Monroe County Transfer Station	Private	Waste Connections of Tennessee, Inc.	Unknown	Unknown
Morgan	Morgan County Flat Fork Transfer Station	Public	Morgan County Government	30.0	9,208.7
Sevier	City Of Gatlinburg Transfer Station	Public	City of Gatlinburg	52.0	15,957.1
Sullivan	Sullivan County Transfer Station, Bristol	Public	Sullivan County Government	7.8	2,382.7
Sullivan	Sullivan County Transfer Station, Kingsport	Public	Sullivan County Government	28.8	8,856.6
Sullivan	Waste Management Of Tri-Cities	Private	Waste Management of Tri-Cities	Unknown	Unknown
Washington	Stericycle, Inc. Transfer Station	Private	Stericycle, Inc.	Unknown	Unknown

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Table C-13b. Permitted and Operating Transfer Stations by County - Middle Grand Division by County

County	Facility Name	Domain (Public or Private)	Permittee/Owner	Average Daily Tons (2023, estimated)	Tons Accepted (2023)
Bedford	Shelbyville City Transfer Station	Public	City Of Shelbyville	27.2	8,342.9
Bedford	Local Transfer, LLC	Private	Local Transfer, LLC	Unknown	Unknown
Cheatham	Sam's Creek Disposal	Public	Cheatham County Government	59.0	18,123.6
Coffee	CWS - Manchester Transfer	Private	Capital Waste Services, LLC	Unknown	Unknown
Davidson	Aftermath Services LLC-TN	Private	Aftermath Services LLC-Tn	Unknown	Unknown
Davidson	Bfi Waste Services LLC Freightliner Drive Transfer Station (AAA)	Private	Bfi Waste Services, LLC	Unknown	Unknown
Davidson	Reliable Pharmaceutical Returns, LLC	Private	Reliable Pharmaceutical Returns, LLC	Unknown	Unknown
Davidson	Stericycle, Inc.	Private	Stericycle, Inc.	Unknown	Unknown
Davidson	Antioch Pike Transfer Station	Private	Waste Connections of Tennessee, Inc.	Unknown	Unknown
Davidson	Music City Pick A Part, LLC	Public	Music City Transfer Station	1,059.0	325,098.5
Davidson	ProVira, LLC Transfer Station	Private	Provira, LLC	Unknown	Unknown
DeKalb	Dekalb County Transfer Station	Public	Dekalb County Government	78.2	24,008.9
Dickson	Dickson County Transfer Station	Public	Dickson County Government	203.6	62,516.8
Fentress	Fentress County (Woodyard) Transfer Station	Public	Fentress County Government	Unknown	Unknown
Franklin	Estill Springs Transfer Station	Public	Interlocal Solid Waste Authority	Unknown	Unknown
Giles	Bass Waste Removal & Recycling	Private	Bass Brothers, LLC	Unknown	Unknown
Hickman	Hickman County Transfer Station	Public	Hickman County Government	48.8	14,991.4
Houston	Houston County Transfer Station	Public	Houston County Government	15.6	4,785.2
Lawrence	Lawrence County Transfer Station	Public	Lawrence County Government	Unknown	Unknown
Lewis	Lewis County L-1 Transfer Station	Public	Lewis County Government	80.7	24,785.9
Lincoln	Fayetteville Transfer Station	Public	Interlocal Solid Waste Authority	107.7	33,074.8
Macon	Macon County Solid Waste Transfer Station	Public	Macon County Government	4.9	1,518.5
Montgomery	Bi-County Highway Drive Transfer Station	Public	Bi-County Solid Waste Management	Unknown	Unknown
Montgomery	TriHaz Solutions Medical Waste Transfer Station	Private	TriHaz Solutions, LLC	Unknown	Unknown
Maury	Maury County Sanitary Transfer Station	Public	Maury County Government	Unknown	Unknown
Maury	UDP Mt. Pleasant Disposal, LLC	Private	UDP Mt. Pleasant Disposal, LLC	Unknown	Unknown
Overton	Overton County Transfer Station	Public	Overton County Government	44.1	13,528.4

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Table C-13b. Permitted and Operating Transfer Stations by County - Middle Grand Division by County

County	Facility Name	Domain (Public or Private)	Permittee/Owner	Average Daily Tons (2023, estimated)	Tons Accepted (2023)
Perry	Perry County Tennessee	Public	Perry County Government	0.0	0.0
Pickett	Pickett County Transfer Station	Public	Pickett County	11.0	3,376.1
Robertson	Robertson Co Rdf Facility	Public	Robertson County Government	267.0	81,954.3
Rutherford	Rockwood Recycling - Murfreesboro Transfer Station	Public	Rockwood Recycling, LLC	Unknown	Unknown
Rutherford	Rutherford County Transfer Station	Public	Rutherford County Government	Unknown	Unknown
Sumner	Rasco Transfer Station	Public	Resource Authority in Sumner County	Unknown	Unknown
Sumner	UDP Cottontown Disposal, LLC	Private	Udp Cottontown Disposal, LLC	Unknown	Unknown
Sumner	Priority-OneLT LLC	Private	Priority-Onelt LLC	214.0	65,708.9
Sumner	Gallatin Transfer	Private	Technical Rail Services, LLC	Unknown	Unknown
Warren	McMinnville Transfer Station	Public	City Of Mcminnville	1.3	396.5
Warren	CWS - McMinnville Transfer Station	Private	Capital Waste Services, LLC	Unknown	Unknown
Wayne	Wayne County Solid Waste Facility	Public	Wayne County Government	Unknown	Unknown
White	City Of Sparta Transfer Station	Public	City Of Sparta	16.0	4,908.1
Williamson	Williamson County Solid Waste Transfer Station	Public	Williamson County Government	Unknown	Unknown
Williamson	City Of Franklin Transfer Station	Public	City Of Franklin	267.0	81,968.9

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Table C-13c. Permitted and Operating Transfer Stations by County - West Grand Division by County

County	Facility Name	Domain (Public or Private)	Permittee/Owner	Average Daily Tons (2023, estimated)	Tons Accepted (2023)
Carroll	Republic Services McKenzie Transfer Station	Private	Barker Brothers Waste, Inc.	Unknown	Unknown
Chester	Henderson Transfer Station	Public	Chester County Government	7.2	2,195.3
Decatur	UDP Bath Springs Disposal, LLC	Private	UDP Bath Springs Disposal, LLC	Unknown	Unknown
Haywood	Haywood County Transfer Station	Public	Haywood County Government	37.7	11,566.0
Henderson	Henderson County Transfer Station	Public	Henderson County Government	1.6	501.9
Henry	Paris Landfill Transfer Station	Public	City of Paris	Unknown	Unknown
Lauderdale	Lauderdale County Transfer Station	Public	Lauderdale County, Tennessee	Unknown	Unknown
Madison	Stericycle, Inc.	Private	Stericycle, Inc.	Unknown	Unknown
McNairy	McNairy County Transfer Station	Public	McNairy County Government	81.3	24,955.7
Shelby	Aftermath Services, LLC	Private	Aftermath Services, LLC - Memphis	Unknown	Unknown
Shelby	Waste Management of Tennessee Transfer Station	Private	Waste Management Inc. of Tennessee	Unknown	Unknown
Shelby	Trilogy MedWaste Southeast, LLC	Private	Liberty Tire Recycling, LLC	Unknown	Unknown
Shelby	Medical Waste Services, LLC	Private	Medical Waste Services, LLC	Unknown	Unknown
Shelby	Trilogy MedWaste Southeast, LLC	Private	Trilogy MedWaste Southeast, LLC	Unknown	Unknown
Shelby	City Of Bartlett Solid Waste Complex	Public	City Of Bartlett	119.5	36,678.0
Shelby	City Of Memphis Farrisview Transfer Station	Public	City Of Memphis	83.8	25,727.7
Shelby	Collierville Transfer Station	Public	Town Of Collierville	57.9	17,768.8
Shelby	Scott Street Transfer Station	Public	City Of Memphis	37.7	11,573.5
Shelby	Waste Connections of Tenn. Inc. Transfer Station	Private	Waste Connections of Tennessee, Inc.	Unknown	Unknown

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Table C-14a. Active Materials Recovery Facilities (MRFs) - East Grand Division by County

County	Facility Name	Domain (Public or Private)	Permittee (if applicable)/Owner
Cumberland	Crossville Super Center Convenience Center	Public	Cumberland County
Hamilton	WestRock Chattanooga Recycling Facility	Private	WestRock - Chattanooga
Knox	WestRock Knoxville Recycling Facility	Private	WestRock - Knoxville

Table C-14b. Active Materials Recovery Facilities (MRFs) - Middle Grand Division by County

County	Facility Name	Domain (Public or Private)	Permittee (if applicable)/Owner
Davidson	Nashville RRC River Hills	Private	Waste Management of Tennessee
Marshall	Marshall County Solid Waste & Recycling Hub	Public	Marshall County

Table C-14c. Active Materials Recovery Facilities (MRFs) - West Grand Division by County

County	Facility Name	Domain (Public or Private)	Permittee (if applicable)/Owner
Chester	West TN Recycling Hub	Public	Chester County
McNairy	MRF Transfer Station	Private	MRF Recycling
Shelby	Republic Services - Memphis TN MRF	Private	Republic Services

Notes:

1. Tennessee Department of Environment and Conservation. 2025. *Solid Waste Management Permit Database* . https://dataviewers.tdec.tn.gov/dataviewers/f?p=19035:34001.

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Table C-15a. Permitted and Operating Composting and Organics Processing Facilities - East Grand Division by County

County	Facility Name	Domain (Public or Private)	Permittee (if applicable)/Owner
Sevier	Sevier Solid Waste Compost Facility	Public	Sevier Solid Waste, Inc.
Washington	Hoffman Composting Facility	Private	Hugo J. Hoffman

Table C-15b. Permitted and Operating Composting and Organics Processing Facilities - Middle Grand Division by County

County	Facility Name	Domain (Public or Private)	Permittee (if applicable)/Owner
Cheatham	The Compost Company, LLC	Private	Compost Company, LLC
Rutherford	Southeastern Tier 3 Compost Facility	Private	Southeastern Compost, LLC

Table C-15c. Permitted and Operating Composting and Organics Processing Facilities - West Grand Division by County

County	Facility Name	Domain (Public or Private)	Permittee (if applicable)/Owner
Madison	TWRA Region 1 Wildlife Health Facility - Composting Site	Public	TWRA Region 1 Wildlife Health Facility Composting Site
Shelby	Earth Complex City of Memphis	Public	City of Memphis

Notes:

1. Tennessee Department of Environment and Conservation. 2025. *Solid Waste Management Permit Database* . https://dataviewers.tdec.tn.gov/dataviewers/f?p=19035:34001.

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Table C-16a. Remaining Capacity Overview of Active Class I Landfills – Grand Division and State Summary

Region of Interest	2014 Total Tons Accepted by Year (cubic yards)	2023 Total Tons Accepted by Year (cubic yards)	Change in Total Tons Accepted by Year (cubic yards)	2023 Permitted Remaining Airspace (cubic yards)
East	2,885,033	3,900,820	Increased (↑)	98,621,823
East - Average	206,074	278,630	Increased (↑)	2,988,540
Middle	1,944,883	2,157,693	Increased (↑)	24,867,381
Middle - Average	324,147	359,615	Increased (↑)	606,521
West	1,483,794	2,435,373	Increased (↑)	151,495,404
West - Average	211,971	304,422	Increased (↑)	7,214,067
Total	**6,313,710**	**8,493,885**	Increased (↑)	**274,984,608**
Total - Average	**233,841**	**303,353**	Increased (↑)	**2,894,575**

Table C-16b. Remaining Capacity Overview of Active Class I Landfills - East Grand Division by County

County	Facility Name	Domain (Public or Private)	Permittee/ Owner	Average Daily Tons	Total Tons Accepted by Year (2014)	Total Tons Accepted by Year (2023)	Change of Total Tons Accepted by Year	Closure Estimate Information (as of 2023) Permitted Remaining Airspace (cubic yards)	Closure Estimate Information (as of 2023) Estimated Closure Year
Anderson	Chestnut Ridge	Private	Waste Management, Inc. of Tennessee	1,042	325,104	440,416	Increased (↑)	16,445,775	2070
Blount	Alcoa- Maryville/Blount County	Public	City of Alcoa	200	62,400	128,856	Increased (↑)	12,993,240	2042
Bradley	Bradley County	Public	Bradley County Government	1,100	343,200	357,360	Increased (↑)	9,035,282	2042
Hamblen	Lakeway Recycling and Sanitation	Private	Lakeway Sanitation & Recycling MSW, LLC	475	148,200	227,825	Increased (↑)	1,764,484	2030
Hamblen	Morristown Balefill Landfill	Public	Hamblen County/Morristown Solid Waste Board	Unknown	NA	Unknown	No Change	2,842,731	2025
Hamilton	City of Chattanooga	Public	City of Chattanooga	304	94,848	33,623	Decreased (↓)	5,009,835	2073+
Hawkins	Carter Valley	Private	Bfi Waste Systems of Tennessee, LLC	795	248,040	115,135	Decreased (↓)	6,642,212	2073+
Jefferson	Jefferson County	Public	Jefferson County Government	80	24,991	26,320	Increased (↑)	2,668,574	2073+
Loudon	Loudon County	Public	Loudon County Solid Waste Disposal Commission	923	287,976	146,959	Decreased (↓)	590,081	2026
McMinn	Meadow Branch	Private	Environmental Trust Company	1,330	414,960	803,316	Increased (↑)	12,313,117	2034
Rhea	Rhea County	Public	Rhea County Government	668	208,416	355,361	Increased (↑)	913,043	2025
Scott	Volunteer Regional	Private	Scott Solid Waste Disposal Company	1100	343,200	330,759	Decreased (↓)	8,418,285	2047
Sevier	Sevier Solid Waste Inc.	Private	Sevier Solid Waste, Inc.	5	1,560	18,976	Increased (↑)	329,099	2030
Sullivan	Ecosafe Systems LLC	Private	Ecosafe Systems, LLC	459	143,146	568,752	Increased (↑)	31,730,080	2073+
Washington	Iris Glen Environmental	Private	Iris Glen Environmental Center	689	214,968	176,951	Decreased (↓)	3,371,760	2040

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Table C-16c. Remaining Capacity Overview of Active Class I Landfills - Middle Grand Division by County

County	Facility Name	Domain (Public or Private)	Permittee/ Owner	Average Daily Tons	Total Tons Accepted by Year (2014)	Total Tons Accepted by Year (2023)	Change of Total Tons Accepted by Year	Closure Estimate Information (as of 2023) Permitted Remaining Airspace (cubic yards)	Closure Estimate Information (as of 2023) Estimated Closure Year
Clay	Upper Cumberland	Private	Upper Cumberland Solid Waste Management	60	18,720	35,926	Increased (↑)	198,613	2025
Marshall	Cedar Ridge	Private	Cedar Ridge Landfill, Inc.	1590	496,080	707,261	Increased (↑)	5,708,475	2032
Montgomery	Bi County Balefill	Public	Bi-County Solid Waste Management System	1000	312,000	317,168	Increased (↑)	2,932,002	2032
Rutherford	BFI Middle Point Landfill	Private	Bfi Waste Systems of Tennessee, LLC	3,500	1,092,000	1,037,030	Decreased (↓)	7,432,727	2030
Smith	Smith County	Public	Smith County Government	107	33,384	230,442	Increased (↑)	174,010	2024
White	White County	Private	WMWC, LLC	55	16,723	75	Decreased (↓)	26,666	2025
Williamson	Williamson County Landfill	Public	Williamson County Government	Unknown	NA	NA	No Change	8,394,888	Unknown

Table C-16d. Remaining Capacity Overview of Active Class I Landfills - West Grand Division by County

County	Facility Name	Domain (Public or Private)	Permittee/ Owner	Average Daily Tons	Total Tons Accepted by Year (2014)	Total Tons Accepted by Year (2023)	Change of Total Tons Accepted by Year	Closure Estimate Information (as of 2023) Permitted Remaining Airspace (cubic yards)	Closure Estimate Information (as of 2023) Estimated Closure Year
Benton	West Camden	Private	Waste Management, Inc. of Tennessee	770	240,240	526,365	Increased (↑)	12,655,820	2042
Dyer	Dyersburg City	Public	City of Dyersburg	120	37,440	31,077	Decreased (↓)	2,940,177	2058
Hardeman	Boliver/Hardeman County	Public	Hardeman County Government	47	14,555	14,286	Decreased (↓)	522,835	Unknown
Madison	Madison County Dev LLC	Private	Madison County Development LLC	80	24,991	241,771	Increased (↑)	11,181,061	2064
Obion	ECM of Ridgely LLC	Private	ECM of Ridgely, LLC	150	46,800	31,169	Decreased (↓)	21,485,381	2073+
Obion	Republic Services - NWTN EXT 1 & 2	Private	Northwest Tennessee Disposal Corporation	Unknown	NA	235,785	No Change	7,858,956	2055
Shelby	BFI South Shelby	Private	Bfi Waste Systems of North America LLC	2,190	683,280	1,045,916	Increased (↑)	35,547,305	2044
Shelby	BFI North Shelby	Private	Bfi Waste Systems of North America LLC	1399	436,488	309,003	Decreased (↓)	59,303,869	2024

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ATTACHMENT D

Stakeholder Engagement and Public Outreach

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D-1 Stakeholder Engagement and Public Outreach

Successful solid waste planning and management hinges on effectively engaging stakeholders and the public. For purposes of the 2035 Plan, stakeholders include government officials, solid waste management professionals, industry representatives, organizations, and others with a direct role or interest in Tennessee's solid waste management system, while the public includes Tennessee residents and other community members more broadly. Engagement with these groups is crucial for gathering information, feedback, concerns, and ideas and providing opportunities for input throughout development of the 2035 Plan.

D-1.1 Stakeholder Engagement

To ensure comprehensive engagement throughout the planning process, a multifaceted approach was implemented involving:

- Stakeholder Engagement Form: A digital input form was distributed to collect detailed stakeholder perspectives, concerns, priorities, and recommendations.
- Stakeholder Engagement Workshops: In-person and virtual workshops were conducted to facilitate in-depth discussions, assess Tennessee's solid waste management system, and generate and prioritize ideas for addressing identified needs and opportunities.
- Stakeholder Steering Committees: Two targeted stakeholder committees were convened at different stages of Plan development to provide focused review and feedback.
- UST-SWDCB Meeting: The first draft of the 2035 Plan was presented in person to the UST-SWDCB to gather feedback and respond to questions prior to development of the final Plan.

These engagement efforts provided input on existing conditions, system challenges, priorities, opportunities, and potential approaches for consideration in the 2035 Plan. The following sections describe these engagement methods and summarize the information and insights collected through each approach.

Stakeholder Engagement Form

One key component of the stakeholder engagement strategy was the digital Tennessee Solid Waste Management Plan Stakeholder Engagement Form, distributed email from December 2024 through January 2025 to a targeted list of more than 400 stakeholders, primarily state and local government officials and other individuals involved in solid waste management across Tennessee. The form consisted of thirteen multiple-choice, Likert-scale, or open-ended questions covering solid waste management topics and demographic information. Its primary goal was to gather insights from the solid waste sector to help shape an inclusive vision for the future of solid waste management in the state. Key results are described below.

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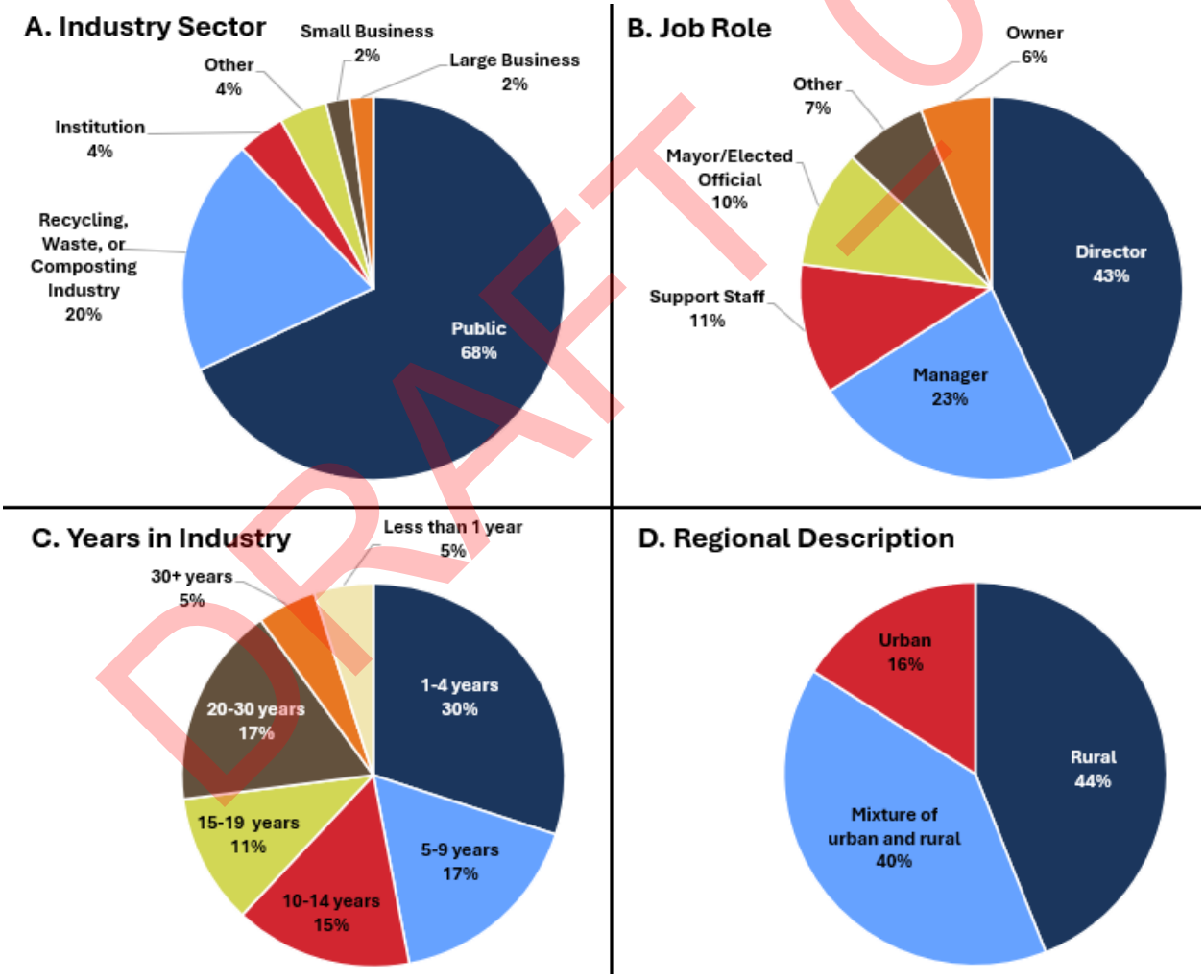
Responses were collected from 82 individuals, representing a response rate of approximately 20%. **Figure D - 1** details the breakdown of respondents by solid waste industry sector, job role, years of experience, and regional description.

Respondents indicated that their biggest concern about waste in Tennessee is "running out of landfill space" (36%). The next most frequently identified concerns were "lack of infrastructure to divert waste" (18%) and "lack of markets for recycling/composting" (18%), with these top three concerns accounting for 72% of responses. The engagement form also revealed limited confidence in existing infrastructure to handle future waste, with 52% of respondents being either "not very confident" or "not at all confident." Only 17% were "very confident" in the current infrastructure's ability to manage future waste.

Figure D - 1: Stakeholder survey respondents by solid waste industry sector (A), job role (B), years of experience (C), and regional description (D).



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Most (94%) respondents believe that state and local governments should invest in infrastructure to keep trash out of landfills. Over three-quarters indicated that such investment is "very important" (78%), while an additional 16% said it was "somewhat

important." When asked to select the five most important priorities for managing waste in Tennessee, respondents prioritized: 1) waste reduction, 2) illegal dumping, 3) education for waste diversion, 4) rural recycling, and 5) WTE initiatives.

The engagement form also asked respondents to provide feedback and recommendations regarding the future of waste management in Tennessee. "Financial assistance" (34%) was identified most frequently as helpful for planning waste management and diversion efforts, followed by "best practices for waste processing" (15%) and "regional collaboration forums" (12%). Respondents similarly identified "funding" (24%) as the top area where the state could assist with industry waste management, followed by "policy" (18%) and "infrastructure" (14%).

Stakeholder Engagement Workshops

Geosyntec and Transformations PR, in coordination with TDEC, hosted five workshops alongside TDEC's Annual Progress Meetings in January 2025: four in-person and one virtual. The in-person workshops were held in Chattanooga on January 5 (23 attendees), Morristown on January 8 (19 attendees), Jackson on January 14 (30 attendees), and Nashville on January 16 (39 attendees), followed by a virtual workshop on January 22 (33 attendees). A total of 144 stakeholders participated, including professionals from various sectors familiar with solid waste management. Over half of the participants (57%) work for City or County governments as elected officials, public works employees, and other municipal decision-makers. Nearly a third (30%) represented private sector organizations and non-profits, with the remaining participants from higher education, Districts, and federal research labs. **Table D - 1** presents the distribution of workshops, attendees, and the sectors they represent.

Table D-1. Summary of Stakeholder Workshop Attendees

Industry Sector	Chattanooga	Morristown	Jackson	Nashville	Virtual
Public	16	15	24	25	21
Large Business	0	0	1	7	3
Small Business	0	1	0	2	2
Recycling or Composting	3	2	0	1	0
Institution	1	0	0	3	4
Non-Profit	3	1	2	0	2
Other	0	0	3	1	1

The stakeholder engagement workshops fostered collaboration, gathered diverse input, and generated ideas for addressing solid waste management needs and opportunities. The interactive format encouraged open dialogue focused on identifying challenges, discussing potential solutions, and prioritizing ideas and actions.

Each workshop followed a structured agenda that included an overview of existing conditions of Tennessee's solid waste management system, live polling to capture participant perspectives, a SWOT analysis, a consensus-building activity, and goal setting. Together, these activities allowed stakeholders to identify existing strengths and challenges

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and generate and prioritize ideas for addressing solid waste management needs and opportunities based on significance and potential impact.

The opening presentation provided context on Tennessee's solid waste management system and established the workshop objectives. During live polling, participants were asked to describe the current direction of solid waste management in Tennessee using one word. Cumulative responses are presented in the word cloud in **Figure D - 2**, highlighting common themes identified by stakeholders.

Figure D - 2: Word cloud illustrating stakeholders' key themes and sentiments regarding solid waste management in Tennessee



The cumulative results identified several recurring themes, with terms such as "political," "complicated," "stagnant," "increasing," and "unsustainable" appearing most frequently. Additional terms included "expensive," "limited," and "bureaucratic." Other live polling results identified funding as the most frequently cited challenge across workshop locations, with collaboration and infrastructure also identified as challenges. Participants identified policies and regional collaboration among the leading opportunities, along with infrastructure and education.

Participants then conducted SWOT and consensus-building activities to evaluate potential improvements to the solid waste management system and identify priorities and needs. These exercises generated ideas related to compliance, infrastructure, funding, collaboration, innovation, data, organics management, education, and recycling markets.

In East Tennessee (Chattanooga and Knoxville), strengths included maintaining operations and stakeholder commitment, while weaknesses centered around communication with policymakers and infrastructure funding. Opportunities were identified in increasing Class III landfill airspace and reducing landfill volume through recycling and composting, with threats stemming from political influences and public trust issues.

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In Middle Tennessee (Nashville), strengths were found in existing programs and a strong market, but weaknesses included a politically conservative environment and a lack of resident understanding of recycling. Opportunities focused on funding and equipment, additional landfill capacity, and better networking with end markets, while threats involved public perception of disposal costs and lack of airspace.

West Tennessee (Jackson) highlighted strengths in regional collaboration and major corporations wanting recycled material, with weaknesses in policy enforcement and funding issues. Opportunities were seen in educating the public and elected officials on operations and enforcing existing policies, while threats included running out of landfills and illegal dumping.

The virtual workshop, which included participants from across Tennessee, identified composting opportunities and existing recycling programs as strengths. Reporting consistency and infrastructure were identified as weaknesses, while opportunities included organics management and development of in-state end markets. Public participation and political support were identified among the threats.

Overall, the SWOT analysis identified recurring needs for improved funding, collaboration, infrastructure, education, data, and market development, along with opportunities for regional approaches and innovative solutions. The ideas and priorities generated through the workshops were considered during development of the 2035 Plan's objectives, strategies, and actions.

Stakeholder Steering Committees

In addition to the stakeholder engagement workshops, TDEC conducted targeted stakeholder engagement activities to support the development of the Plan and to solicit focused feedback. These efforts were carried out through two separate stakeholder committees convened at different stages of Plan development.

The first stakeholder committee consisted of a mix of public- and private-sector solid waste professionals representing a broad range of industry perspectives and system roles. This committee met between June and September 2025 and provided input during the development of the draft Plan, including identifying key issues, opportunities, and considerations to be addressed in the Plan.

A second stakeholder committee was formed exclusively of representatives from the private solid waste industry sector through the Tennessee Chamber of Commerce to provide feedback on the draft Plan. This committee met during March and April 2026 to review the draft Plan and offer targeted comments and recommendations. Input received through both stakeholder committees was considered alongside public comments in finalizing the Plan.

Underground Storage Tanks and Solid Waste Disposal Control Board Engagement

Separately from the stakeholder committees, TDEC presented the first draft of the 2035 Plan to the UST-SWDCB. The presentation provided the Board with an overview of the draft

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2035 Plan and an opportunity to provide feedback and ask questions prior to development of the final 2035 Plan.

D-1.2 Public Engagement

TDEC conducted three formal public comment periods to provide opportunities for public input at key stages of development of the 2035 Plan.

The first formal public comment period, conducted from November 2024 through January 2025, provided an early opportunity for the public and stakeholders to submit comments for consideration during Plan development.

The second formal public comment period began March 22, 2026, and remained open through April 30, 2026. Notice of the public comment period and public hearings was provided through the TDEC website and other established public notification channels, and the draft Plan was made available on the TDEC website. TDEC conducted five public hearings, including four in-person hearings held on March 31, 2026 (Chattanooga), April 1, 2026 (Knoxville), April 7, 2026 (Jackson), and April 8, 2026 (Nashville), as well as one virtual public hearing on April 9, 2026. Written comments were accepted throughout the public comment period. All comments received were reviewed and considered in revising the Plan, and DLP published responses to public comments on the TDEC website on June 11, 2026.

A third formal public comment period is being conducted from November through December 2026 to provide an additional opportunity for the public and stakeholders to review and comment on the 2035 Plan prior to finalization. TDEC will consider comments received during this period and incorporate revisions, as appropriate, into the final Plan.

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APPENDIX 1

TDEC Waste Characterization Study

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Tennessee Statewide Material Characterization & Recycling Study

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Department of Environment & Conservation

Tennessee Department of Environmental Conservation
500 James Robertson Parkway
Nashville, TN 37243
888-891-8332

SCS ENGINEERS

02224033.00 | May 11, 2026

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1 EXECUTIVE SUMMARY

The State of Tennessee commissioned this statewide waste characterization study to establish an updated baseline for materials management planning and to identify the highest-impact opportunities to prevent waste, expand diversion, and improve recycling system performance. Field activities were completed at 10 solid waste facilities across Tennessee's grand divisions. For Municipal Solid Waste (MSW), 390 samples collected from April 2025 through March 2026 were manually sorted into 10 major material categories and 47 material types. Reported results reflect statewide averages derived from the sample set, with associated variability measures (including confidence intervals) to support interpretation and planning.

The Tennessee Statewide Material Characterization and Recycling Study provides a current, decision-grade baseline on what materials are being disposed and managed statewide. Additionally, this study provides insight on the opportunities for material diversion and alternative processing and what it means for program design, infrastructure investment, and policy priorities.

OVERALL STATEWIDE MSW COMPOSITION

The overall statewide MSW composition results (summarized in **Exhibit 2** and detailed in **Table 4**) show that organics and paper dominate Tennessee's disposed waste stream. Combined, these two categories represent 56.1 percent of MSW by weight, indicating that most disposed materials are potentially divertible through a combination of organics management (food waste prevention, donation, composting/anaerobic digestion) and stronger paper/cardboard recovery.

Across all statewide MSW samples, the five most common material types by weight were:

- Wasted Food – Edible (15.1 percent)
- Old Corrugated Cardboard (7.2 percent)
- Compostable Paper (6.4 percent)
- Textiles and Shoes (5.2 percent)

These leading material types indicate that (1) food waste is the single largest disposed material component, (2) fiber-based packaging (especially corrugated cardboard) remains a significant opportunity for additional recovery, (3) food-soiled/compostable paper represents a meaningful portion of disposed materials that is generally not suitable for traditional paper recycling, and (4) textiles are a persistent and often under-addressed component of the disposed stream.

KEY INSIGHTS FROM STATEWIDE RESULTS

- **Residential and commercial streams are compositionally similar at the category level.** The report notes that organics and paper account for 55.0 percent of the residential MSW stream and 55.0 percent of the commercial MSW stream. This reinforces that statewide diversion gains will require strategies that work across both sectors, while still recognizing material-type differences within each sector.

- **Material-type priorities differ by sector.** Residential MSW is comprised of wasted food (edible) at 14.5 percent, followed by "Other" (8.8 percent), compostable paper (6.6 percent), paperboard (5.3 percent), and fines (5.1 percent). Commercial MSW is comprised of wasted food (edible) at 15.9 percent, followed by old corrugated cardboard (10.6 percent),

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compostable paper (6.2 percent), "Other" (5.6 percent), and textiles and shoes (5.4 percent). In practical terms, commercial diversion strategies should heavily emphasize cardboard capture and food waste programs in food service and hospitality settings, while residential strategies should pair food waste prevention/diversion with packaging-focused education and system design that reduces small-material loss to fines.

- **Most disposed MSW is residential by tonnage.** Gate survey results summarized in the report indicate an average statewide split of 63.1 percent residential and 36.9 percent commercial (based on surveyed inbound loads). This suggests that statewide outcomes will be strongly influenced by residential service access, participation, and correct set-out behaviors—while targeted commercial programs remain essential for capturing high-volume generators of corrugated cardboard and food waste.

IMPLICATIONS AND PRIORITY OPPORTUNITIES

The statewide composition results point to a small number of material groups that drive the majority of disposed tonnage. In particular, organics (30.7 percent of overall MSW) and paper (25.4 percent of overall MSW) represent the largest recoverable fractions, followed by plastics (18.9 percent, combining rigid and film). Together, these categories define the core opportunity set for statewide diversion planning.

- **Organics management (largest opportunity):** With wasted food (edible) alone at 15.1 percent of disposed MSW (plus additional inedible food and other organics), strategies that combine food waste prevention, edible food recovery, and organics processing capacity (composting and/or anaerobic digestion) are likely to produce the largest system-wide disposal reductions.

- **Paper and cardboard recovery:** Corrugated cardboard (7.2 percent overall; 10.6 percent in the commercial stream) supports targeted commercial recycling approaches (e.g., service requirements or incentives for high-generating businesses) alongside continued residential recycling system improvements.

- **Compostable paper alignment:** Compostable paper represents 6.4 percent of disposed MSW and often requires alignment between organics programs and processing facility acceptance policies (e.g., food-soiled paper inclusion criteria).

- **Plastics strategy split (rigid vs. film):** Plastics represent a substantial share of disposed MSW and typically require separate solutions for rigid containers versus film plastics, which are commonly excluded from curbside programs.

- **Textiles and reuse pathways:** Textiles and shoes represent 5.2 percent of disposed MSW, indicating potential value in reuse, repair, take-back, and targeted collection approaches that divert durable goods prior to disposal.

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ACKNOWLEDGEMENTS

The SCS project team would like to thank the staff at the Tennessee Department of Environment and Conservation for their assistance in selecting and communicating with host facilities for the Tennessee Statewide Waste Characterization Study. SCS would also like to thank each host facility and their management and operations staff for their participation in and support of this project. This study would not have been possible without selected facilities graciously hosting field activities.

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2 BACKGROUND



The State of Tennessee commissioned a statewide waste characterization study to answer a straightforward but foundational question: *what is actually being thrown away in Tennessee, where is it coming from, and what opportunities exist to recover value before materials are disposed?* Solid waste policy, infrastructure investment, and public education campaigns are most effective when they are grounded in current, reliable, state-specific data. Without an updated measurement of what materials are generated, disposed, and managed in Tennessee, it is difficult to set realistic diversion goals, prioritize materials, or measure progress over time.

The Tennessee Department of Environment and Conservation (TDEC) utilized funding provided through the Solid Waste Infrastructure for Recycling (SWIFR) Grant Program to complete this study. TDEC contracted with SCS Engineers to design and complete the study. TDEC pursued the study to strengthen statewide planning in an environment of rising disposal costs, evolving recycling markets, and increasing public expectations for sustainable materials management. Communities and regional planning entities face practical questions about how to extend landfill life, reduce long-term liabilities, and manage materials that can create operational challenges (such as food waste, film plastics, or lithium batteries). A waste characterization study provides the evidence needed to decide whether solutions should focus on preventing waste at the source, expanding recycling access, developing organics processing capacity, improving contamination reduction, or targeting specific commercial or institutional generators. In other words, the study converts "we should recycle more" into a clear picture of *which* materials, *from where*, and *through what programs* will deliver the greatest impact.

Another key driver for commissioning the study was TDEC's interest in returning recoverable materials to productive use and supporting a more circular economy. Composition data helps quantify how much potentially recyclable paper, cardboard, metals, plastics, and glass are still entering the waste stream, as well as how much organics are being buried rather than composted or otherwise managed. This information is valuable not only for public agencies, but also for private companies evaluating new or expanded material recovery, composting, reuse, or manufacturing facilities that depend on predictable feedstock. By documenting what is available in the waste stream - and at what scale across Tennessee's regions - the study helps reduce uncertainty for investments that can create jobs, improve environmental outcomes, and keep dollars circulating within the state.

TDEC also commissioned the study to ensure that public resources—particularly funding made available through the SWIFR Grant Program - could be directed strategically and evaluated transparently. Waste characterization results provide a defensible basis for identifying infrastructure gaps, designing grant criteria, and selecting projects that align with demonstrated needs (for

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example, organics processing where food waste is a large fraction of disposed materials, or recycling system upgrades where contamination is undermining recovery). Just as importantly, a statewide baseline creates a reference point for future studies, allowing Tennessee to track how the waste stream changes as new programs are implemented, new products enter the market, and residents and businesses respond to outreach and service expansions.

Finally, Tennessee commissioned the statewide waste characterization study to update data from previous studies. The 2025 study's broader geographic coverage across Tennessee's grand divisions, multiple permitted facilities, and multiple material streams was designed to produce more representative, decision-grade data. Collectively, these motivations reflect a practical intent: to give TDEC, local governments, and industry partners a shared, data driven understanding of Tennessee's waste stream so they can prioritize actions, invest wisely, and measure progress toward reducing disposal and increasing material recovery.

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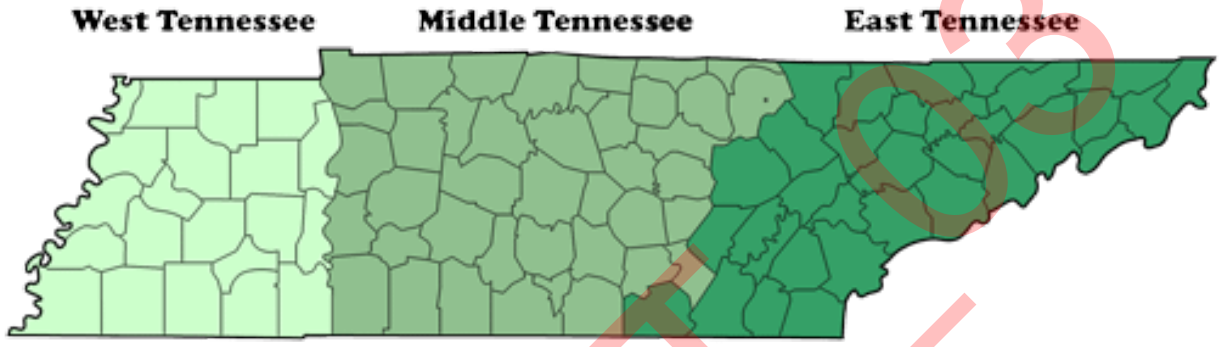
3 METHODS

To establish the statewide waste profile, field events occurred at 10 solid waste facilities located throughout the State of Tennessee. To acquire representative data, the study was designed to visit solid waste facilities located in each of the Tennessee grand divisions. **Exhibit 1** depicts the grand divisions of Tennessee.

Exhibit 1. Tennessee Grand Divisions



Approximately 50 samples of municipal solid waste (MSW) or source-separated recyclable materials were collected during each field event that typically lasted for one week. Samples were collected from randomly selected trucks that delivered MSW or recyclables to a disposal site.

MANUAL CHARACTERIZATION

A manual characterization method was used to characterize MSW materials at landfills and recyclable materials at MRFs across Tennessee. This section describes the methods used to perform the manual characterization of these materials.

Sampling Plan

Prior to beginning fieldwork, the SCS team prepared a sampling plan based on the specific waste quantity data and distribution across material generating sectors specific to each facility hosting waste characterization field events. The sampling plans were used to guide sampling and sorting activities at each facility. These plans specified the targeted number of residential and commercial samples to obtain and sort based on the proportion of MSW received from each of these generating sectors. The sampling plans specified that up to 50 MSW or recycling samples were to be characterized at each facility based on a five-day work week.

Sample Selection and Screening

The SCS team screened incoming loads of materials at the scale house or at another designated location to select loads for sorting that align with each facility's sampling plan. The screening included a brief interview with the truck driver to confirm waste source and location, and generating sector of the materials on the truck.

Drivers with loads selected for sampling were directed to a designated area to discharge their load. At most facilities, SCS field personnel relied on the support of a facility-provided heavy equipment

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operator to obtain the sample and deliver it to the sorting location. SCS staff recorded details of the sample electronically on a sample data form that was unique to each sample. Information recorded included material generating sector, hauler name, and truck number.

Sample Acquisition

Following material screening and selection, a random material sample was obtained directly by SCS staff or with the assistance of a facility heavy equipment operator. Material samples were placed in pre-weighed 35-to 45-gallon containers and subsequently weighed until at least 200 pounds of materials were obtained. Material samples were staged near the sorting location to manage and track each sample.

Material Categories and Types

Municipal Solid Waste

In partnership with TDEC staff, MSW material samples analyzed were grouped into 10 major material categories and 47 material types. Individual members of the SCS sort team were assigned select material categories and sorted waste into the designated material types. **Table 1** lists the material categories and types measured as part of this study. Examples of materials corresponding to each type are also provided.

Table 1. Municipal Solid Waste Material Categories and Types

Material Category	Material Type		Definitions/Examples
Paper	Sorted Office Paper		Bleached paper; white high-grade paper
	Newspaper and Magazines		Daily/weekly/monthly newspapers
	Mixed Paper		Construction paper, manila folders, junk mail, etc.
	Compostable Paper		Napkins, tissues, and paper towels
	Old Corrugated Cardboard		Shipping/pizza boxes
	Paperboard		Boxboard, chipboard; brown or white inside color; beer/soda cases, cereal boxes
	Other Paper (non-recyclable)		Composite paper; waxed cardboard; other paper not fitting another paper category
Plastic	Rigid	PET #1	Rigid containers with #1; water, soda bottles and containers
		HDPE #2	Rigid containers with #2; milk cartons, jars/tubs, cups, bottles, natural or pigmented
		PVC #3	Rigid containers with #3; food/drink
		LDPE #4	Rigid containers with #4; squeeze bottles
		PP #5	Rigid containers with #5; food containers/cups, auto parts, industrial fibers

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Material Category	Material Type		Definitions/Examples
Plastic		PS #6	Rigid containers with #6; utensils, cups/lids, video cassettes, clamshells, expanded PS
		Durable Plastics	Laundry baskets, toys, buckets, PVC, flooring, etc.
		#7 and Other Plastic	Straws, cutlery, lids, etc.
	Film	Garbage Bags	Trash can liners, bags used to hold MSW
		Retail Bags	Grocery bags, shopping bags, etc.
		Other Film Plastic	Chip bags, storage bags, produce bags, plastic wrap
Organics	Wasted Food (edible)		Food waste that could have been eaten or donated
	Wasted Food (inedible)		Peels, eggshells, coffee grounds, FOG, etc.
	Yard Waste		Leaves, branches, grass clippings, garden waste, agricultural waste
	Wood (Non-C&D)		Treated or untreated wood, packaging, wooden utensils, other non-C&D wood
	Textiles and Shoes		Clothing, rags, sheets, towels, shoes, pillows, bags, belts, shoes
	Other Organics		Food processing wastes, cat litter, animal by-product
Metals	Steel and Tin Cans		Food and beverage cans
	Aluminum Cans		Soda/beer/sparking water cans, cat food, paint/varnish cans, aerosol cans
	Aerosol Cans		Metal spray cans for painting, body spray, whipped cream
	Other Ferrous Metal		Cast iron and iron
	Other Non-Ferrous Metal		Aluminum foil/trays/pans, copper, titanium, lead, zinc, brass/bronze
Glass	Clear Glass		Clear food/beverage bottles and jars
	Green Glass		Green food/beverage bottles and jars
	Amber Glass		Amber food/beverage bottles and jars
	Blue Glass		Blue food/beverage bottles and jars
	Other Glass		Lightbulbs, Pyrex, sheet glass; crushed, mixed glass
C&D Material	Drywall		Clean or painted drywall sheets
	Wood		Untreated/treated lumber, plywood, engineered wood
	Carpet		Textiles with backing, padding
	Other C&D Waste		Sinks, toilets, furniture, rubble, brick, masonry, ceramic
HHW	Batteries		All household batteries and lead-acid batteries
	Oil		Motor oil, lubricants
	Paint		Water and oil-based paints
	Anti-freeze		Coolants
	Other HHW		Pesticides, herbicides, poisons, oil filters, fluorescent lamps

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Material Category	Material Type	Definitions/Examples
Electronics	Electronics	Toaster, microwave, electric toothbrush, toys, cellphone, keyboards, etc.
Other	Tires	Car tires, bicycle tires, and other tires
	Other	Other material not classified above; diapers
	Fines	Other materials too small to sort (i.e. <2 inches)

Recyclable Materials

In partnership with TDEC staff, recyclable material samples analyzed were grouped into six major material categories and 37 material types. Individual members of the SCS sort team were assigned select material categories and sorted waste into the designated material types. **Table 2** lists the material categories and types measured as part of this study. Examples of materials corresponding to each type are also provided.

Table 2. Material Recyclability Categories and Types

Major Material Category	Material Type	Definitions/Examples
Paper	Mixed Paper	Construction paper, manila folders, junk mail, newspaper, office paper, paper board etc.
	Old Corrugated Cardboard	Shipping/pizza boxes
	Non-Recyclable Paper	Composite paper; waxed cardboard; napkins; paper towels; other non-recyclable paper
Plastic	PET #1	Rigid containers with #1; water, soda bottles, cups, and containers
	HDPE #2 - Natural	Natural rigid containers with #2; milk jugs, jars/tubs, cups, bottles
	HDPE #2 - Colored	Colored rigid containers with #2; milk jugs, jars/tubs, cups, bottles
	PVC #3	Rigid containers with #3; food/drink
	LDPE #4	Rigid containers with #4; squeeze bottles
	PP #5	Rigid containers with #5; food containers/cups, auto parts, industrial fibers
	PS #6 - Expanded	Expanded polystyrene, Styrofoam; cups, takeout containers
	PS #6 - Rigid	Rigid containers with #6; utensils, cups/lids, video cassettes
	Durable Plastics	Laundry baskets, toys, buckets, PVC, flooring, etc.
	#7 and Other Plastic	Straws, cutlery, lids, and other unidentifiable plastics
	Film Plastics	Shopping bags, garbage bags, produce bags, etc.

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Major Material Category	Material Type	Definitions/Examples
Organic	Wasted Food	Food waste/scraps; banana peel, eggshell, vegetables, bread, etc.
	Yard Waste	Leaves, branches, grass clippings, garden waste, agricultural waste
	Textiles and Shoes	Clothing, rags, sheets, towels, shoes, pillows, bags, belts, shoes
Metals	Steel and Tin Cans	Food and beverage cans
	Aluminum Cans	Soda/beer/sparking water cans, cat food, paint/varnish cans, aerosol cans
Metals	Aerosol Cans	Metal spray cans for paint, body spray, whipped cream, etc.
	Other Ferrous Metal	Cast iron and iron
	Other Non-Ferrous Metal	Aluminum foil/trays/pans, copper, titanium, lead, zinc, brass/bronze
Glass	Clear Glass	Clear food/beverage bottles and jars
	Green Glass	Green food/beverage bottles and jars
	Amber Glass	Amber food/beverage bottles and jars
	Blue Glass	Blue food/beverage bottles and jars
	Other Glass	Lightbulbs, Pyrex, sheet glass; crushed, mixed glass
Other	Bagged Recycling	Bagged recyclable materials
	Bagged MSW	Bagged waste materials
	Tanglers	Hoses, extension cords, Christmas lights
	Electronics	Toaster, microwave, electric toothbrush, toys, cellphone, keyboards, etc.
	C&D Waste	Lumber, drywall, insulation, asphalt shingles, carpet, flooring, etc.
	HHW	Oil, antifreeze, sharps, paint, batteries, etc.
	Lithium Batteries	Lithium-ion batteries and devices containing them
	Tires	Car tires, bicycle tires, and other tires
	Other	Other material not classified above; diapers
	Fines	Other materials too small to sort (i.e. <2 inches)

DRAFT 03

Sample Sorting

The sorting of MSW and recyclable material samples was led by an experienced SCS professional with the support of a six-person sort crew. Fundamental to this task was a consistent, methodical, statistically valid sorting program that was repeated for each sample. SCS staff oversaw the entire sorting process and actively conducted quality control measures to confirm materials were sorted and weighed properly. Each member of the sort crew was assigned select material categories

for sorting (i.e., paper, plastic, metal, etc.). This improved the efficiency and accuracy of the sorting process as staff specialized in sorting the materials to which they were assigned.

The basic procedures and objectives for sorting were identical for each sample as described in the systematic approach below:

1. The sort crew transferred the refuse sample onto the sorting table until it was full and began characterizing the materials. Large or heavy waste items, such as bags of yard waste, were torn open, examined, and then placed directly into the appropriate waste container for subsequent weighing.

2. Crew members manually segregated each item of waste, according to material categories defined in **Table 1** for MSW (or **Table 2** for recyclables) and placed it in the appropriate container. These steps were repeated until the entire sample was sorted down to a particle size of 2-inches or less[1]. Small items, 2-inches or less, were swept off the sorting table into a separate container for weighing. These small items comprised the material category "Fines."

3. Containers of the sorted materials were individually weighed by SCS staff. SCS staff also performed quality control measures to confirm the purity of each sorted material category.

4. At the completion of sorting, the waste containers were moved to the scale where a representative of SCS weighed each category and recorded the net weight on the Sort Data Sheet. Tare weights of the empty containers were also recorded. Measurements were made to the nearest tenth of a pound.

This four-step process was repeated until all the day's samples taken at the site were characterized. Waste samples were maintained in as-disposed condition or as close to this as possible until the actual sorting began. Proper site layout and close supervision of sampling was maintained to avoid the need to repeatedly handle sampled wastes.

Consistent with good practice in such sampling programs, efforts were made to minimize sampling bias or other impacts on the integrity of the database. To this end, field sampling was coordinated to avoid holidays and other disruptions.

Data Collection

Following the sorting of material samples into different types listed above, each container was weighed on a portable bench scale, and the gross weight of the sorted material and container was recorded. The tare weight of each container was recorded directly on the container. The tare weight of the container was also recorded upon weighing the material. Material samples were maintained as collected to facilitate sample tracking. Proper site layout and close supervision of sampling avoided the need to handle samples multiple times.

[1] Note for samples of recyclable materials that bags, boxes, and other containers were not opened; the bag or box and the contents were placed directly into either the bagged MSW or bagged recycling category after inspection.

DRAFT-08

VISUAL CHARACTERIZATION

A visual characterization method was used to characterize construction/demolition/bulky (CDB) waste materials at landfills across Tennessee. This section describes the methods used to perform the visual characterization of these materials.

Sample Selection and Screening

CDB waste was visually characterized by experienced SCS field personnel. Staff would screen trucks at or near the working face of a landfill to confirm the contained waste aligned with the requirements for this study. Screening included interviewing the drivers to confirm the waste was generated in the State of Tennessee and, when possible, the specific location or type of property where the waste was collected. When possible, the SCS staff recorded the total weight of each load as reported on the corresponding scale ticket as provided by the driver.

If the load of CDB waste met the criteria for characterization as part of this project, the SCS team would record the information about the materials on a sample data form that was unique to each sample. The truck driver was then directed to dump the entire load in a designated area (often on the side of the landfill working face) for safe access by field personnel. The truck driver was asked to create a long spread-out pile of the materials to facilitate inspection and identification of as many materials as possible in each load.

Sample Characterization

SCS field personnel would independently walk around the pile of waste materials and note the major components present in the waste load. Staff would then complete a second, third, and fourth observation of the waste load to note materials present in smaller quantities.

Throughout the visual inspection of the waste materials field personnel would estimate the percentage volume of each material component and record it on the sample data form. Staff reviewed the data to confirm that the sum of the percentages equals 100 percent. Upon conclusion of the data recording and field quality check of the data, SCS staff took pictures of each load and then directed landfill operations staff to push the load for disposal and another load was selected.

Material Categories

The CDB material samples were visually characterized into seven major material categories and 24 specific material types. **Table 3** includes a listing of the CDB waste material categories and types with corresponding definitions and examples of each material type.

Table 3. Construction/Demolition/Bulky Waste Material Categories and Types

Material Category	Material Type	Definition/Examples
Paper	Old Corrugated Cardboard	Shipping/pizza boxes
Organics	Yard Waste	Leaves, branches, grass clippings, garden waste
	Textiles and Shoes	Clothing, sofas, bags, curtains

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Material Category	Material Type	Definition/Examples
	Other Organics	Food processing wastes, animal by-product
Metals	Ferrous Metals	Iron, steel, stainless steel, etc.
	Non-Ferrous Metals	Aluminum, copper, lead, zinc, brass
	White Goods	Refrigerator, stove, washing machine, dryer
Glass	Glass	Windows, mirrors, glass bottles
Construction and Demolition Debris	Bricks, Rubble, Masonry, Concrete, etc.	Bricks, rubble, masonry, concrete, etc.
	Drywall	Clean or painted drywall sheets
	Untreated Wood	Lumber, plywood, wood with no paint, stain, chemical additives
	Treated Wood	Wood items with paint, stain and other chemical coatings/treatments
	Carpets	Textiles with backing, padding
	Asphalt Shingles	Roofing shingles
	Insulation	Fiberglass insulation
	Other C&D Waste	Sinks, toilets, porcelain, tile, insulation
Electronics	Electronics	Toaster, microwave, electric toothbrush, toys, cellphone, keyboards, etc.
Other	Mattresses	Mattresses and box springs
	Tires	Car tires, bicycle tires, and other tires
	Furniture	Primarily wood; upholstered; desks, chairs, sofas, etc.
	Durable Rigid Plastics	Buckets, playhouse, swing set, etc.
	Bagged MSW	Unknown bagged materials
	Dirt, Sand, Soil	Soil, dirt, fully composted materials
	Other Material	Other material not classified; note material type on data form

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HEALTH AND SAFETY

Appendix A includes a sample health and safety plan developed for the project.

4 RESULTS

MUNICIPAL SOLID WASTE

The municipal solid waste (MSW) stream analysis includes material profiles overall for the State of Tennessee and individual profiles for the residential and commercial sectors by grand division.

Overall Statewide MSW Composition

A total of 390 MSW samples were characterized as part of the field activities from April 2025 to March 2026 and including MSW generated through both residential and commercial activities. The composition includes the mean percent by material category and type, standard deviation, and 95 percent confidence intervals based on the number of samples and variability between the samples.

Exhibit 2 presents a visual representation of the major material categories. Organics and Paper represent 56.1 percent of the overall waste stream. Table 4 presents the overall waste composition by material type based on the 390 MSW samples collected and sorted during the study. The five most common material types, by weight, of the overall State of Tennessee waste stream were:

- Wasted Food – Edible (15.1 percent),
- Other (7.4 percent)
- Old Corrugated Cardboard (7.2 percent)
- Compostable Paper (6.4 percent)
- Textiles and Shoes (5.2 percent)

Exhibit 2. Statewide Overall MSW Composition Summary

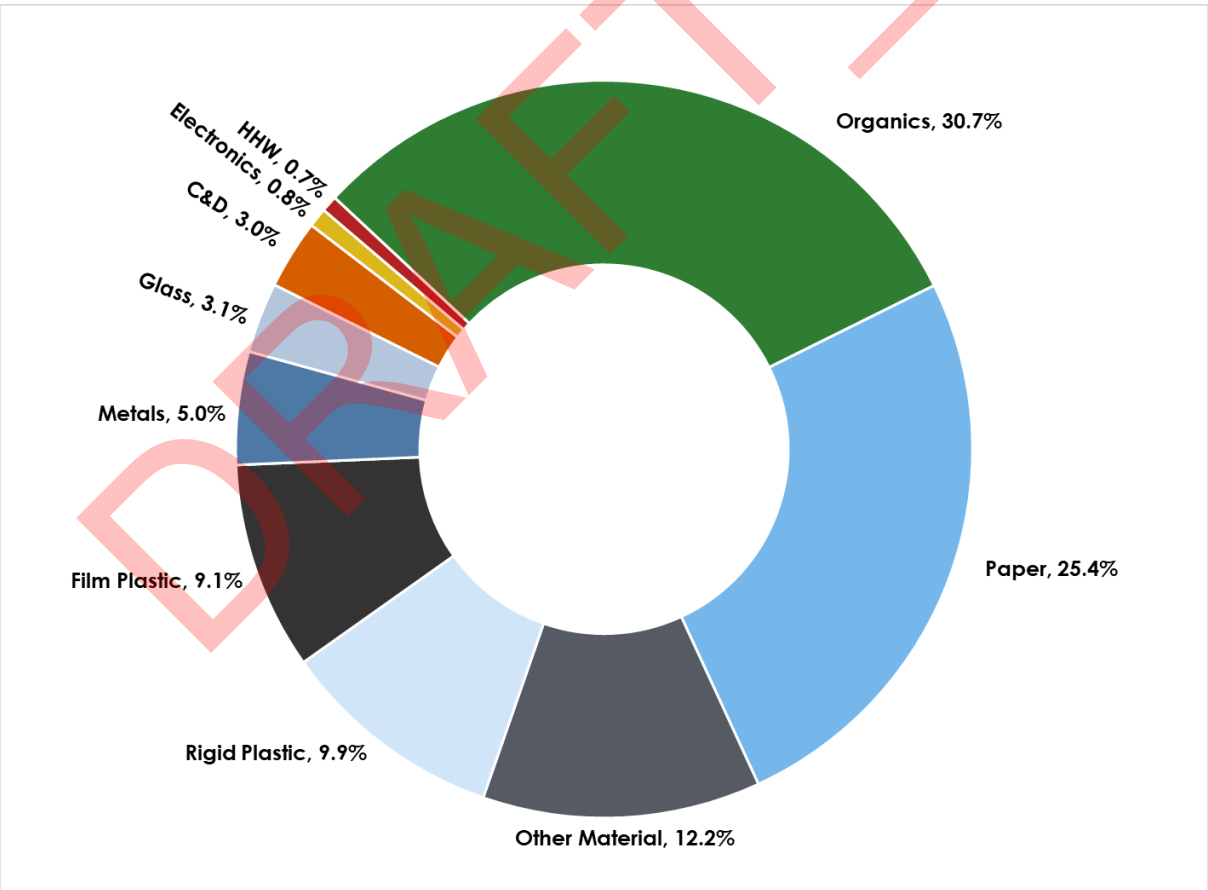

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Table 4. Statewide Overall MSW Composition Detailed

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	Upper
PAPER				
Sorted Office Paper	2.0%	1.9%	1.9%	2.2%
Newspaper and Magazines	0.8%	1.1%	0.7%	0.9%
Mixed Paper	2.3%	2.1%	2.1%	2.5%
Compostable Paper	6.4%	2.8%	6.2%	6.7%
Old Corrugated Cardboard	7.2%	7.1%	6.5%	7.9%
Paperboard	4.4%	2.0%	4.2%	4.6%
Other Paper (non-recyclable)	2.3%	4.7%	1.8%	2.8%
Total Paper	**25.4%**			
RIGID PLASTIC				
PET #1	2.9%	1.3%	2.7%	3.0%
HDPE #2	1.2%	0.7%	1.1%	1.3%
PVC #3	<0.1%	0.2%	<0.1%	<0.1%
LDPE #4	<0.1%	<0.1%	<0.1%	<0.1%
PP #5	1.4%	0.8%	1.4%	1.5%
PS #6	1.4%	1.0%	1.3%	1.5%
Durable Plastics	1.9%	2.3%	1.7%	2.1%
#7 and Other Rigid Plastics	1.0%	0.7%	1.0%	1.1%
Total Rigid Plastic	**9.9%**			
FILM PLASTIC				
Garbage Bags	3.3%	1.7%	3.1%	3.4%
Retail Bags	1.3%	0.7%	1.3%	1.4%
Other Film Plastics	4.5%	3.0%	4.2%	4.8%
Total Film Plastic	**9.1%**			
ORGANICS				
Wasted Food (edible)	15.1%	8.5%	14.3%	16.0%
Wasted Food (inedible)	4.7%	4.5%	4.3%	5.1%
Yard Waste	2.2%	6.3%	1.6%	2.8%
Wood (Non-C&D)	0.4%	1.3%	0.2%	0.5%
Textiles and Shoes	5.2%	7.9%	4.4%	6.0%
Other Organics	3.2%	5.9%	2.6%	3.8%
Total Organics	**30.7%**			

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Table 4. Overall MSW Composition Detailed (cont.)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	Upper
METALS				
Steel and Tin Cans	1.2%	1.0%	1.1%	1.3%
Aluminum Cans	1.3%	0.7%	1.2%	1.4%
Aerosol Cans	0.2%	0.3%	0.2%	0.2%
Other Ferrous Metal	1.4%	2.8%	1.1%	1.7%
Other Non-Ferrous Metal	0.8%	1.2%	0.7%	0.9%
Total Metals	**5.0%**			
GLASS				
Clear Glass	1.8%	1.6%	1.7%	2.0%
Green Glass	0.4%	0.7%	0.3%	0.5%
Amber Glass	0.6%	1.1%	0.4%	0.7%
Blue Glass	<0.1%	0.2%	<0.1%	<0.1%
Other Glass	0.3%	1.0%	0.2%	0.4%
Total Glass	**3.1%**			
C&D MATERIAL				
Drywall	0.3%	3.0%	<0.1%	0.6%
Wood	1.2%	3.2%	0.9%	1.5%
Carpet	0.6%	2.4%	0.3%	0.8%
Other C&D Waste	0.9%	3.5%	0.6%	1.3%
Total C&D Material	**3.0%**			
HOUSEHOLD HAZARDOUS WASTE				
Batteries	0.1%	0.7%	<0.1%	0.2%
Oil	<0.1%	0.5%	<0.1%	<0.1%
Paint	0.1%	0.8%	<0.1%	0.2%
Anti-freeze	<0.1%	0.2%	<0.1%	<0.1%
Other HHW	0.4%	2.2%	0.2%	0.7%
Total HHW	**0.7%**			
ELECTRONICS				
Electronics	0.8%	2.0%	0.6%	1.0%
Total Electronics	**0.8%**			
OTHER				
Tires	0.4%	3.4%	<0.1%	0.7%
Other	7.4%	6.7%	6.7%	8.0%
Fines	4.4%	3.6%	4.1%	4.8%
Total Other	**12.2%**			
TOTAL	**100.0%**			

Note: Composition based on 390 samples.

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Residential MSW Composition

Residential waste is generated through day-to-day household activities, including food preparation and consumption, cleaning, personal care, home maintenance, and the ongoing purchase and use of packaged consumer goods. Collection is most commonly provided through curbside routes operated by municipal departments or contracted haulers, with rear-load collection vehicles or automated side-load collection vehicles.

Exhibit 3 presents a visual representation of the major material categories. Organics and Paper represent 55.0 percent of the overall waste stream. **Table 5** presents the statewide residential waste composition by material type based on the 217 residential MSW samples collected and sorted during the study. The five most common material types, by weight, of the statewide residential waste stream were:

- Wasted Food - Edible (14.5 percent)
- Other (8.8 percent)
- Compostable Paper (6.6 percent)
- Paperboard (5.3 percent)
- Fines (5.1 percent)

Exhibit 3. Statewide Residential MSW Composition Summary

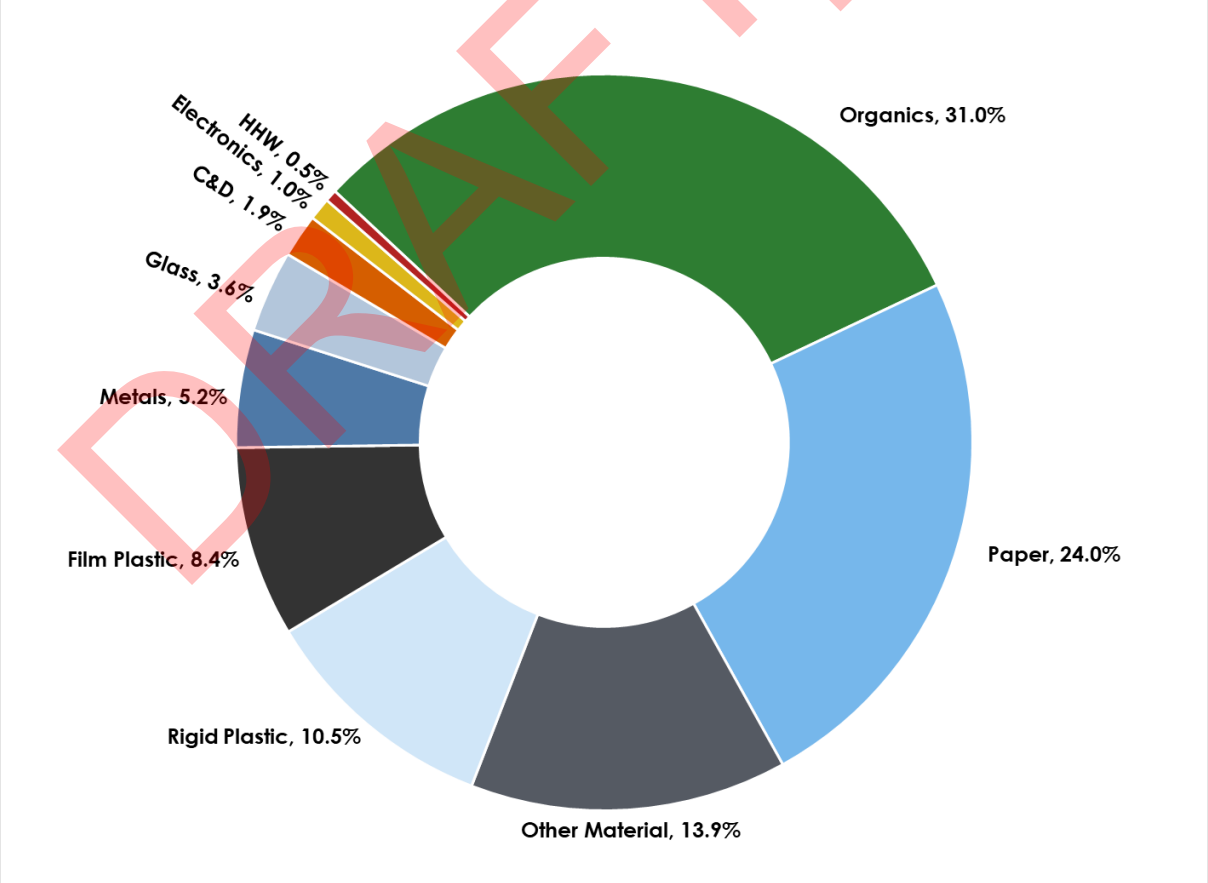

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Table 5. Statewide Residential MSW Composition Detailed

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	Upper
PAPER				
Sorted Office Paper	2.3%	1.8%	2.1%	2.6%
Newspaper and Magazines	1.0%	1.0%	0.9%	1.1%
Mixed Paper	2.1%	1.3%	1.9%	2.2%
Compostable Paper	6.6%	2.3%	6.3%	6.9%
Old Corrugated Cardboard	4.6%	2.6%	4.2%	4.9%
Paperboard	5.3%	1.6%	5.1%	5.5%
Other Paper (non-recyclable)	2.1%	1.4%	1.9%	2.3%
Total Paper	**24.0%**			
RIGID PLASTIC				
PET #1	3.4%	1.0%	3.3%	3.5%
HDPE #2	1.3%	0.6%	1.2%	1.4%
PVC #3	<0.1%	<0.1%	<0.1%	<0.1%
LDPE #4	<0.1%	<0.1%	<0.1%	<0.1%
PP #5	1.5%	0.7%	1.4%	1.6%
PS #6	1.4%	0.6%	1.3%	1.4%
Durable Plastics	1.9%	1.8%	1.6%	2.1%
#7 and Other Rigid Plastics	1.1%	0.5%	1.0%	1.1%
Total Rigid Plastic	**10.5%**			
FILM PLASTIC				
Garbage Bags	2.8%	0.9%	2.7%	3.0%
Retail Bags	1.6%	0.6%	1.5%	1.7%
Other Film Plastics	3.9%	1.2%	3.8%	4.1%
Total Film Plastic	**8.4%**			
ORGANICS				
Wasted Food (Edible)	14.5%	6.2%	13.7%	15.4%
Wasted Food (Inedible)	4.5%	2.7%	4.2%	4.9%
Yard Waste	2.7%	6.1%	1.9%	3.5%
Wood (Non-C&D)	0.3%	0.7%	0.2%	0.4%
Textiles and Shoes	5.0%	3.7%	4.5%	5.5%
Other Organics	4.0%	5.4%	3.3%	4.7%
Total Organics	**31.0%**			

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Table 5. Statewide Residential MSW Composition Detailed (cont.)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	Upper
METALS				
Steel and Tin Cans	1.4%	0.7%	1.3%	1.5%
Aluminum Cans	1.6%	0.6%	1.5%	1.6%
Aerosol Cans	0.2%	0.2%	0.2%	0.3%
Other Ferrous Metal	1.1%	1.8%	0.9%	1.3%
Other Non-Ferrous Metal	0.8%	1.0%	0.7%	1.0%
Total Metals	**5.2%**			
GLASS				
Clear Glass	2.2%	1.6%	2.0%	2.4%
Green Glass	0.5%	0.8%	0.4%	0.6%
Amber Glass	0.5%	0.6%	0.5%	0.6%
Blue Glass	<0.1%	0.3%	<0.1%	<0.1%
Other Glass	0.3%	0.9%	0.2%	0.4%
Total Glass	**3.6%**			
C&D MATERIAL				
Drywall	0.2%	1.7%	<0.1%	0.4%
Wood	0.6%	1.3%	0.4%	0.8%
Carpet	0.4%	1.7%	0.2%	0.7%
Other C&D Waste	0.6%	2.9%	0.2%	1.0%
Total C&D Material	**1.9%**			
HOUSEHOLD HAZARDOUS WASTE				
Batteries	0.2%	0.9%	<0.1%	0.3%
Oil	<0.1%	0.1%	<0.1%	<0.1%
Paint	<0.1%	0.5%	<0.1%	0.2%
Anit-freeze	<0.1%	<0.1%	<0.1%	<0.1%
Other HHW	0.2%	0.8%	0.1%	0.4%
Total HHW	**0.5%**			
ELECTRONICS				
Electronics	1.0%	2.3%	0.7%	1.3%
Total Electronics	**1.0%**			
OTHER MATERIAL				
Tires	<0.1%	0.1%	<0.1%	<0.1%
Other	8.8%	6.4%	7.9%	9.6%
Fines	5.1%	3.9%	4.6%	5.6%
Total Other Material	**13.9%**			
TOTALS	**100.0%**			

Note: Composition based on 217 samples.

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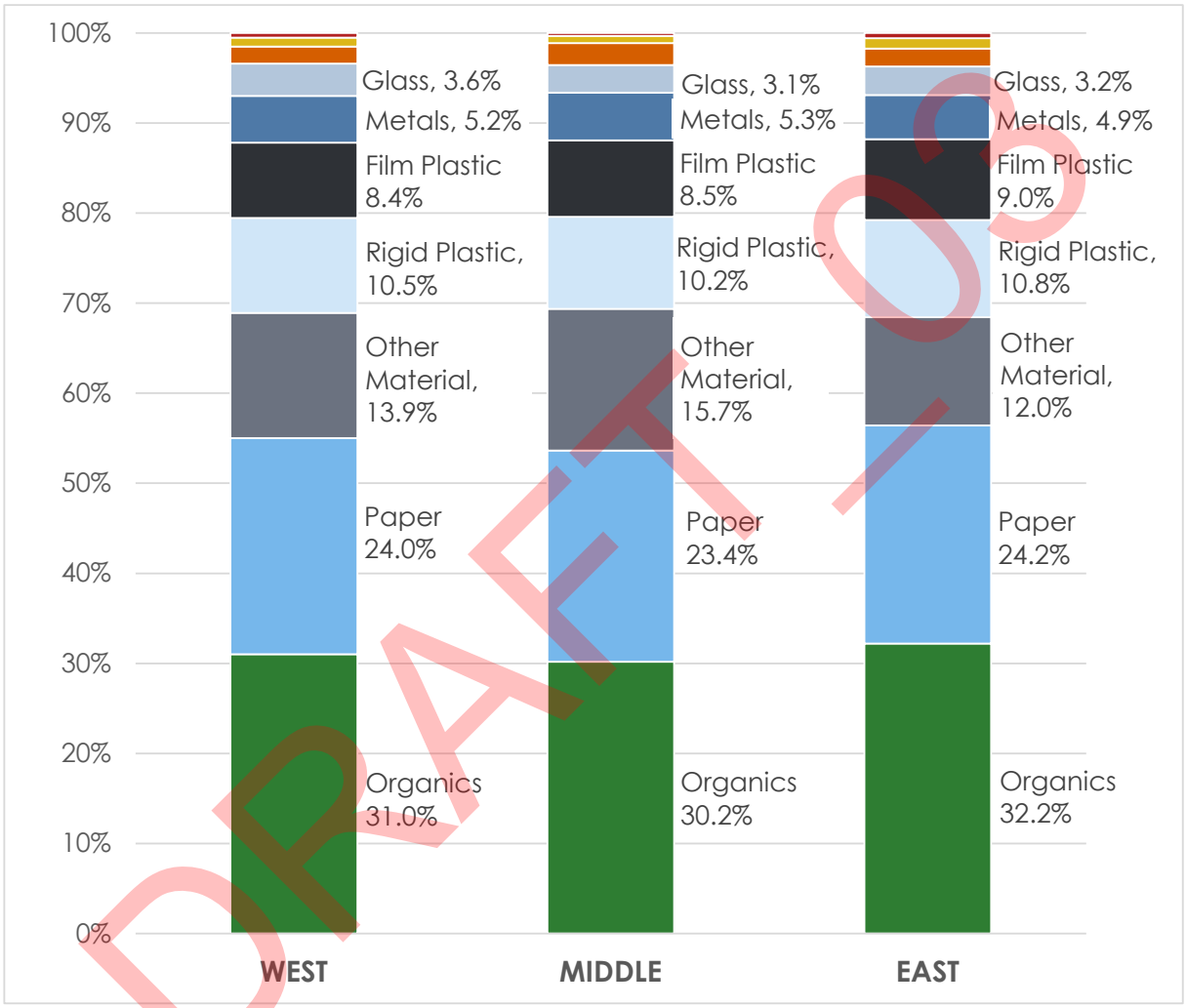
Residential MSW Composition by Grand Division

Exhibit 4 presents the residential MSW composition across the three Tennessee grand divisions and indicates that overall variation by major material category is minimal.

Exhibit 4. Residential MSW Composition by Grand Division



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While the overall category-level composition is similar across the grand divisions, there is sample-to-sample variation within each region that can cause individual material types to appear higher or lower when comparing one composition to another. However, when the 95 percent confidence intervals are compared across grand divisions, certain materials show statistically significant differences in composition. These statistically significant differences are presented in **Table 6**.

Table 6. Significant Differences in Residential MSW Composition By Grand Division

Major Material Category	Material Type	High	Low
Paper	Mixed Paper	East 2.6%	West 1.6%
	Paperboard	West 5.7%	Middle 4.9%
Rigid Plastic	Polypropylene #5	Middle & East 1.7% each	West 1.2%
	Polystyrene #6	West 1.4%	East 1.2%
	#7 and Other Rigid Plastics	East 1.3%	West & Middle 1.0% & 0.9%
Film Plastic	Garbage Bags	West 3.1%	East 2.5%
	Retail Bags	West 1.8%	East 1.4%
	Other Film Plastic	Middle 4.4%	West & East 3.7% & 3.8%
Organics	Wasted Food (Inedible)	East 6.7%	West & Middle
	Yard Waste	West & Middle 3.2% & 3.5%	East 0.8%
Metals	Steel and Tin Cans	East 1.7%	Middle 1.2%
Glass	Green Glass	East 0.8%	West & Middle 0.3% & 0.4%
HHW	Paint	East 0.2%	West & Middle <0.1% each
Other Material	Other	West 10.0%	Middle 6.8%

DRAFT 03

Detailed composition summaries for residential waste by Tennessee grand division are included in **Appendix B.**

Commercial MSW Composition

Commercial waste is generated by businesses and institutions through routine operations such as retail sales, office work, warehousing and distribution, hospitality and food service, healthcare, and facility maintenance. Common sources include packaging from incoming shipments, corrugated cardboard and paper from administrative activities, food waste from kitchens and breakrooms, and a wide range of disposable service items and supplies.

Exhibit 5 presents a visual representation of the major material categories**.** Organics and Paper represent 57.7 percent of the overall waste stream. **Table 7** presents the statewide residential waste composition by material type based on the 173 commercial MSW samples collected and sorted during the study. The five most common material types, by weight, of the statewide commercial waste stream were:

- Waste Food - Edible (15.9 percent)
- Old Corrugated Cardboard (10.6 percent)
- Compostable Paper (6.2 percent)
- Other (5.6 percent)
- Textiles and Shoes (5.4 percent)

Exhibit 5. Statewide Commercial MSW Composition Summary

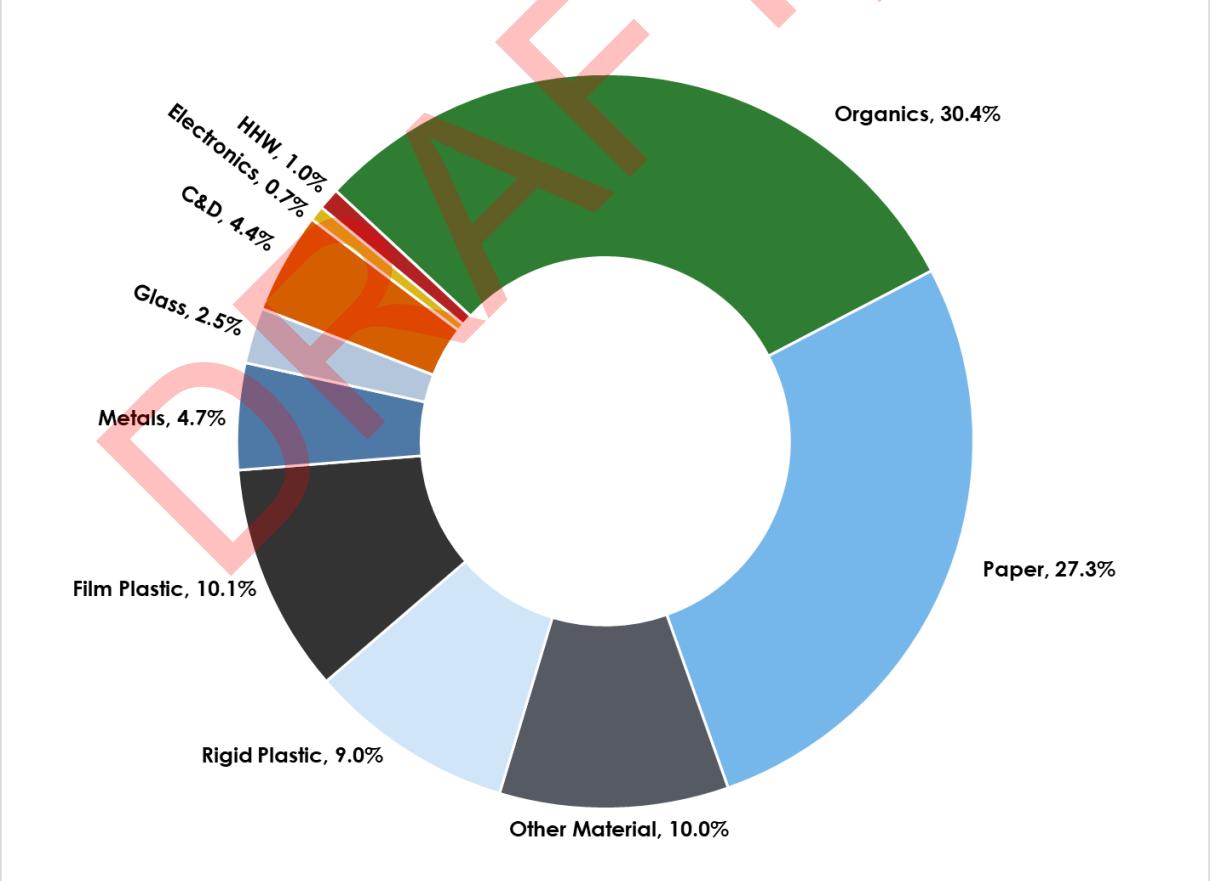

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Table 7. Statewide Commercial MSW Composition Detailed

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	Upper
PAPER				
Sorted Office Paper	1.7%	2.0%	1.4%	2.0%
Newspaper and Magazines	0.6%	1.1%	0.4%	0.7%
Mixed Paper	2.5%	2.8%	2.1%	2.9%
Compostable Paper	6.2%	3.4%	5.7%	6.7%
Old Corrugated Cardboard	10.6%	9.3%	9.2%	12.0%
Paperboard	3.1%	1.8%	2.9%	3.4%
Other Paper (non-recyclable)	2.5%	6.9%	1.5%	3.6%
Total Paper	**27.3%**			
RIGID PLASTIC				
PET #1	2.2%	1.3%	2.0%	2.4%
HDPE #2	1.1%	0.9%	0.9%	1.2%
PVC #3	<0.1%	0.3%	<0.1%	<0.1%
LDPE #4	<0.1%	0.1%	<0.1%	<0.1%
PP #5	1.3%	0.9%	1.2%	1.5%
PS #6	1.4%	1.4%	1.2%	1.7%
Durable Plastics	1.9%	2.8%	1.5%	2.4%
#7 and Other Rigid Plastics	1.0%	0.8%	0.8%	1.1%
Total Rigid Plastic	**9.0%**			
FILM PLASTIC				
Garbage Bags	3.8%	2.2%	3.5%	4.2%
Retail Bags	1.0%	0.6%	0.9%	1.1%
Other Film Plastics	5.3%	4.2%	4.6%	5.9%
Total Film Plastic	**10.1%**			
ORGANICS				
Wasted Food (Edible)	15.9%	10.7%	14.3%	17.5%
Wasted Food (Inedible)	4.9%	6.0%	4.1%	5.8%
Yard Waste	1.5%	6.5%	0.5%	2.5%
Wood (Non-C&D)	0.5%	1.7%	0.2%	0.7%
Textiles and Shoes	5.4%	11.1%	3.8%	7.1%
Other Organics	2.1%	6.4%	1.2%	3.1%
Total Organics	**30.4%**			

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Table 7. Statewide Commercial MSW Composition Detailed (Cont.)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	Upper
METALS				
Steel and Tin Cans	0.9%	1.2%	0.8%	1.1%
Aluminum Cans	1.0%	0.7%	0.9%	1.1%
Aerosol Cans	0.2%	0.3%	0.1%	0.2%
Other Ferrous Metal	1.8%	3.6%	1.2%	2.3%
Other Non-Ferrous Metal	0.8%	1.3%	0.6%	1.0%
Total Metals	**4.7%**			
GLASS				
Clear Glass	1.4%	1.5%	1.1%	1.6%
Green Glass	0.2%	0.6%	0.2%	0.3%
Amber Glass	0.6%	1.5%	0.4%	0.8%
Blue Glass	<0.1%	<0.1%	<0.1%	<0.1%
Other Glass	0.3%	1.1%	0.1%	0.4%
Total Glass	**2.5%**			
C&D MATERIAL				
Drywall	0.4%	4.0%	<0.1%	1.0%
Wood	1.9%	4.4%	1.3%	2.6%
Carpet	0.7%	3.0%	0.3%	1.2%
Other C&D Waste	1.3%	4.1%	0.7%	2.0%
Total C&D Material	**4.4%**			
HOUSEHOLD HAZARDOUS WASTE				
Batteries	<0.1%	<0.1%	<0.1%	<0.1%
Oil	<0.1%	0.8%	<0.1%	0.2%
Paint	0.1%	1.0%	<0.1%	0.3%
Anit-freeze	<0.1%	0.3%	<0.1%	<0.1%
Other HHW	0.7%	3.2%	0.2%	1.1%
Total HHW	**1.0%**			
ELECTRONICS				
Electronics	0.7%	1.6%	0.4%	0.9%
Total Electronics	**0.7%**			
OTHER MATERIAL				
Tires	0.8%	5.1%	<0.1%	1.6%
Other	5.6%	6.7%	4.6%	6.6%
Fines	3.6%	2.9%	3.2%	4.0%
Total Other Material	**10.0%**			
TOTALS	**100.0%**			

Note: Composition based on 173 samples.

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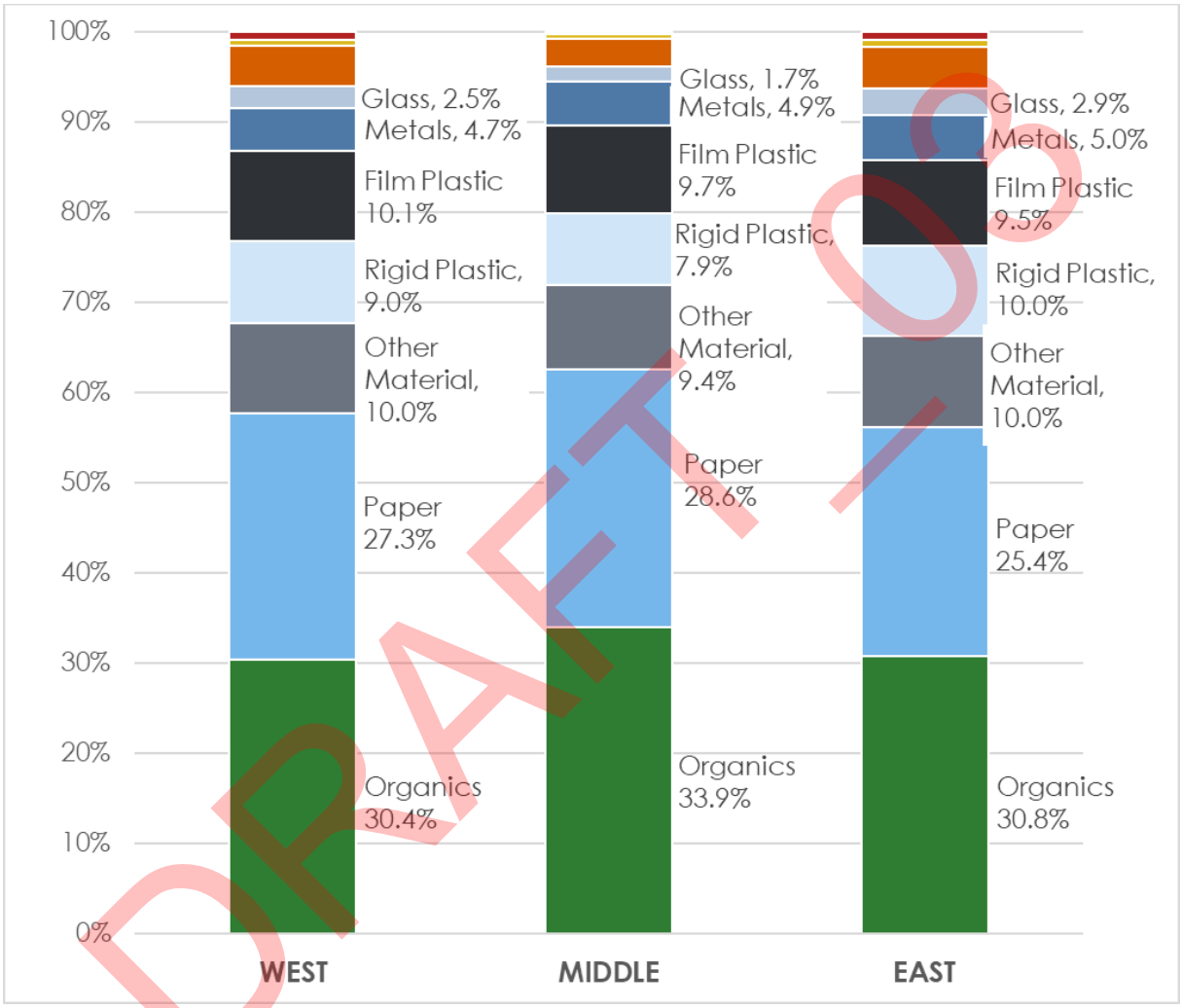
Commercial MSW Composition by Grand Division

Exhibit 6 presents the commercial MSW composition across the three Tennessee grand divisions and indicates that overall variation by major material category is minimal.

Exhibit 6. Commercial MSW Composition by Grand Division



DRAFT 06

While the overall category-level composition is similar across the grand divisions, there is sample-to-sample variation within each region that can cause individual material types to appear higher or lower when comparing one composition to another. However, when the 95 percent confidence intervals are compared across grand divisions, certain materials show statistically significant differences in composition. These statistically significant differences are presented in **Table 8**.

Table 8. Significant Differences in Commercial MSW Composition By Grand Division

Major Material Category	Material Type	High	Low
Paper	Sorted Office Paper	West & East 1.7% & 2.1%	Middle 0.9%
	Mixed Paper	East 3.2%	Middle 1.8%
	Old Corrugated Cardboard	West 12.9%	East 7.7%
Rigid Plastic	PET #1	East 2.7%	West 1.9%
	Durable Plastic	Middle 3.6%	West & East 1.4% & 1.5%
Film Plastic	Garbage Bags	West & East 4.1% & 4.2%	Middle 2.9%
Glass	Clear Glass	Middle & East 1.9% & 1.5%	West 0.8%
	Green Glass	East 0.5%	West <0.1%

Detailed composition summaries for commercial waste by Tennessee grand division are included in **Appendix C.**

DRAFT 03

RECYCLABLE MATERIALS

This section details the recycling stream composition measured from material recovery facilities in the State of Tennessee. The recycling stream targeted for this study included recyclable materials that were separated from the municipal solid waste stream at the point of generation (i.e. residential or commercial property). These materials were collected from the generator either curbside or onsite by a commercial or municipal hauler and delivered to a recycling center for consolidation and/or processing. These materials were characterized upon or shortly after delivery to the recycling centers before any processing or handling of the materials occurred.

This section presents the compilation of the 72 recyclable material samples collected and characterized as part of this study. A unique aspect of this study is the variation in the recycling processing systems in which the samples were obtained. Two types of systems were represented by the samples obtained and characterized:

- **Single-Stream –** All recyclable materials are collected mixed together in the same container.

- **Multi-Stream –** Each unique recyclable material is collected separately in a bin or container. Material types are not mixed during collection or processing.

The breakdown of samples by facility type is as follows:

- 48 single-stream samples
- 24 multi-stream samples
  72 TOTAL

The material types measured for the single-stream recycling samples were grouped as either "recyclable materials" or "contamination." Classification of each material type is based on the professional experience of SCS Engineers staff, input from TDEC staff, and research on typical materials accepted for recycling at material recovery facilities.

For the recycling samples characterized as part of the multi-stream collection program, only materials accepted for recycling as part of that stream are considered accepted recyclable materials. All other materials, even materials that can be recycled but were placed in the wrong stream, were considered contamination.

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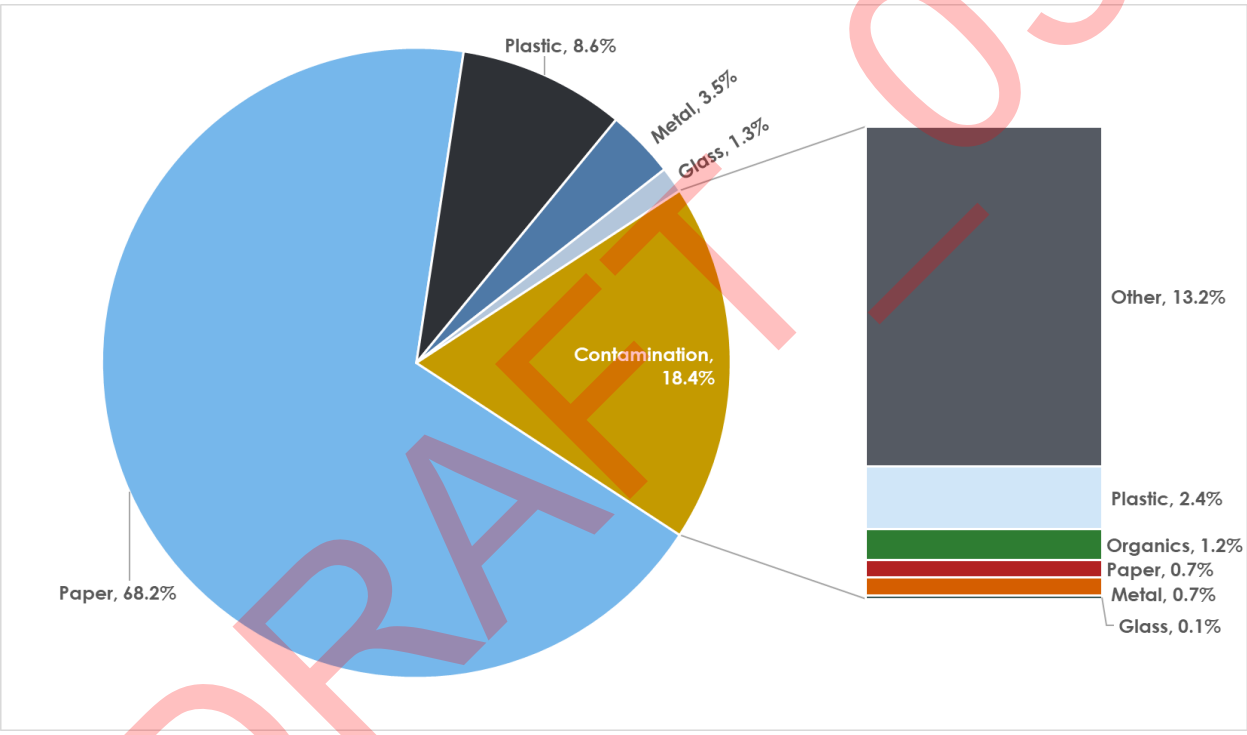
Single-Stream

This section presents the results of the single-stream recycling composition field measurements. The composition includes 95 percent confidence intervals based on the number of samples and variability between the samples. A total of 48 single-stream samples were characterized as part of this study.

Exhibit 7 presents a visual representation of the major material categories in single-stream recycling, including contamination**.** **Table 9** presents the single-stream recycling composition by material type based on the 48 samples collected and sorted during the study.

Exhibit 7. Single-Stream Recycling Composition Summary



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For national context, contamination in single-stream curbside recycling programs in the United States is widely recognized as a significant operational challenge. The Recycling Partnership's *2020 State of Curbside Recycling Report* identifies the national average contamination rate to be approximately 17 percent by weight, based on extensive data collection and analysis across diverse curbside programs. This estimate has since become a commonly referenced benchmark within the recycling industry, reflecting the scale of non-recyclable materials entering the recycling stream and the resulting impacts on processing efficiency, program costs, and material quality. Although individual community rates vary depending on program design, public education, and local infrastructure, The Recycling Partnership's 17 percent figure remains the most frequently cited national indicator of contamination levels.

Table 9. Single-Stream Recycling Composition Detailed

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
RECYCLABLE MATERIALS				
PAPER				
Corrugated Cardboard	45.6%	18.9%	41.1%	50.0%
Mixed Paper	22.6%	12.3%	19.7%	25.5%
Total Paper	**68.2%**			
PLASTIC				
PET #1	5.1%	2.5%	4.5%	5.7%
HDPE #2 - Natural	0.8%	0.5%	0.7%	0.9%
HDPE #2 - Colored	1.5%	0.8%	1.3%	1.7%
PVC #3	<0.1%	<0.1%	<0.1%	<0.1%
LDPE #4	<0.1%	<0.1%	<0.1%	<0.1%
PP #5	0.7%	0.5%	0.6%	0.8%
PS #6 - Rigid	<0.1%	0.2%	<0.1%	0.1%
#7 and Other Plastic	0.4%	0.3%	0.3%	0.5%
Total Plastic	**8.6%**			
METAL				
Aluminum Cans	2.4%	1.4%	2.1%	2.7%
Steel and Tin Cans	1.1%	1.3%	0.8%	1.4%
Total Metal	**3.5%**			
GLASS				
Clear Glass	0.9%	1.1%	0.7%	1.2%
Green Glass	0.2%	0.4%	<0.1%	0.3%
Amber Glass	0.2%	0.5%	<0.1%	0.3%
Blue Glass	<0.1%	<0.1%	<0.1%	<0.1%
Total Glass	**1.33%**			
TOTAL RECYCLABLE MATERIALS	**81.6%**			

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Table 9. Single-Stream Recycling Composition Detailed (cont.)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	Upper
CONTAMINATION				
PAPER				
Non-recyclable Paper	0.7%	1.5%	0.3%	1.0%
Total Paper	**0.7%**			
PLASTIC				
PS #6 - Expanded	0.2%	0.3%	0.1%	0.3%
Durable Plastics	1.1%	1.8%	0.7%	1.6%
Film Plastic	1.1%	1.1%	0.8%	1.4%
Total Plastic	**2.4%**			
ORGANICS				
Food Waste	0.5%	0.9%	0.3%	0.7%
Yard Waste	<0.1%	0.1%	<0.1%	<0.1%
Textiles and Shoes	0.7%	1.4%	0.3%	1.0%
Total Organics	**1.2%**			
METALS				
Aersol Cans	<0.1%	0.1%	<0.1%	<0.1%
Other Ferrous Metals	0.3%	0.7%	0.2%	0.5%
Other Non-Ferrous Metals	0.3%	0.9%	<0.1%	0.5%
Total Other Metals	**0.7%**			
GLASS				
Other Glass	0.1%	0.7%	<0.1%	0.3%
Total Glass	**0.1%**			
OTHER				
Bagged Recycling	3.1%	8.4%	1.1%	5.1%
Bagged MSW	5.9%	10.3%	3.4%	8.3%
Tanglers	0.1%	1.0%	<0.1%	0.4%
Electronics	0.2%	0.8%	<0.1%	0.4%
C&D Waste	0.5%	1.0%	0.3%	0.7%
HHW	0.3%	1.5%	<0.1%	0.7%
Lithium Batteries	<0.1%	<0.1%	<0.1%	<0.1%
Tires	<0.1%	<0.1%	<0.1%	<0.1%
Other	0.5%	1.0%	0.3%	0.8%
Fines	2.5%	2.6%	1.9%	3.1%
Total Other	**13.2%**			
CONTAMINATION SUBTOTAL	**18.4%**			
TOTAL	**100.0%**			

Note: Composition based on 48 samples.

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Multi-Stream

This section presents the results of the multi-stream recycling composition field measurements. The composition includes 95 percent confidence intervals based on the number of samples and variability between the samples. A total of 24 multi-stream samples were characterized that represent four different material types: cardboard, mixed paper, plastic, and aluminum. The sample breakdown by material type is as follows:

- 15 cardboard samples
- 4 mixed paper samples
- 3 plastic samples
- 2 aluminum samples
  24 TOTAL

Contamination measurements varied across all four material streams. The cardboard stream was found to have the lowest contamination levels at five percent by weight. The aluminum can stream was measured to have the highest level of contamination at about 28 percent. This is primarily due to aluminum cans being contained in plastic bags (bagged cans were considered contamination) and steel/tin cans being mixed with aluminum.

Exhibits 8-11 present a summary composition of each of the four material streams and corresponding contamination rates. **Tables 10-13** include a detailed summary of each stream by material type.

Exhibit 8. Cardboard Material Stream Composition Summary

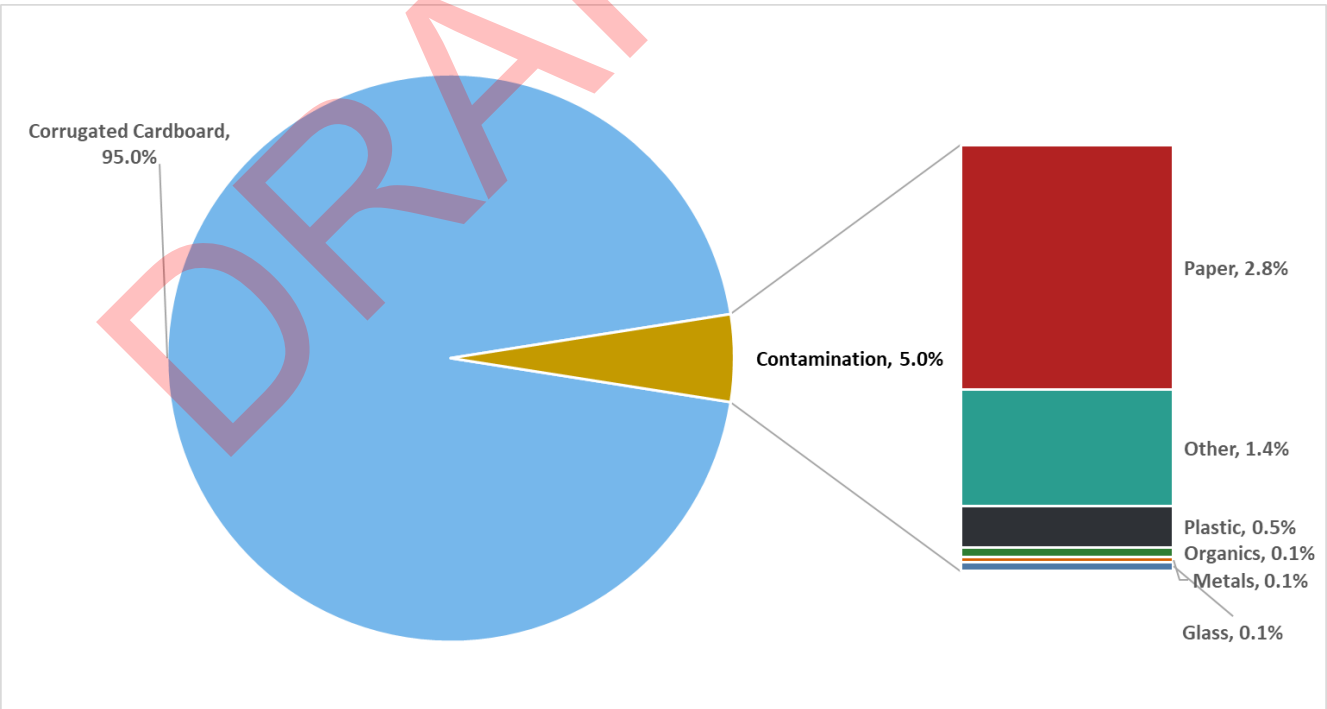

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Table 10. Cardboard Material Stream Composition Detailed

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	Upper
ACCEPTED RECYCLABLE MATERIALS				
Corrugated Cardboard	95.0%	4.9%	92.6%	97.5%
TOTAL RECYCLABLE MATERIALS	**95.0%**			
CONTAMINATION				
PAPER				
Mixed Paper	1.3%	1.2%	0.7%	1.9%
Non-recyclable Paper	1.5%	1.7%	0.7%	2.4%
Total Paper	**2.8%**			
PLASTIC				
PET #1	<0.1%	<0.1%	<0.1%	<0.1%
HDPE #2 - Natural	<0.1%	<0.1%	<0.1%	<0.1%
HDPE #2 - Colored	<0.1%	<0.1%	<0.1%	<0.1%
PVC #3	<0.1%	<0.1%	<0.1%	<0.1%
LDPE #4	<0.1%	<0.1%	<0.1%	<0.1%
PP #5	<0.1%	<0.1%	<0.1%	<0.1%
PS #6 - Expanded	0.2%	0.2%	<0.1%	0.3%
PS #6 - Rigid	<0.1%	<0.1%	<0.1%	<0.1%
Durable Plastics	<0.1%	<0.1%	<0.1%	<0.1%
#7 and Other Plastic	<0.1%	<0.1%	<0.1%	0.1%
Film Plastics	0.2%	0.1%	<0.1%	0.2%
Total Plastic	**0.5%**			
ORGANICS				
Wasted Food	<0.1%	<0.1%	<0.1%	0.1%
Yard Waste	<0.1%	<0.1%	<0.1%	<0.1%
Textiles and Shoes	<0.1%	<0.1%	<0.1%	<0.1%
Total Organics	**0.1%**			

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Table 10. Cardboard Material Stream Composition Detailed (cont.)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	Upper
CONTAMINATION				
METALS				
Steel and Tin Cans	<0.1%	<0.1%	<0.1%	<0.1%
Aluminum Cans	<0.1%	<0.1%	<0.1%	<0.1%
Aersol Cans	<0.1%	<0.1%	<0.1%	<0.1%
Other Ferrous Metals	<0.1%	0.2%	<0.1%	0.1%
Other Non-Ferrous Metals	<0.1%	<0.1%	<0.1%	<0.1%
Total Other Metals	**<0.1%**			
GLASS				
Clear Glass	<0.1%	<0.1%	<0.1%	<0.1%
Green Glass	<0.1%	0.2%	<0.1%	0.2%
Amber Glass	<0.1%	<0.1%	<0.1%	<0.1%
Blue Glass	<0.1%	<0.1%	<0.1%	<0.1%
Other Glass	<0.1%	<0.1%	<0.1%	<0.1%
Total Glass	**0.1%**			
OTHER				
Bagged Recycling	0.2%	0.5%	<0.1%	0.4%
Bagged MSW	0.2%	0.3%	<0.1%	0.3%
Tanglers	<0.1%	<0.1%	<0.1%	<0.1%
Electronics	0.5%	1.8%	<0.1%	1.4%
C&D Waste	0.4%	0.8%	<0.1%	0.8%
HHW	<0.1%	0.2%	<0.1%	0.2%
Lithium Batteries	<0.1%	<0.1%	<0.1%	<0.1%
Tires	<0.1%	<0.1%	<0.1%	<0.1%
Other	0.1%	0.2%	<0.1%	0.2%
Fines	<0.1%	<0.1%	<0.1%	<0.1%
Total Other	**1.4%**			
TOTAL CONTAMINATION	**5.0%**			
TOTAL	**100.0%**			

Note: Composition based on 15 samples.

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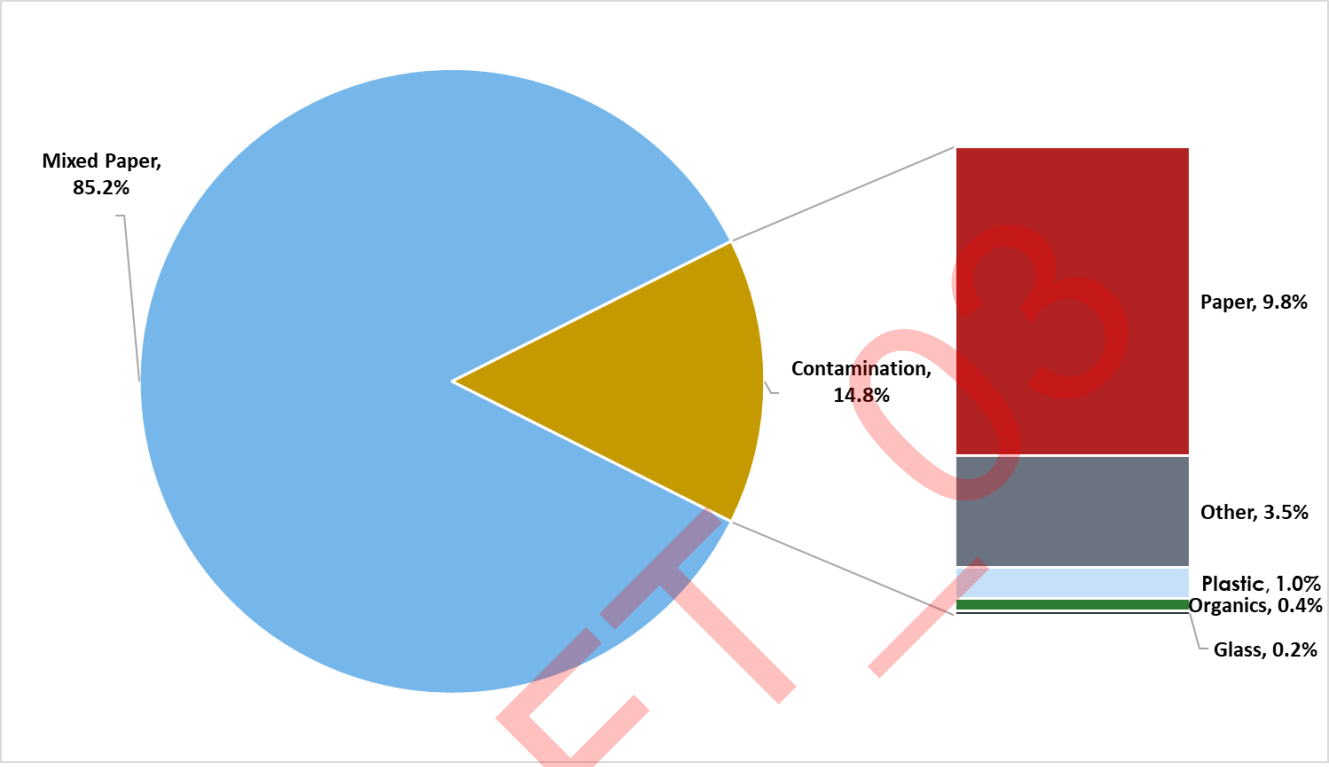
Exhibit 9. Mixed Paper Material Stream Composition Summary



DRAFT 08

Table 11. Mixed Paper Material Stream Composition Detailed

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	Upper
ACCEPTED RECYCLABLE MATERIALS				
Mixed Paper	85.2%	12.2%	73.2%	97.2%
TOTAL RECYCLABLE MATERIALS	**85.2%**			
CONTAMINATION				
PAPER				
Old Corrugated Cardboard	9.6%	12.3%	<0.1%	21.7%
Nonrecyclable Paper	0.2%	0.2%	<0.1%	0.4%
Total Paper	**9.8%**			
PLASTIC				
PET #1	<0.1%	<0.1%	<0.1%	0.1%
HDPE #2 - Natural	<0.1%	<0.1%	<0.1%	<0.1%
HDPE #2 - Colored	<0.1%	<0.1%	<0.1%	<0.1%
PVC #3	<0.1%	<0.1%	<0.1%	<0.1%
LDPE #4	<0.1%	<0.1%	<0.1%	<0.1%
PP #5	<0.1%	<0.1%	<0.1%	<0.1%
PS #6 - Expanded	0.4%	0.4%	<0.1%	0.8%
PS #6 - Rigid	<0.1%	<0.1%	<0.1%	<0.1%
Durable Plastics	0.2%	0.3%	<0.1%	0.5%
#7 and Other Plastic	<0.1%	<0.1%	<0.1%	<0.1%
Film Plastics	0.3%	0.2%	<0.1%	0.5%
Total Plastic	**1.0%**			
ORGANICS				
Wasted Food	0.2%	0.3%	<0.1%	0.5%
Yard Waste	<0.1%	<0.1%	<0.1%	<0.1%
Textiles and Shoes	0.1%	0.2%	<0.1%	0.3%
Total Organics	**0.4%**			

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Table 11. Mixed Paper Material Stream Composition Detailed (cont.)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
CONTAMINATION				
METALS				
Steel and Tin Cans	<0.1%	<0.1%	<0.1%	<0.1%
Aluminum Cans	<0.1%	<0.1%	<0.1%	<0.1%
Aersol Cans	<0.1%	<0.1%	<0.1%	<0.1%
Other Ferrous Metals	<0.1%	<0.1%	<0.1%	<0.1%
Other Non-Ferrous Metals	<0.1%	<0.1%	<0.1%	<0.1%
Total Other Metals	**<0.1%**			
GLASS				
Clear Glass	<0.1%	0.1%	<0.1%	0.2%
Green Glass	<0.1%	<0.1%	<0.1%	<0.1%
Amber Glass	<0.1%	<0.1%	<0.1%	<0.1%
Blue Glass	<0.1%	<0.1%	<0.1%	<0.1%
Other Glass	<0.1%	0.2%	<0.1%	0.3%
Total Glass	**0.2%**			
OTHER				
Bagged Recycling	0.3%	0.7%	<0.1%	1.0%
Bagged MSW	3.0%	3.0%	<0.1%	5.9%
Tanglers	<0.1%	<0.1%	<0.1%	<0.1%
Electronics	<0.1%	<0.1%	<0.1%	<0.1%
C&D Waste	<0.1%	<0.1%	<0.1%	<0.1%
HHW	<0.1%	<0.1%	<0.1%	<0.1%
Lithium Batteries	<0.1%	<0.1%	<0.1%	<0.1%
Tires	<0.1%	<0.1%	<0.1%	<0.1%
Other	0.1%	<0.1%	<0.1%	0.2%
Fines	<0.1%	<0.1%	<0.1%	<0.1%
Total Other	**3.5%**			
TOTAL CONTAMINATION	**14.8%**			
TOTAL	**100.0%**			

Note: Composition based on 4 samples.

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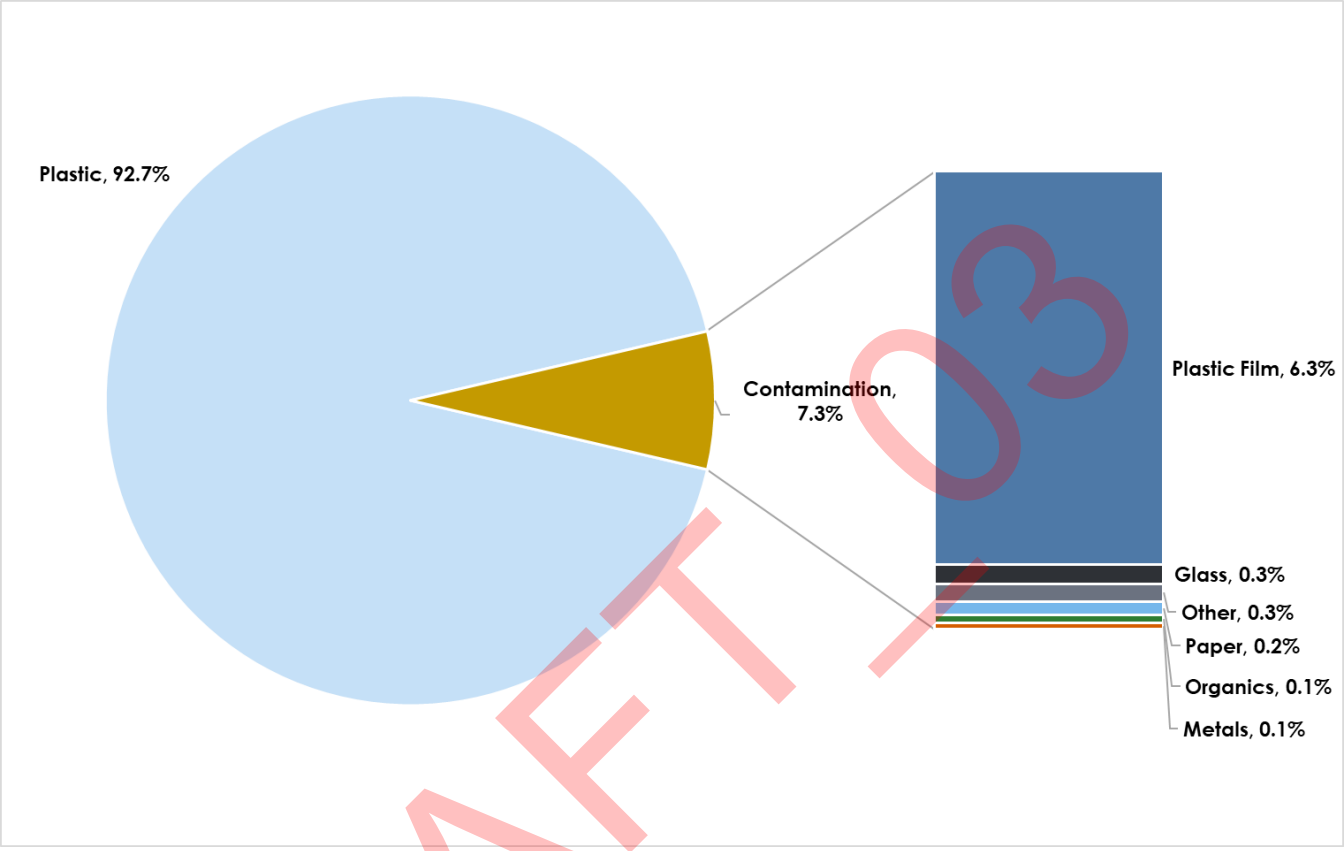
Exhibit 10. Plastic Material Stream Composition Summary



DRAFT 03

Table 12. Plastic Material Stream Composition Detailed

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	Upper
ACCEPTED RECYCLABLE MATERIALS				
PET #1	57.8%	2.6%	54.8%	60.7%
HDPE #2 - Natural	9.1%	0.8%	8.2%	10.1%
HDPE #2 - Colored	12.1%	1.4%	10.5%	13.7%
PVC #3	<0.1%	<0.1%	<0.1%	<0.1%
LDPE #4	<0.1%	<0.1%	<0.1%	<0.1%
PP #5	8.4%	0.4%	7.9%	8.9%
PS #6 - Expanded	0.4%	<0.1%	0.3%	0.4%
PS #6 - Rigid	0.7%	<0.1%	0.7%	0.7%
Durable Plastics	1.8%	0.5%	1.3%	2.4%
#7 and Other Plastic	2.4%	0.6%	1.6%	3.1%
TOTAL RECYCLABLE MATERIALS	**92.7%**			
CONTAMINATION				
PAPER				
Mixed Paper	<0.1%	<0.1%	<0.1%	0.2%
Old Corrugated Cardboard	<0.1%	0.1%	<0.1%	0.2%
Nonrecyclable Paper	<0.1%	<0.1%	<0.1%	<0.1%
Total Paper	**0.2%**			
PLASTIC				
Film Plastics	6.3%	0.7%	5.4%	7.1%
Total Plastic	**6.3%**			
ORGANICS				
Wasted Food	0.1%	<0.1%	<0.1%	0.2%
Yard Waste	<0.1%	<0.1%	<0.1%	<0.1%
Textiles and Shoes	<0.1%	<0.1%	<0.1%	<0.1%
Total Organics	**0.1%**			

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Table 12. Plastic Material Stream Composition Detailed (cont.)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	Upper
CONTAMINATION				
METALS				
Steel and Tin Cans	<0.1%	<0.1%	<0.1%	0.1%
Aluminum Cans	<0.1%	<0.1%	<0.1%	<0.1%
Aersol Cans	<0.1%	<0.1%	<0.1%	<0.1%
Other Ferrous Metals	<0.1%	<0.1%	<0.1%	<0.1%
Other Non-Ferrous Metals	<0.1%	<0.1%	<0.1%	<0.1%
Total Other Metals	**0.1%**			
GLASS				
Clear Glass	0.1%	<0.1%	<0.1%	0.2%
Green Glass	0.1%	0.1%	<0.1%	0.2%
Amber Glass	<0.1%	<0.1%	<0.1%	0.1%
Blue Glass	<0.1%	<0.1%	<0.1%	<0.1%
Other Glass	<0.1%	<0.1%	<0.1%	0.1%
Total Glass	**0.3%**			
OTHER				
Bagged Recycling	<0.1%	<0.1%	<0.1%	<0.1%
Bagged MSW	<0.1%	3.0%	<0.1%	3.5%
Tanglers	0.2%	<0.1%	0.1%	0.2%
Electronics	<0.1%	<0.1%	<0.1%	<0.1%
C&D Waste	<0.1%	<0.1%	<0.1%	<0.1%
HHW	<0.1%	<0.1%	<0.1%	<0.1%
Lithium Batteries	<0.1%	<0.1%	<0.1%	<0.1%
Tires	<0.1%	<0.1%	<0.1%	<0.1%
Other	<0.1%	<0.1%	<0.1%	0.1%
Fines	<0.1%	<0.1%	<0.1%	<0.1%
Total Other	**0.3%**			
TOTAL CONTAMINATION	**7.3%**			
TOTAL	**100.0%**			

Note: Composition based on 3 samples.

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Exhibit 11. Aluminum Material Stream Composition Summary

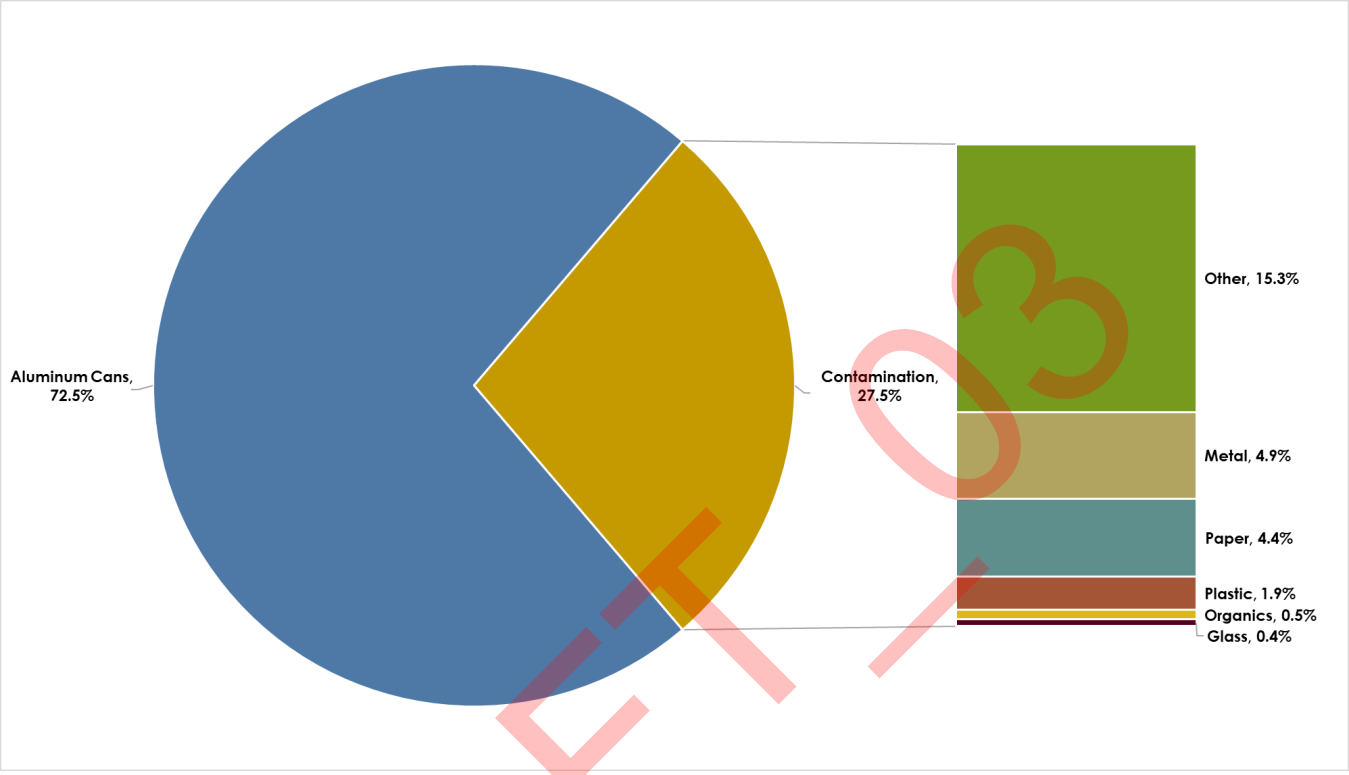

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Table 13. Aluminum Material Stream Composition Detailed

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
ACCEPTED RECYCLABLE MATERIALS				
Aluminum Cans	72.5%	8.8%	60.3%	84.7%
TOTAL RECYCLABLE MATERIALS	**72.5%**			
CONTAMINATION				
PAPER				
Mixed Paper	<0.1%	<0.1%	<0.1%	<0.1%
Old Corrugated Cardboard	4.4%	4.0%	<0.1%	10.0%
Nonrecyclable Paper	<0.1%	<0.1%	<0.1%	<0.1%
Total Paper	**4.4%**			
PLASTIC				
PET #1	0.3%	0.1%	0.1%	0.5%
HDPE #2 - Natural	<0.1%	<0.1%	<0.1%	<0.1%
HDPE #2 - Colored	<0.1%	<0.1%	<0.1%	0.1%
PVC #3	<0.1%	<0.1%	<0.1%	<0.1%
LDPE #4	<0.1%	<0.1%	<0.1%	<0.1%
PP #5	<0.1%	<0.1%	<0.1%	0.1%
PS #6 - Expanded	<0.1%	<0.1%	<0.1%	<0.1%
PS #6 - Rigid	<0.1%	<0.1%	<0.1%	<0.1%
Durable Plastics	0.3%	0.5%	<0.1%	1.0%
#7 and Other Plastic	<0.1%	<0.1%	<0.1%	<0.1%
Film Plastics	1.0%	0.3%	0.6%	1.4%
Total Plastic	**1.9%**			
ORGANICS				
Wasted Food	0.2%	0.2%	<0.1%	0.5%
Yard Waste	<0.1%	<0.1%	<0.1%	0.1%
Textiles and Shoes	0.2%	<0.1%	0.2%	0.3%
Total Organics	**0.5%**			

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Table 13. Aluminum Material Stream Composition Detailed (cont.)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	Upper
CONTAMINATION				
METALS				
Steel and Tin Cans	4.5%	0.5%	3.9%	5.2%
Aersol Cans	<0.1%	<0.1%	<0.1%	<0.1%
Other Ferrous Metals	<0.1%	<0.1%	<0.1%	<0.1%
Other Non-Ferrous Metals	0.4%	0.4%	<0.1%	1.0%
Total Other Metals	**4.9%**			
GLASS				
Clear Glass	0.2%	<0.1%	0.1%	0.2%
Green Glass	<0.1%	<0.1%	<0.1%	<0.1%
Amber Glass	<0.1%	<0.1%	<0.1%	0.2%
Blue Glass	<0.1%	<0.1%	<0.1%	<0.1%
Other Glass	0.1%	0.2%	<0.1%	0.4%
Total Glass	**0.4%**			
OTHER				
Bagged Recycling	14.5%	2.3%	11.3%	17.7%
Bagged MSW	0.3%	0.4%	<0.1%	0.8%
Tanglers	<0.1%	<0.1%	<0.1%	<0.1%
Electronics	<0.1%	<0.1%	<0.1%	<0.1%
C&D Waste	<0.1%	<0.1%	<0.1%	0.1%
HHW	0.2%	0.3%	<0.1%	0.7%
Lithium Batteries	<0.1%	<0.1%	<0.1%	<0.1%
Tires	<0.1%	<0.1%	<0.1%	<0.1%
Other	0.1%	<0.1%	<0.1%	0.1%
Fines	<0.1%	<0.1%	<0.1%	0.1%
Total Other	**15.3%**			
TOTAL CONTAMINATION	**27.5%**			
TOTAL	**100.0%**			

Note: Composition based on 2 samples.

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CONSTRUCTION/DEMOLITION/BULKY WASTE

This section presents the composition estimated for construction/demolition/bulky waste disposed in Tennessee. A total of 289 waste loads were visually inspected and characterized at solid waste facilities across the State of Tennessee. The estimated percent composition by volume for each material was recorded in the field. Additionally, for each sample visually characterized, information on the net weight and total estimated volume of the load was recorded. This field data was used in conjunction with volume-to-weight density conversion factors compiled by the U.S. EPA to estimate the weight of each material type visually identified.

Each material type weight was normalized to the net weight of the load as provided by scale house staff or truck drivers. Entire loads of construction/demolition/bulky waste were characterized as part of this study. **Table 14** provides a summary of the number of construction/demolition/bulky waste loads by Tennessee grand division. **Appendix D** provides the U.S. EPA Volume-to-Weight Material Conversion Factors.

Table 14. Summary of Construction/Demolition/Bulky Waste Loads Characterized

Grand Division	Number of Waste Loads	Percent of Total
West	116	40%
Middle	112	39%
East	61	21%
Total	**289**	**100%**

Construction/demolition and bulky waste streams tend to be more variable than typical MSW because they are driven by discrete projects and episodic cleanouts rather than routine daily generation. Loads may be dominated by a single material (e.g., drywall from interior renovations, treated wood from decking, concrete from demolition, or furniture from tenant turnover), and the mix can shift with the local construction cycle, storm and seasonal cleanup activity, and differences in who is delivering material (contractors, self-haul residents, or commercial cleanout crews). As a result, individual load compositions can vary substantially from one another even within the same facility and time period, and statewide averages should be interpreted as indicative of overall trends rather than predictive of any single load or short-term period.

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Overall

The overall State of Tennessee construction/demolition/bulky waste stream composition includes the average percentage of each material by weight for the 289 waste loads visually characterized as part of this study. Samples were visually characterized into the categories presented in **Table 3.** The most common materials estimated to comprise the construction/demolition/bulky waste stream, by weight, include:

- Dirt, Sand, and Soil (15.0 percent),
- Bricks, Rubble, Masonry, Concrete, etc. (14.2 percent), and
- Treated Wood (11.5 percent).

Exhibit 12 presents the summary of the construction/demolition/bulky waste stream composition and **Table 15** presents a detailed composition by material type.

Exhibit 12. Overall C&D Material Composition Summary

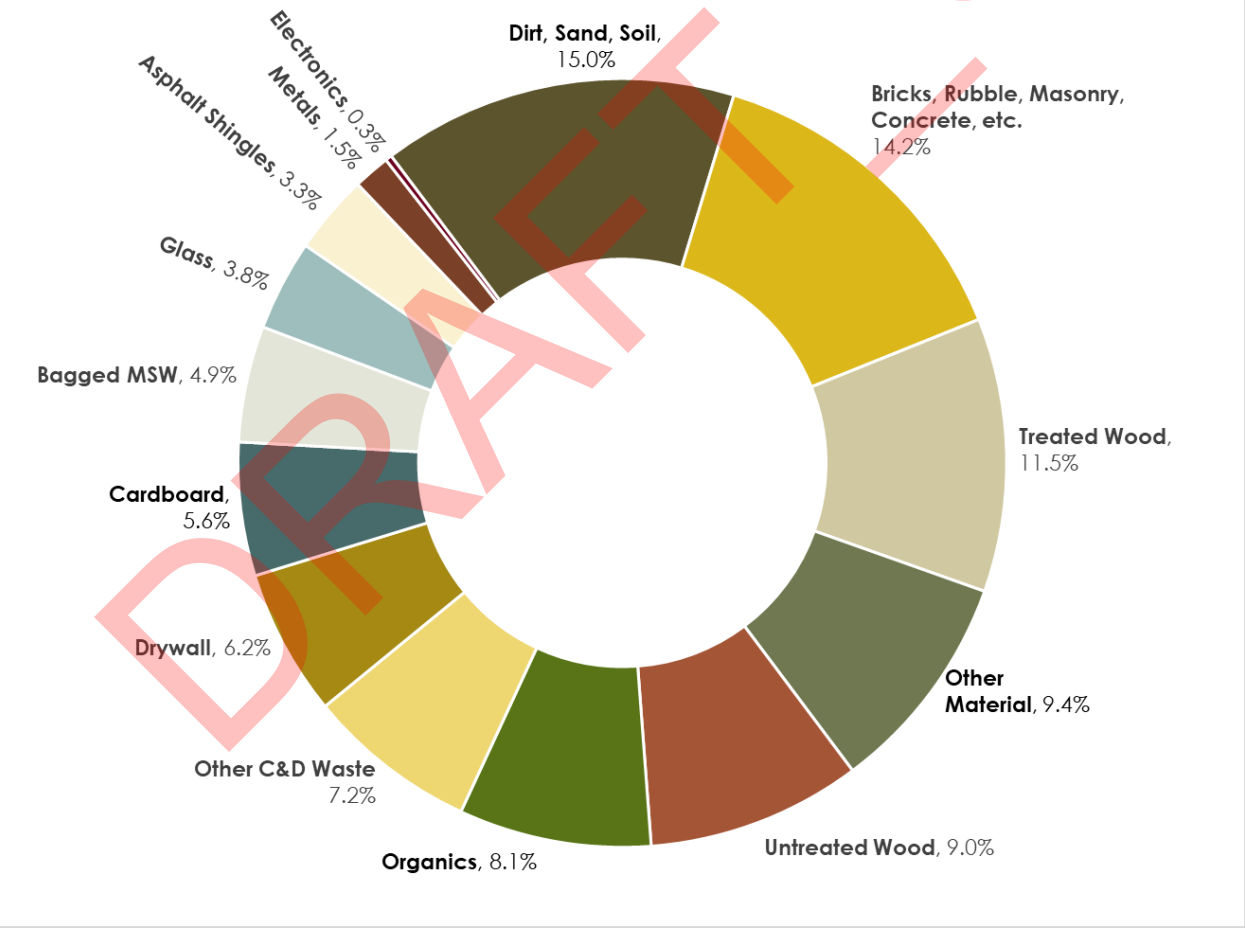

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Table 15. Overall C&D Material Composition Detailed

Material Components	Mean Composition
PAPER	
Old Corrugated Cardboard	5.6%
Total Paper	**5.6%**
ORGANICS	
Yard Waste	7.6%
Textiles and Shoes	0.5%
Other Organics	<0.1%
Total Organics	**8.1%**
METALS	
Ferrous Metals	1.1%
Non-Ferrous Metals	0.4%
White Goods	<0.1%
Total Metals	**1.5%**
GLASS	
Glass	3.8%
Total Glass	**3.8%**
CONSTRUCTION AND DEMOLITION DEBRIS	
Bricks, Rubble, Masonry, Concrete, etc.	14.2%
Drywall	6.2%
Untreated Wood	9.0%
Treated Wood	11.5%
Carpets	1.0%
Asphalt Shingles	3.3%
Insulation	0.4%
Other C&D Waste	5.9%
Total Construction and Demolition Debris	**51.5%**
ELECTRONICS	
Electronics	0.3%
Total Electronics	**0.3%**
OTHER MATERIAL	
Mattresses	1.0%
Tires	<0.1%
Furniture	2.2%
Durable Rigid Plastics	2.1%
Bagged MSW	4.9%
Dirt, Sand, Soil	15.0%
Other Material	4.0%
Total Other Material	**29.2%**
TOTAL	**100.0%**

Note: Composition based on 289 samples.

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West Division

The West Division construction/demolition/bulky waste stream composition includes the average percentage of each material by weight for the 116 material samples visually characterized as part of this study. The most common materials estimated to comprise the construction/demolition/bulky waste stream, by weight, include:

- Dirt, Sand, and Soil (24.0 percent),
- Untreated Wood (13.7 percent), and
- Other C&D Waste (13.4 percent).

Exhibit 13 presents the summary of the construction/demolition/bulky waste stream composition and **Table 16** presents a detailed composition by material type.

Exhibit 13. West Region C&D Material Composition Summary

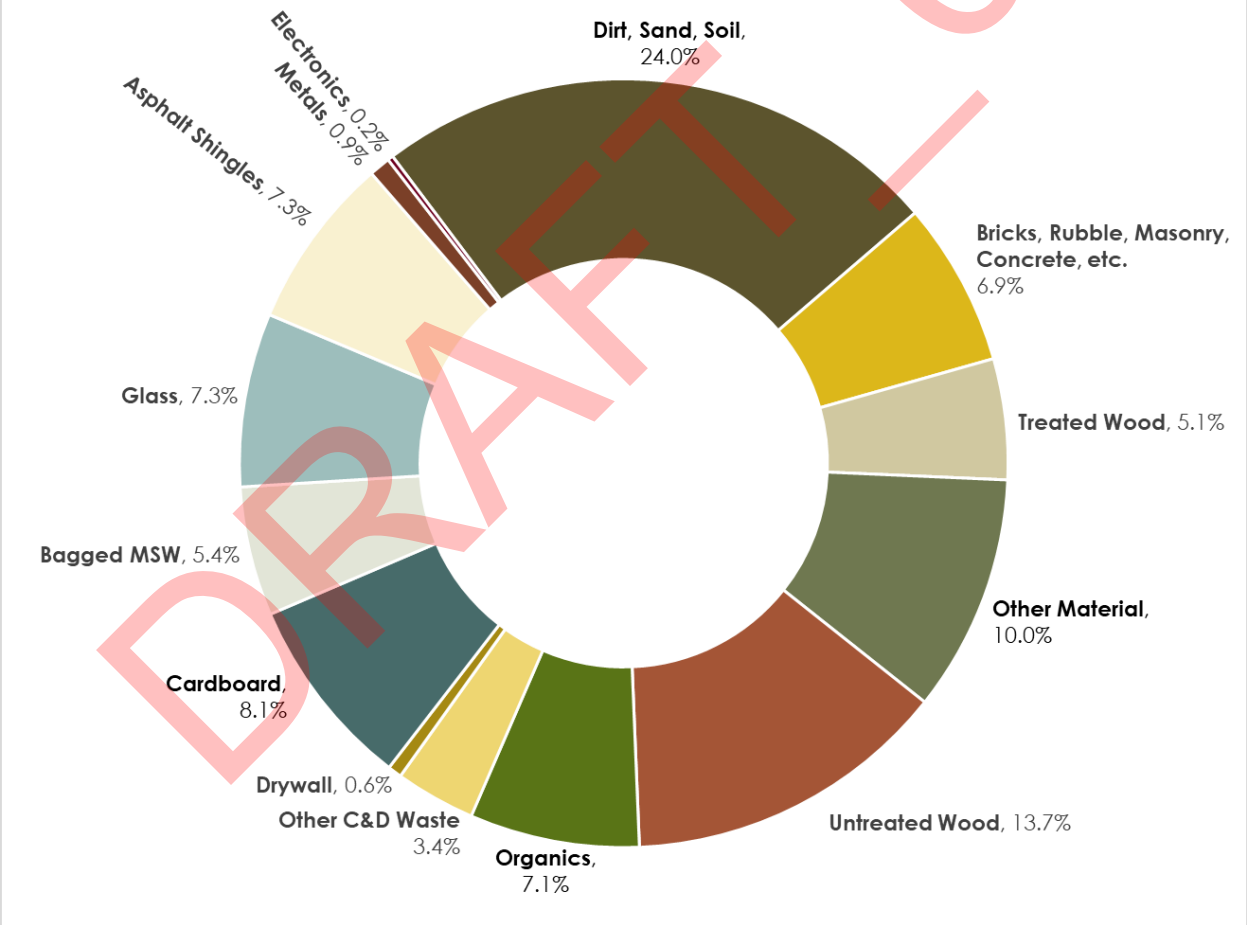

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Table 16. West Region C&D Material Composition Detailed

Material Components	Mean Composition
PAPER	
Old Corrugated Cardboard	8.1%
Total Paper	**8.1%**
ORGANICS	
Yard Waste	6.5%
Textiles and Shoes	0.7%
Other Organics	<0.1%
Total Organics	**7.1%**
METALS	
Ferrous Metals	0.7%
Non-Ferrous Metals	0.2%
White Goods	<0.1%
Total Metals	**0.9%**
GLASS	
Glass	7.3%
Total Glass	**7.3%**
CONSTRUCTION AND DEMOLITION DEBRIS	
Bricks, Rubble, Masonry, Concrete, etc.	6.9%
Drywall	0.6%
Untreated Wood	13.7%
Treated Wood	5.1%
Carpets	0.5%
Asphalt Shingles	7.3%
Insulation	0.7%
Other C&D Waste	2.3%
Total Construction and Demolition Debris	**36.9%**
ELECTRONICS	
Electronics	0.2%
Total Electronics	**0.2%**
OTHER MATERIAL	
Mattresses	0.2%
Tires	<0.1%
Furniture	2.2%
Durable Rigid Plastics	1.8%
Bagged MSW	5.4%
Dirt, Sand, Soil	24.0%
Other Material	5.7%
Total Other Material	**39.4%**
TOTAL	**100.0%**

Note: Composition based on 116 samples.

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Middle Tennessee

The Middle Division construction/demolition/bulky waste stream composition includes the average percentage of each material by weight for the 112 material samples visually characterized as part of this study. The most common materials estimated to comprise the construction/demolition/bulky waste stream, by weight, include:

- Other C&D Waste (20.3 percent),
- Brick, Rubble, Masonry, Concrete, etc. (18.6 percent),
- Organics (13.5 percent).

Exhibit 14 presents the summary of the construction/demolition/bulky waste stream composition and **Table 17** presents a detailed composition by material type.

Exhibit 14. Middle Region C&D Material Composition Summary

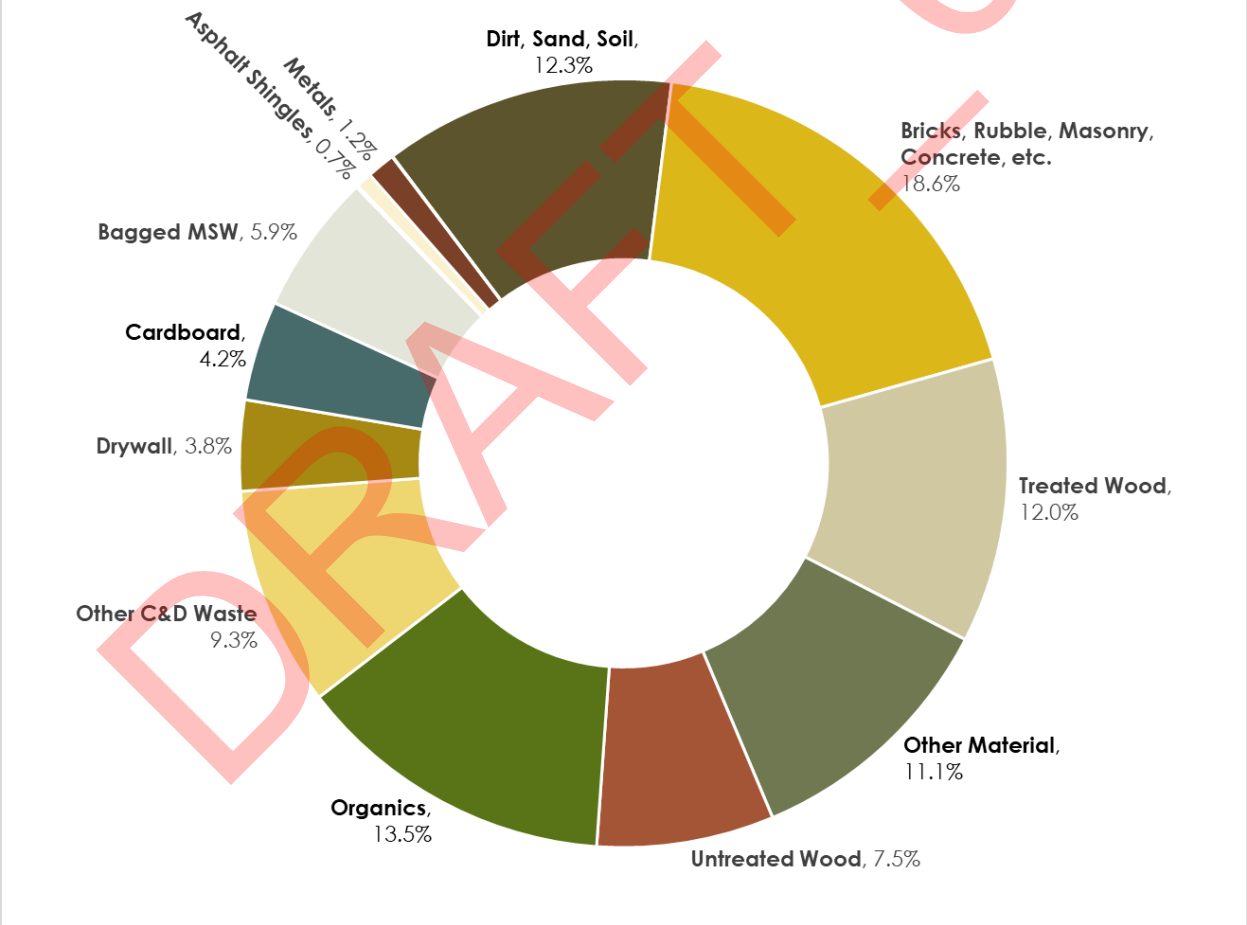

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Table 17. Middle Region C&D Material Composition Detailed

Material Components	Mean Composition
PAPER	
Old Corrugated Cardboard	4.2%
Total Paper	**4.2%**
ORGANICS	
Yard Waste	12.9%
Textiles and Shoes	0.6%
Other Organics	<0.1%
Total Organics	13.5%
METALS	
Ferrous Metals	1.1%
Non-Ferrous Metals	<0.1%
White Goods	<0.1%
Total Metals	**1.2%**
GLASS	
Glass	<0.1%
Total Glass	**<0.1%**
CONSTRUCTION AND DEMOLITION DEBRIS	
Bricks, Rubble, Masonry, Concrete, etc.	18.6%
Drywall	3.8%
Untreated Wood	7.5%
Treated Wood	12.0%
Carpets	1.1%
Asphalt Shingles	0.7%
Insulation	0.1%
Other C&D Waste	8.1%
Total Construction and Demolition Debris	**51.8%**
ELECTRONICS	
Electronics	<0.1%
Total Electronics	**<0.1%**
OTHER MATERIAL	
Mattresses	2.4%
Tires	<0.1%
Furniture	3.6%
Durable Rigid Plastics	2.5%
Bagged MSW	5.9%
Dirt, Sand, Soil	12.3%
Other Material	2.6%
Total Other Material	**29.3%**
TOTAL	**100.0%**

Note: Composition based on 112 samples

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East Tennessee

The East Division construction/demolition/bulky waste stream composition includes the average percentage of each material by weight for the 61 material samples visually characterized as part of this study. The most common materials estimated to comprise the construction/demolition/bulky waste stream, by weight, include:

- Treated Wood (21.1 percent),
- Brick, Rubble, Masonry, Concrete, etc. (19.5 percent),
- Drywall (18.5 percent).

Exhibit 15 presents the summary of the construction/demolition/bulky waste stream composition and **Table 18** presents a detailed composition by material type.

Exhibit 15. East Region C&D Material Composition Summary

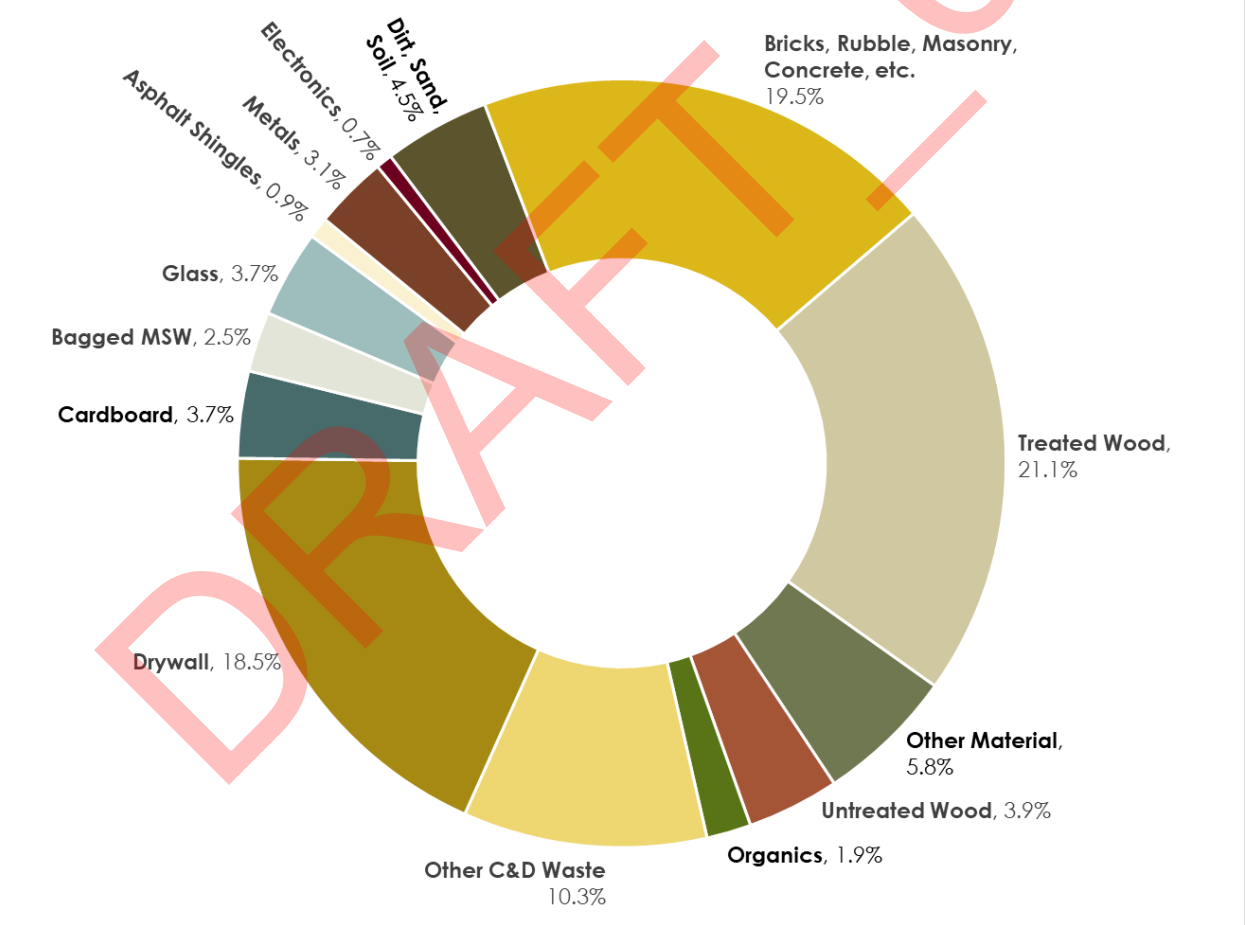

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Table 18. East Region C&D Material Composition Detailed

Material Components	Mean Composition
PAPER	
Old Corrugated Cardboard	3.7%
Total Paper	**3.7%**
ORGANICS	
Yard Waste	1.6%
Textiles and Shoes	0.2%
Other Organics	<0.1%
Total Organics	1.9%
METALS	
Ferrous Metals	1.8%
Non-Ferrous Metals	1.3%
White Goods	<0.1%
Total Metals	**3.1%**
GLASS	
Glass	3.7%
Total Glass	**3.7%**
CONSTRUCTION AND DEMOLITION DEBRIS	
Bricks, Rubble, Masonry, Concrete, etc.	19.5%
Drywall	18.5%
Untreated Wood	3.9%
Treated Wood	21.1%
Carpets	1.6%
Asphalt Shingles	0.9%
Insulation	0.2%
Other C&D Waste	8.4%
Total Construction and Demolition Debris	**74.2%**
ELECTRONICS	
Electronics	0.7%
Total Electronics	**0.7%**
OTHER MATERIAL	
Mattresses	0.4%
Tires	<0.1%
Furniture	0.3%
Durable Rigid Plastics	1.9%
Bagged MSW	2.5%
Dirt, Sand, Soil	4.5%
Other Material	3.2%
Total Other Material	**12.8%**
TOTAL	**100.0%**

Note composition based on 61 samples

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ESTIMATED ENERGY VALUE

This section presents an estimated energy value analysis of the municipal solid waste stream disposed in the State of Tennessee. Using published literature[2], each material category analyzed for this study was assigned a higher heating value and moisture content. The values were then applied to the overall statewide composition for each of the 10 material categories - including Paper, Rigid Plastic, Film Plastic, Organics, Metals, Glass, C&D Material, Household Hazardous Waste, Electronics, and Other.

This analysis calculates each material's contribution to overall moisture content and Higher Heating Value (HHV) measured in BTU/lb, which is essential for evaluating the energy recovery potential of select waste management processing technologies. Paper (25.4 percent), with low moisture content and a larger higher heating value, and Organics (30.7 percent), with a high moisture content and a lower heating value represent the largest portions of the waste stream. This analysis estimates the overall HHV of the waste stream to be approximately 5,820 BTU/lb. Table 19 includes the results of this analysis.

Table 19. Estimated MSW Stream Heating Value

Material Type	Statewide Waste Composition (%)	Percent Moisture (%)	Overall Moisture Contribution (%)	Higher Heating Value (BTU/lb)	Overall HHV Contribution (BTU/lb)
Paper	25.4%	6.0%	1.5%	7,200	1,832
Rigid Plastic	9.9%	2.0%	0.2%	14,000	1,383
Flim Plastic	9.1%	2.0%	0.2%	14,000	1,277
Organics	30.7%	70.0%	21.5%	2,000	615
Metals	5.0%	3.0%	0.1%	300	15
Glass	3.1%	2.0%	0.1%	60	2
C&D Material	3.0%	8.0%	0.2%	3,000	91
HHW	0.7%	20.0%	0.1%	8,000	57
Electronics	0.8%	20.0%	0.2%	60	1
Other	12.2%	20.0%	2.4%	4,500	549
TOTAL	**100.0%**		**26.6%**		**5,820**

GATE SURVEYS

SCS personnel surveyed incoming waste loads at select solid waste facilities to estimate the sources of municipal solid waste generated and disposed in the State of Tennessee. The goal of the gate surveys was to collect information on the amount of waste disposed by the residential and commercial generating sectors. Vehicles and waste screened as part of the gate surveys included only waste generated in Tennessee. If waste was identified as having originated from a state outside of Tennessee the survey on that load was not completed. If the driver indicated the waste originated

[2] Brunner and Schwarz (1983) Solid Waste Handbook

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in Tennessee, field personnel asked the driver to identify the primary source of the material. If loads were identified as mixed residential and commercial, the driver was asked to estimate the percentage of the material from each source. Interviewing drivers for the gate surveys occurred after they had entered the solid waste facility and had received their scale ticket. Field personnel requested to see each driver's scale ticket to record the net weight of each load. Gate surveys captured data from a total of 429 waste collection records across the three geographic regions of Tennessee: West, Middle, and East.

Overall, the surveys collected data on approximately 3,195 tons of waste statewide, with 2,017 tons classified as residential (63.1 percent) and 1,178 tons as commercial (36.9 percent). Results show the West Tennessee region had the most balanced split with 50.7 percent residential and 49.3 percent commercial (464 vs. 451 tons). Middle and East Tennessee data indicate that residential waste is the predominate type of MSW disposed of in these regions. Exhibit 16 presents the average statewide distribution of residential and commercial MSW.

Exhibit 16. Statewide MSW Distribution

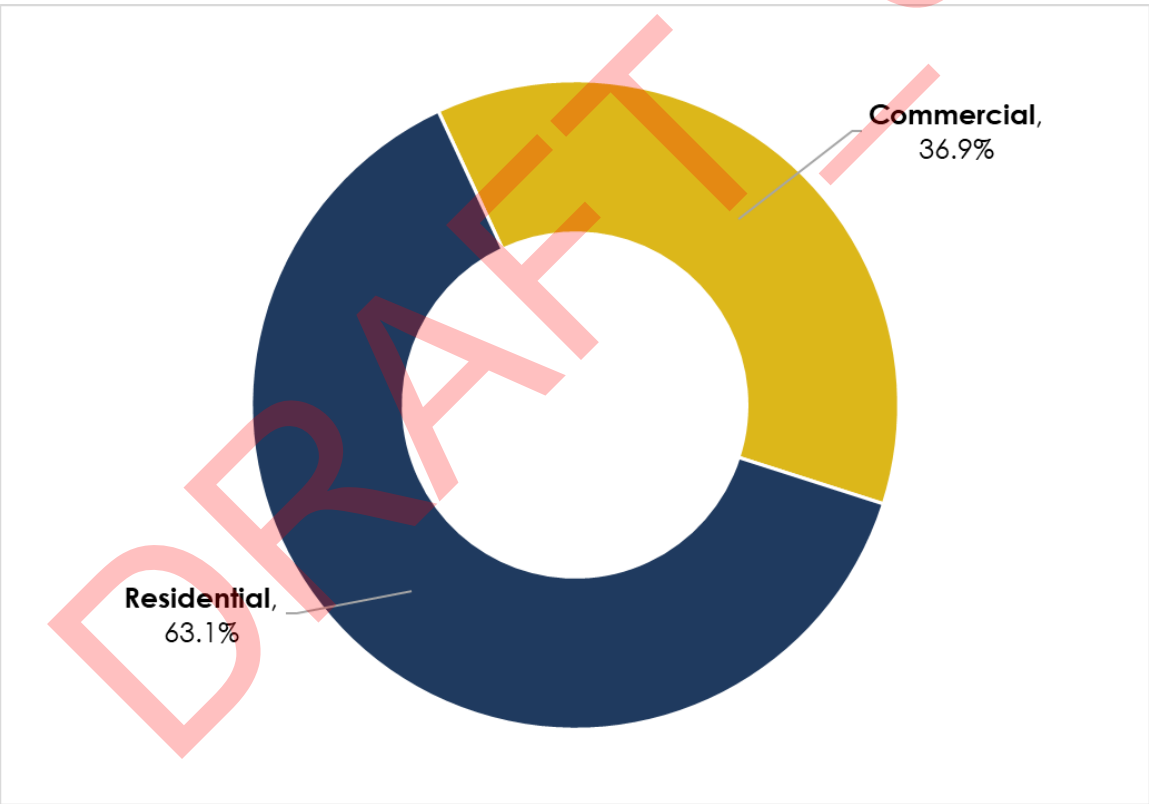

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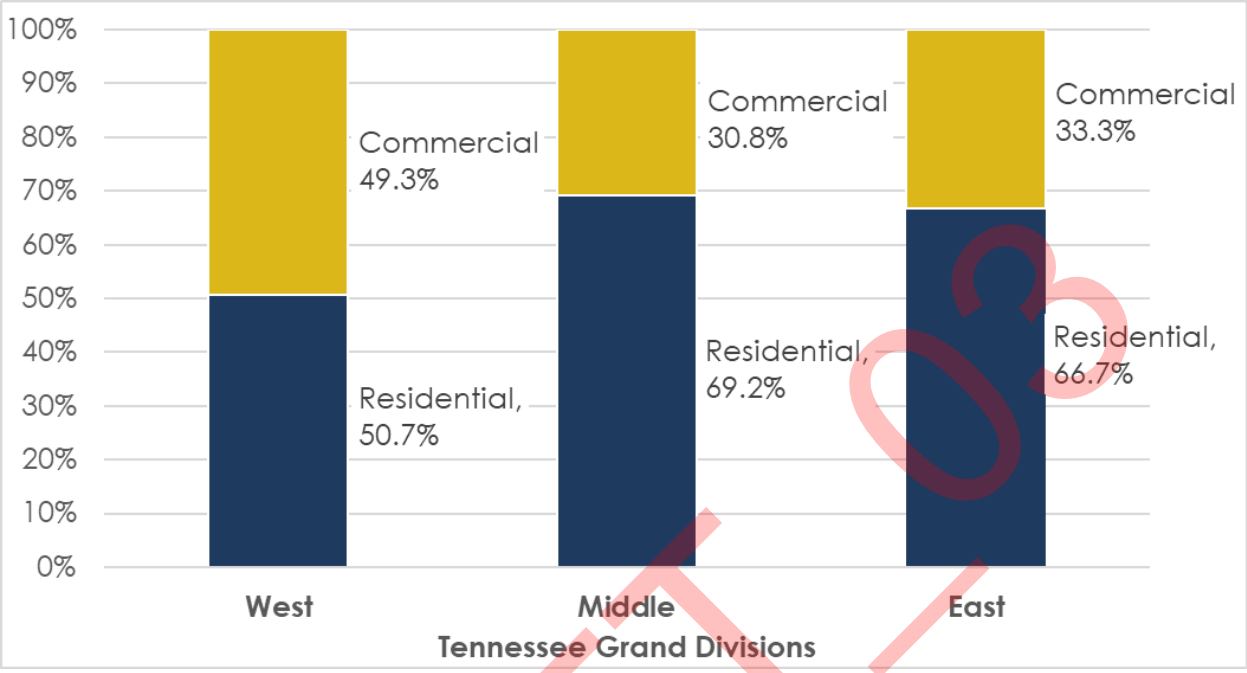
Exhibit 17 presents the distribution of residential and commercial MSW by Tennessee's grand divisions.

Exhibit 17. MSW Distribution by Grand Division



SURVEYS

Residential Food Waste Management

The Residential Food Scrap Management Survey was developed to better understand how households currently manage uneaten food and inedible food scraps, as well as residents' awareness of and interest in alternative food waste diversion options such as home composting, drop-off programs, and subscription or curbside collection services. The survey is designed to collect information on household characteristics, existing food scrap disposal practices, perceived barriers to participation in composting programs, and overall attitudes toward food waste reduction and sustainability initiatives. These data should provide insight into both the scale of residential food waste generation and the behavioral, logistical, and service-related factors that influence participation in food waste diversion programs across Tennessee.

The intended audience for this survey included residents that generate food waste and discard it for disposal or place it in systems for recovery (i.e. composting, anaerobic digestion). Results of this study should be relevant to local governments, waste service providers, and composting or organics processing facilities as they assess potential demand for residential food waste collection or support services. More broadly, the survey findings are intended to inform planning level decisions related to food waste reduction strategies, public education needs, and the feasibility of expanding residential food waste management programs within the state. The survey was not distributed as part of this study. The survey can be found in **Appendix E.**

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Commercial Recycling Backhauling

The Quantifying Internally Managed Commercial Recyclable Materials in Tennessee Survey was developed to improve understanding of commercial recyclable materials that are diverted from disposal through on-site or internally managed practices rather than through traditional municipal or private recycling collection systems. Some businesses manage recyclable materials such as corrugated cardboard, pallets, yard waste, or organics internally by reusing, densifying, donating, composting, or otherwise diverting materials prior to entering the solid waste stream. These activities are often not captured in disposal or recycling tonnage data, resulting in an incomplete picture of material recovery occurring across the state. This survey seeks to identify the types of recyclable materials internally managed, estimate the quantities managed through internal programs, and characterize the business sectors engaging in these practices. The resulting data may support a more accurate assessment of commercial sector diversion and help inform statewide waste characterization, recycling rate estimates, and solid waste management planning efforts in Tennessee.

The primary audience for this survey includes staff at companies and organizations that may manage recyclable materials on their own. By documenting internally managed recyclable materials, the survey provides decision-makers with data needed to better evaluate existing diversion pathways, identify opportunities to expand recovery outside of traditional collection programs, and recognize the role that commercial generators play in reducing disposal and supporting a more circular materials economy in Tennessee. The survey was not distributed as part of this study. The survey can be found in **Appendix E**.

Understanding Food Waste Diversion Practices

This section summarizes the findings from a statewide survey conducted to assess current food waste management practices, community attitudes, existing infrastructure, and barriers to food waste diversion across the State of Tennessee. The survey collected 44 responses from local government officials and solid waste coordinators between December 2025 and March 2026, providing insights into the current landscape of food waste management across the state's three grand divisions.

Introduction and Methods

The survey targeted individuals with knowledge of local solid waste management operations, including county-level solid waste coordinators, mayors, government officials, and regional authority representatives. Respondents represented communities across all three grand divisions of Tennessee: West, Middle, and East. The majority of respondents (approximately 82 percent) identified as county-level solid waste coordinators, with additional responses from mayors, county commissioners, and regional authority coordinators.

The survey addressed several key areas: respondent demographics and professional roles, geographic location, community support levels for sustainable waste management, awareness of existing food waste policies and collection services, knowledge of processing facilities, public interest in food waste programs, and perceived barriers to program implementation.

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Results

Survey responses were distributed across Tennessee's three grand divisions, with the highest concentration from East Tennessee (18 responses), followed by Middle Tennessee (21 responses), and West Tennessee (5 responses). This distribution provides reasonable coverage of the state's diverse geographic and demographic characteristics.

Community Support

Community support for sustainable solid waste management efforts varied considerably across respondents. On a scale of 1 to 5, responses ranged from moderately unsupportive (rating of 2) to highly supportive (rating of 5). Several communities in Knox County, Shelby County, Rhea County, Blount County, Cheatham County, and Hickman County reported the highest levels of community support (rating of 5), suggesting strong public interest in waste reduction initiatives in these areas. However, multiple counties, including McMinn, Chester, Hardin, Gibson, Marion, and Smith, reported lower support levels (rating of 2), indicating potential challenges in implementing new food waste programs in these communities.

Planning and Collection

The survey revealed significant gaps in formal food waste planning at the local level. When asked whether local solid waste planning documents discuss or address food waste minimization and diversion, most respondents (approximately 68 percent) indicated "No," while others responded "Unknown" or "Maybe." Only five respondents confirmed that their local planning documents address food waste: Roane County, Sevier County, Franklin County, Putnam County, and Cheatham County.

Similarly, existing food waste collection services remain limited across the state. Most respondents (approximately 77 percent) reported that no separate food waste collection services are provided by private haulers, municipalities, or other entities in their communities. Only four respondents indicated awareness of such services: Knox County mentioned the University of Tennessee Composting Facility (limited to students and faculty), Wayne County referenced the Turney Center Annex hauling food waste to Hickman County for composting, Shelby County identified Life Building Incorporated, and Roane County noted food waste diversion by Kroger, Walmart, and TVA Kingston.

Infrastructure

The availability of non-disposal facilities that accept source-separated food waste for beneficial use remains limited throughout Tennessee. Approximately 73 percent of respondents indicated that no such facilities exist in their communities, with several others responding "Unknown." Notable exceptions include:

- Knox County: University of Tennessee Composting Facility (students and faculty only)
- Bradley County: NewTerra Composting at North Farmers Market (requires additional advertising)
- Shelby County: Life Building Incorporated, operated by Hosea Houston
- Washington County: Hoffman Composting in Johnson City
- Sevier County: A facility that processes all MSW including organics (not source-separated)
- Cheatham County: The Compost Company

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The Sevier County response highlights an important distinction: their facility accepts all municipal solid waste and processes organics without requiring source separation, which represents a different operational model than traditional source-separated food waste composting.

Public Interest and Demand

Public interest in source-separated food waste collection varies considerably across communities. Approximately 23 percent of respondents indicated definitive public interest ("Yes"), including Knox County, Fentress County, Bradley County, and Shelby County. However, a significant portion (approximately 32 percent) responded "Maybe," suggesting uncertain or emerging interest, while approximately 27 percent reported no public interest. The remaining respondents indicated uncertainty about public demand.

This mixed response suggests that public education and awareness campaigns may be necessary precursors to successful program implementation in many communities.

Barriers to Food Waste Diversion

The survey identified numerous barriers to starting or expanding food waste diversion programs. The most frequently cited barriers include:

- **Unavailable Processing Facilities:** This emerged as the most cited barrier, mentioned by approximately 70 percent of respondents. The lack of local composting sites, anaerobic digesters, or other processing infrastructure represents a fundamental obstacle to program development.

- **Cost Considerations:** Financial constraints were cited by approximately 55 percent of respondents as a significant barrier. This includes capital costs for equipment, operational expenses, staffing, and the absence of sustainable funding mechanisms.

- **Unknown or No Demand for End Products:** Approximately 50 percent of respondents expressed concern about the marketability of finished compost or other end products, reflecting uncertainty about the economic viability of food waste processing operations.

- **Equipment Limitations:** Many communities lack the specialized equipment necessary for food waste collection and processing, with approximately 45 percent of respondents identifying this as a barrier.

- **Staffing Challenges:** Personnel shortages and the need for specialized training were cited by approximately 40 percent of respondents as obstacles to program implementation.

- **Lack of Processing Knowledge:** Technical expertise gaps were noted by approximately 35 percent of respondents, suggesting a need for educational resources and training programs.

- **Potential Facility Neighbors:** Community opposition to siting composting or processing facilities was mentioned by some respondents, particularly in Knox County, where past experiences with composting operations have created public resistance.

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Additional barriers mentioned by individual respondents include difficulties in waste segregation, rural community characteristics limiting feasibility, and competing priorities for existing recycling programs.

Recommendations and Considerations from Respondents

Several respondents provided constructive feedback and recommendations for TDEC consideration that included the following:

- **Public Education Campaigns:** Multiple respondents suggested expanding public awareness efforts, including suggestions to leverage the "Nobody Trashes Tennessee" campaign to promote composting and highlight the environmental impact of food waste in landfills.
- **Regional Partnerships:** Smaller counties may benefit from partnering with neighboring jurisdictions to achieve economies of scale in collection and processing operations.
- **Private Sector Engagement:** Several respondents expressed interest in promoting private sector solutions rather than public sector operation of composting facilities.
- **Backyard Composting Promotion:** Some communities are already providing education and compost bins (such as Earth Machine units) to encourage residential composting as an alternative to centralized collection. By managing food waste on the property where it is generated, it saves energy and staff resources in the public or private sector from having to collect, transport, and process the materials.

Summary

The survey results indicate that Tennessee faces significant challenges in expanding food waste diversion programs, including limited processing infrastructure, financial constraints, uncertain end-product markets, and varying levels of public interest and community support. However, pockets of activity and interest exist throughout the state, particularly in larger urban areas and communities with higher baseline support for sustainable waste management.

Moving forward, TDEC may consider targeted investments in processing infrastructure development, technical assistance programs for local governments, public education initiatives, and exploration of regional partnership models to address the systemic barriers identified through this survey. The responses also suggest that private sector engagement and market development for compost products should be priorities in developing a comprehensive statewide food waste diversion strategy. The survey can be found in **Appendix E**.

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5 RECOMMENDATIONS

Based on the Tennessee Statewide Waste Characterization Study data collected and analyzed, Tennessee's waste stream presents significant opportunities for increased waste reduction and diversion. The composition data reveals that **approximately 70-75 percent of Tennessee's waste stream consists of potentially recyclable or compostable materials** that are currently being landfilled. This discussion presents evidence-based policy recommendations organized into six strategic focus areas to help Tennessee achieve meaningful improvements in waste diversion rates.

ORGANICS

According to the composition data organic materials constitute 30.7 percent of Tennessee's overall waste stream - the single largest material type measured. This breaks down as follows:

Organic Material Type	Overall Composition	Residential Composition	Commercial Composition
Wasted Food (Edible)	15.1%	14.5%	15.9%
Wasted Food (Inedible)	4.7%	4.5%	4.9%
Yard Waste	2.2%	2.7%	1.5%
Textiles and Shoes	5.2%	5.0%	5.4%
Wood (Non-C&D)	0.4%	0.3%	0.5%
Other Organics	3.2%	4.0%	2.1%
Total Organics	**30.7%**	**31.0%**	**30.4%**

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- Commercial Food Waste Recovery Infrastructure Investment - The commercial sector data shows that 20.8 percent of commercial waste is wasted food (edible and inedible) - the highest among all material types. Recommended support the State of Tennessee might provide includes:
    - Grants for municipal and non-profit composting facilities across all three grand divisions (West, Middle, and East Tennessee)
    - Tax incentives for businesses installing food waste processing equipment
    - Public-private partnerships for anaerobic digestion facilities to capture energy value
- Statewide Organics Diversion Goal for Large Generators – The State of Tennessee might consider implementing a phased organic waste disposal diversion goal modeled after other successful state programs. Such a program would establish thresholds by which organic waste generators would be asked to divert organic waste material from disposal. An example program

might be like the example program below with specific thresholds and timelines to be set by TDEC after stakeholder engagement:

  - **Phase 1 (Year 1-2):** Require commercial generators producing >2 tons/week of food waste to divert organic materials
  - **Phase 2 (Year 3-4):** Reduce threshold to >1 ton/week
  - **Phase 3 (Year 5+):** Reduce threshold to >0.5 tons/week

- **Residential Organics Collection Programs** – With 19.0 percent of residential wasted food (edible and inedible food items), the State of Tennessee might consider the following options:
  - Provide matching grants for municipalities implementing curbside organics collection
  - Support community composting programs in urban and suburban areas
  - Fund educational campaigns on backyard composting techniques

- **Food Rescue and Donation Programs -** Given that wasted food (edible) alone represents 15.1 percent of the total waste stream, the State of Tennessee might consider the following options:
  - Create tax incentives for food donation beyond federal deductions
  - Fund regional food bank infrastructure and transportation networks
  - Establish a statewide food rescue coordination platform in conjunction with the Get Food Smart TN program

PAPER AND CARDBOARD RECOVERY ENHANCEMENT

The composition data reveals that paper materials comprise 25.4 percent of Tennessee's overall waste stream, making it the second-largest category:

Paper Material Type	Overall Composition	Residential Composition	Commercial Composition
Compostable Paper	6.4%	6.6%	6.2%
Old Corrugated Cardboard (OCC)	7.2%	4.6%	10.6%
Paperboard	4.4%	5.3%	3.1%
Mixed Paper	2.3%	2.1%	2.5%
Sorted Office Paper	2.0%	2.3%	1.7%
Newspapers/Magazines	0.8%	1.0%	0.6%
Other Paper (non-recyclable)	2.3%	2.1%	2.5%

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Paper Material Type	Overall Composition	Residential Composition	Commercial Composition
Total Paper	25.4%	24.0%	27.3%

The data shows a significant disparity: Old Corrugated Cardboard represents **10.6 percent of commercial waste** stream compared to only 4.6 percent of the residential waste stream. This indicates substantial commercial OCC is being disposed rather than recycled, despite cardboard having established markets.

- **Commercial Cardboard Recycling** - Given that OCC is the most valuable and market-ready paper commodity, the following policy recommendations may support additional recovery of this material:
    - Encourage all commercial establishments generating >50 pounds/week of cardboard to recycle
    - Encourage the inclusion of recycling provisions in commercial lease agreements for multi-tenant properties

- **Strengthen Single-Stream Recycling Programs** - Data from the single stream MRF indicates significant contamination issues, with bagged MSW representing 5.9 percent and bagged recycling 3.1 percent of recycling stream samples. To address this the State of Tennessee might consider the following initiatives:
    - Fund contamination reduction education campaigns
    - Support automated sorting technology upgrades at MRFs
    - Encourage the establishment of standardized acceptable materials lists across the state

- **Support for Paper Mill Development** – The State of Tennessee may consider the following initiatives:
    - Provide economic development incentives for paper mills that prioritize the use of recycled paper
    - Create partnerships with regional paper manufacturers to expand the dialogue for how to make paper recycling more successful throughout the State
    - Support research into new applications for recovered paper fiber

- **Compostable Paper Diversion** – With 6.4 percent of waste being compostable paper (pizza boxes, paper towels, food-soiled paper), opportunities to encourage the diversion of this material might include:
    - Study the barriers and inclusion of compostable paper in organic waste collection programs and composting facilities

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- Develop clear labeling standards for compostable vs. recyclable paper products
- Support industrial composting facilities that accept paper products

PLASTICS MANAGEMENT AND REDUCTION

The overall waste stream composition for the State of Tennessee contains 18.9 percent plastics (rigid plastics and film). Given plastic waste comprises nearly one-fifth of the disposed waste stream, it is recommended the State consider the following policy and program initiatives to reduce and divert this material.

- Film Plastic Collection Programs – Film plastics in particular represent 9.1 percent of the waste stream but are typically excluded from curbside programs. Key options for preventing disposal and increasing diversion include the following:
  - Support retail take-back programs for plastic bags and film
  - Investigate chemical recycling technologies for film plastics
  - Partner with retail chains to expand store drop-off locations
  - Fund consumer education on film plastic recycling opportunities
- Reusable and Refillable Container Programs – PET #1 plastic comprises about three percent of the disposed waste stream. Visual observations from field activities indicate that a significant portion of PET #1 plastic is single-use disposable beverage bottles. In an effort to reduce plastic waste, the State of Tennessee might consider the following initiatives:
  - Pilot reusable container programs at universities and state facilities
  - Support businesses implementing refill/reuse models

METALS AND GLASS RECOVERY OPTIMIZAITON

Metals are often the most valuable part of a recycling program. The data shows 2.5 percent of the disposed waste stream is metal containers that in most cases are part of community recycling programs. Another 2.5 percent of the waste stream is other metal that may be recycled through other (non-curbside) recycling programs. Additionally, glass comprises 3.1% of Tennessee's overall waste stream.

- Aluminum Can Recovery Enhancement - Although aluminum cans comprise only 1.3 percent of the waste stream, their disposal represents a significant unrealized value. This is particularly important for recycling programs that often rely on rebates from higher value materials to sustain the overall program. To facilitate increased recovery of aluminum cans, the State of Tennessee might consider the following activities:
  - Partner with scrap metal industry for targeted collection programs
  - Support can collection at events, parks, and public spaces
  - Expand redemption center access in underserved communities
  - Educational campaigns on aluminum's high recycling value
- Glass Collection and Processing – To address challenges with the recovery and recycling of glass the following recommendations may be considered:

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- Invest in glass beneficiation facilities to improve material quality
- Develop alternative end markets (i.e., aggregate, filtration media)
- Consider glass-specific collection to reduce contamination in other recycling program types

- **Scrap Metal Diversion from Disposal** – The 2.2 percent of waste comprised of "other" ferrous and non-ferrous metals represents valuable materials that are currently being lost to disposal. The following efforts may assist in the recovery of this portion of the waste stream:

  - Require MRFs to maximize metal recovery from residuals
  - Support small-scale metal recovery at transfer stations
  - Strengthen scrap metal dealer regulations to prevent illegal dumping

CONSTRUCTION AND DEMOLITION AND SPECIAL WASTE MANAGEMENT

Construction and demolition materials represent 3.0 percent of Tennessee's MSW stream (higher percentages exist in dedicated C&D streams not fully captured here):

- **C&D Recycling Recommendations** - Tennessee may consider implementing C&D diversion recommendations for construction and demolition projects, particularly projects on state properties. These recommendations may include requesting C&D recycling plans for projects over $500,000, setting incremental minimum diversion rates (for example 50 percent by 2028, 75 percent by 2035, etc.); developing C&D processor certification standards; creating incentives for deconstruction vs. demolition activities

- **Carpet Stewardship Program** - With carpet at 0.6 percent of the waste stream the State may consider activities to support voluntary carpet recovery/reuse programs, partner with carpet recycling processors, promote Carpet America Recovery Effort (CARE) participation

- **Electronics Waste Management Enhancement** - Electronics comprise 0.8 percent of the stream. Efforts to divert this valuable and potentially hazardous material include:

  - Strengthen e-waste collection infrastructure
  - Support manufacturers' take-back programs
  - Confirm proper data destruction and materials recovery

- **Household Hazardous Waste Programs** - HHW at 0.7 percent of waste includes batteries, oil, paint, antifreeze, and other HHW:

  - Expand permanent HHW collection facilities statewide
  - Increase frequency of mobile HHW collection events
  - Support used oil recycling infrastructure

- **Tire Management** - Though tires represent only 0.4% of MSW, proper management is critical:

  - Maintain and strengthen tire processor licensing
  - Support tire-derived fuel and rubber mulch markets
  - Address legacy tire pile remediation on public property

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IMPLEMENTATION FRAMEWORK AND CROSS-CUTTING STRATEGIES

Regional Considerations

This study measured and collected data for Tennessee's three grand divisions to provide information that may facilitate regional approaches to reduce disposal and encourage waste prevention and recycling. Implementation of recommendations should consider:

- **Urban vs. Rural:** Different infrastructure needs and collection economics
- **Regional Markets:** Proximity to end markets varies across the state
- **Local Capacity:** Municipal staffing and budgets vary significantly

Cross-Cutting Policy Recommendations

1. Statewide Recycling Goal and Measurement

- Require standardized reporting from all haulers and facilities
- Publish annual progress reports with county-level data
- Create accountability mechanisms for goal achievement

2. Funding Mechanisms

Sustainable funding is essential for program success:

- **Solid Waste Disposal Surcharge:** Increase per-ton disposal fees to fund recycling
- **Grant Programs:** Continue and expand TDEC grant programs for local infrastructure
- **Green Bonds:** Issue bonds for major infrastructure investments

3. Education and Outreach

The recycling stream data shows significant contamination issues, indicating education needs:

- Statewide "Recycle Right Tennessee" campaign
- Standardized recycling education in K-12 curriculum
- Multi-language outreach materials
- Social media and digital engagement strategies
- Business technical assistance programs

4. Market Development

Strong end markets are essential for recycling success:

- Create state procurement preferences for recycled-content products
- Support manufacturing facilities using recycled feedstocks
- Partner with economic development agencies on recycling industry recruitment
- Invest in research on emerging recycling technologies

INFRASTRUCTURE INVESTMENT PRIORITIES

Based on material composition priority investments should target:

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1. **Composting/Anaerobic Digestion** (30.7% organics)
2. **MRF Upgrades** (contamination reduction)
3. **Transfer Stations** (rural collection efficiency)
4. **Film Plastic Processing** (9.1% of waste stream)
5. **Glass Beneficiation** (improve material quality)

Regulatory Framework Updates

- Update solid waste regulations to reflect modern materials
- Establish material-specific handling requirements
- Create certification programs for recycling facilities
- Strengthen enforcement for illegal dumping and improper disposal

SUMMARY: PRIORITY ACTIONS BY IMPACT POTENTIAL

Priority	Initiative	Waste Stream Impact	Implementation Timeframe
1	Organic Waste Programs	30.7% of waste	2-5 years
2	Commercial Cardboard Mandate	10.6% of commercial	1-2 years
5	C&D Recycling Recommendations	3.0% of MSW	2-3 years
6	Film Plastic Collection	9.1% of waste	2-4 years

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Conclusion

The Tennessee Statewide Waste Characterization Study data reveals that approximately 70-75 percent of Tennessee's current waste stream consists of potentially recoverable materials. The largest opportunities exist in:

1. **Organics** (30.7 percent) through composting, anaerobic digestion, and food rescue
2. **Paper/Cardboard** (25.4 percent) through enhanced recycling and diversion programs
3. **Plastics** (18.9 percent) through film collection and infrastructure investment

By implementing the policy recommendations outlined in this discussion—with appropriate funding, education, and regulatory support—Tennessee can significantly increase waste diversion rates, reduce landfill dependency, create green jobs, and contribute to environmental sustainability goals.

The data-driven approach using composition study results ensures that resources are directed toward the highest-impact opportunities.

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Appendix A

Sample Site-Specific Health and Safety Plan

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Site-Specific Health and Safety Plan for TDEC Statewide Waste Characterization Study

Bi-County Solid Waste Landfill

3212 Dover Road
Woodlawn, TN 37191

November 17-21, 2025

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REQUIRED APPROVAL			
SCS OSHC or designee:	Jared Hamela	Date:	
SCS PM	Brent Dieleman	Date:	11/13/2025
SCS Field Manager:	Brent Dieleman	Date:	11/13/2025

Project No.:	02224033.00
Project Name:	TDEC Statewide Waste Characterization
Primary Site Address:	3212 Dover Rd, Woodlawn, TN 37191
Client Contact:	Mark Neblett

EMERGENCY TELEPHONE NUMBERS	
Fire:	911 or (931) 645-7456 (non-emergency)
Police:	911 or (931) 648-0656 (non-emergency)
Hospital	Tennova Healthcare – Clarksville 651 Dunlop Ln Clarksville, TN 37040 (931) 502-1000
Ambulance:	911
WorkCare	(888) 449-7787 (for SCS staff health issues)
The directions and information on the nearest hospital are found on Page 3.	

ACKNOWLEDGEMENT PAGE

"I have read the Health and Safety Plan for the TDEC Statewide Waste Characterization Study. I have discussed any questions and/or concerns regarding the contents of this document with the designated SCS project safety representative, and I understand its requirements. I understand that failure to comply with safety regulations and this Health and Safety Plan, as well as failure to use safety and personal protective equipment or wandering outside of the area designated by the SCS Field Manager, shall be grounds for immediate dismissal."

Name	Signature	Company	Date

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Attachments

Attachment 1 – Job Task Safety Analysis and PPE Assessment Form

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1 INTRODUCTION

At SCS, protection of human health and the environment is paramount. This Site-Specific Health and Safety Plan (SSHSP) provides information to identify hazards that may be present and/or introduced by the activities completed for this project and details needed precautions that employees should follow to protect themselves. Tasks performed on the job site during the project should be analyzed to understand if physical or chemical hazards requiring safeguards or additional Personal Protective Equipment (PPE) exist. This plan will be modified as necessary if new hazards are identified during the project that require additional safeguards be put in place. The contents and requirements in this plan apply to SCS staff and subcontractors working at the Bi-County Solid Waste Landfill located at 3212 Dover Road, Woodlawn, TN 37191.

PROJECT ORGANIZATION

SCS Field Manager:	Brent Dieleman	202-841-9827
SCS Project Manager:	Brent Dieleman	202-841-9827
SCS Project Director	Stacey Demers	703-929-2986
Bi-County Solid Waste Balefill/Landfill Client Contact	Mark Neblett	931-320-2059

SCOPE OF WORK – WASTE CHARACTERIZATION

Waste characterization involves collecting field samples and sorting municipal solid waste and recyclable materials into designated categories. The data that is generated from the field activities will be compiled and provided to the Tennessee Department of the Environment (TDEC).

There have been no reported serious or fatal incidents attributed specifically to the performance of waste characterization studies. However, accidents may occur due to the potential hazards associated with the presence of heavy equipment at the site, the components of the waste itself (potentially sharp objects, broken glass), climatic conditions, and carelessness.

The presence of heavy equipment in operation at the site (end loaders, graders, compactors, garbage trucks, etc.) presents potential hazards which can be avoided using general common sense and staying visible. The equipment operators generally are involved in performing their tasks and may be unaware of the presence of other individuals within the immediate area. Personnel will be trained to be aware of the movement and location of equipment at all times. Wearing high-visibility safety vests and hard hats is required at all times while onsite.

The components of municipal solid waste present potential physical hazards. These include, but are not limited to, cuts from broken glass and sharp metal objects; splinters from pieces of wood; punctures from nails, needles, or other sharp objects; and scrapes and abrasions from the general handling of solid waste. There also exists the potential for exposure to household products, such as bleach, cleaners, and other toxic chemicals.

To alleviate the possibility of injury, caution should be employed at all times when physically handling the waste and recyclable materials. Protective clothing, including nitrile and puncture-resistant gloves

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and safety glasses, should be worn at all times. If there is any question about the handling of a component of solid waste, the SCS Field Manager should be notified.

Waste characterization will be performed in an area that may not be climate controlled. Caution should be taken to avoid the possibility of heat stress due to protective clothing or weather, or frostbite in areas of extreme cold. Depending on temperature, portable heaters may be used to warm sorting personnel.

Refuse deposited at the work site can pose a potential fire hazard. Fires can be started through carelessness, sparks, or from "Hot Loads" handled at the work sites. If fire or smoke is observed, the site representative should be notified immediately. All SCS personnel and subcontractors should leave the immediate area at once, and the local emergency fire department should be notified.

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2 EMERGENCY RESPONSE AND MEDICAL TREATMENT PROCEDURES

EMERGENCY CONTACT AND NOTIFICATION INFORMATION

Nearest Emergency Medical Facility Address from 3212 Dover Rd:

Ascension Saint Thomas Urgent Care Clarksville
1690 Fort Campbell Blvd
Clarksville, TN 37042
(931) 648-4838

Map and turn by turn directions are as follows:

- Start at 3212 Dover Rd
- Turn **left** onto US-79 N (4.9 miles)
- Take the TN-374 S **exit** (0.6 miles)
- Continue onto TN-374 S (3.8 miles)
- Use the **right** lane to take the US41A/Ft Cambell Blvd Ramp (0.3 miles)
- Use the **right** lane to turn **right** onto Fort Campbell Blvd (413 feet)
- Turn **right** to arrive at 1690 Fort Campbell Blvd

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Map and directions from the Bi-County Solid Waste Landfill to Ascension Saint Thomas Urgent Care, Fort Campbell



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ACCIDENT OR INCIDENT REPORTING SYSTEM

In the event of an emergency at the work site, project personnel should call 911 for emergency assistance. After the immediate emergency situation has been addressed by emergency personnel, The SCS Field Manager should call the SCS Project Director as well as the Client Services Manager and inform them of the situation. The SCS Project Manager or Director should evaluate the nature of the emergency and direct project personnel actions from that point.

METHODS TO SUMMON EMERGENCY RESPONSE TEAM

Emergency services can be summoned through 911, as this service is active in the area.

RESCUE AND MEDICAL TREATMENT REQUIREMENTS

SCS field staff will exercise their stop work authority when an injury or accident occurs. The appropriate emergency agency will be contacted and first aid administered, if possible. For SCS staff injuries and health issues that are not life-threatening and do not require emergency response, WorkCare will be contacted at (888) 449-7787. A first aid kit is available at the sorting site and in SCS owned vehicles (if onsite).

3 SITE DESCRIPTION

LOCATION DESCRIPTION

Field activities for this project will take place at:

Bi-County Solid Waste Balefill/Landfill
3212 Dover Rd
Woodlawn, TN 37191

4 GENERAL FIELD SAFETY PROCEDURES

General Standard Operating Procedures (SOPs) and additional SCS Health and Safety procedures and requirements are included in the current SCS Injury Illness Protection Program (IIPP) and on the SCS intranet. These documents are considered a part of this plan.

SCS team members will conduct themselves in a professional manner at all times. The following restrictions will also be observed by all SCS field staff and subcontractors.

- Working under the influence of intoxicants, narcotics, or controlled substances is prohibited.
- Smoking is only allowed in designated areas.
- Loose clothing will not be worn on-site; No unapproved work clothes or equipment will be allowed on-site; long hair will be worn up inside (hard) hat.
- Eating, drinking, chewing gum, smoking, or any practice that increases the probability of hand-to-mouth transfer and ingestion of material is prohibited from the immediate material sampling and sorting locations; designated break areas will be established.
- No personnel will be admitted to the site without the proper safety equipment, clearance or other approval.
- All personnel must comply with established safety procedures. Any staff member who does not comply with safety policy, as established by the SCS Field Manager, will be immediately dismissed from the site.
- Prescription drugs should not be taken by personnel where the potential for contact with toxic substances exist. Use must be specifically approved by a qualified physician.
- No weapons or firearms are allowed onsite.
- Work areas for sampling and sorting activities will be established.
- Work areas will be established based on prevailing site conditions and are subject to change. Personnel should check with the SCS Field Manager for current and appropriate procedures regularly.
- Contact with contaminated or potentially contaminated material should be avoided. Whenever possible, do not walk through puddles, mud, or any discolored ground surface. Do not kneel

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on the ground. Do not lean, sit or place equipment on drums, containers, or vehicles.

- Due caution will be observed when proceeding on foot through open areas. Personnel will not cross the established barrier that will separate the sorting area from the area where heavy equipment will be operating.

- Any medical emergency supersedes routine safety requirements.

- Staff shall know their own capabilities and not lift any material, container, etc. that is heavy or awkwardly shaped without assistance from at least one other person.

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APPLICABLE STANDARD OPERATING PROCEDURES (SOPS) AND PROGRAMS

The following SOPs are incorporated by reference and available on the SCS intranet.

	SOP Number and Name		SOP Number and Name
X	01 - General Code of Safe Work Practices		22 - Safe Procedures for Working with Sites That Contain Hydrogen Sulfide
X	04 - JTSA and PPE Assessment Procedures	X	24 - Avoidance of Slips, Trips, and Falls
	05 - Work Permits	X	25 - Avoidance and Prevention of Heat and Cold Stress, and Other Weather-Related Hazards
	06 - Forklift and Heavy Machinery Operations		26 - All-Terrain Vehicles and Watercraft
	07 - Compressed Air and Compressed Gas Cylinders		27 - OSHA and Other Regulatory Inspections
	08 - Drilling and Well Installation Procedures		
	09 - Electrical Safety		**Appendix Letter and Program Name**
	10 - Fall Protection	X	B - Hazard Communication
X	11 - Fire Extinguishers		C - HAZWOPER
	12 - Hand and Power Tools		D - Exposure Assessment
	13 - Working Safely with Ladders	X	E - PPE Other Than Respiratory Protection
	14 - Landfill Leachate and Condensate Safe Procedures		F - Respiratory Protection
	15 - Lockout and Tagout	X	G - Motor Vehicle and Fleet Safety
X	17 - Materials Use and Handling		H - Hearing Conservation
	18 - Polyethylene (PE) Pipe Work Safe Procedures	X	I - Bloodborne Pathogens
X	19 - Site Sanitation Procedures		J - Excavation and Construction Earthwork Program
	20 - Safe Work Practices for Scaffolds		K - Confined Space Entry
X	21 - Safe Procedures for Biological Hazards (Snakes, Insects, Vegetation, Bacteria)	X	L - Ergonomics Program

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JOB TASK SAFETY ANALYSIS (JTSA) AND PPE ASSESSMENT

JTSAs for activities performed at the work site have been completed as indicated below and are included as **Attachment 1**. A completed JTSA is required for all work tasks performed at the site. JTSAs are designed to identify steps that involve potential hazards to employees and should be reviewed and understood (and signed providing evidence of understanding) before performing any task at the site. If additional steps or hazards are present, the JTSA should be revised (and the revision signed by all affected staff) to indicate that all items have been appropriately addressed and are understood before proceeding with the task.

Unless identified in an attached Job Task Safety Analysis (JTSA) form, all project tasks are anticipated to only require **Level D** PPE, as defined by the Occupational Safety and Health Administration (OSHA).

SCS field personnel (including subcontractors) will be informed in the use of safety equipment and will be required to wear PPE appropriate for the tasks in which they will be involved, including:

- Gloves (nitrile and HexArmor needlestick and puncture resistant gloves)
- High Visibility Safety Vests
- Eye Protection
- Steel-toe boots/shoes
- Hard hats, if required by the site

Extra PPE will be located on-site. The following additional PPE will be provided, but not required to be worn:

- Dust Masks
- Coveralls

Sufficient water for personal use will be brought on-site daily.

INSPECTION PROCEDURES

Periodic site inspections may be made by the SCS Project Director and/or Client Services Manager. There is also the potential for the client or a regulatory agency to visit and observe the work area. SCS personnel are to perform tasks in compliance with all contractual, regulatory, and company requirements at all times.

SITE CONTROL

SCS and its subcontractors will be restricted in site usage to the designated sampling and sorting areas. SCS will rely on client or host facility personnel to transfer material samples from the sampling area to the sorting area.

Our clients are responsible for providing SCS employees with safe site access and work area. This includes work areas that are free of threats from transients or other aggressive people or animals. If an SCS team member encounters an aggressive person or animal, they will withdraw from the site and contact the Client Representative, SCS Project Director and SCS Client Services Manager. The client is responsible for removing the threats. SCS employees will not take affirmative action of their own.

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DECONTAMINATION PROCEDURES

The risks of illness due to ingestion of diseased or decomposing materials from the work site are significant. To minimize these risks, all personnel should remove and store the outer layer of their protective clothing (i.e., coveralls, gloves, etc.) on-site. Hands, face, and nails should be thoroughly washed, or scrubbed, with soap and water prior to engaging in activity likely to transmit materials encountered on-site into the mouth. If waste materials come in contact with the skin, that crew member will be temporarily excused to thoroughly wash the affected area with soap and water.

HANDLING OF HAZARDOUS WASTE MATERIALS

Hazardous materials will be avoided during sample selection. If hazardous materials are encountered during waste sorting activities it will be reported to the SCS Field Manager immediately. The materials will be separated from the MSW and recyclable material streams and put in a separate container. The hazardous materials will be reported to the Client Representative and that individual will be responsible for disposing of the materials.

Caution will be taken when handling mercury-containing wastes such as fluorescent light bulbs. Care will be taken to not break the glass bulb, and to avoid samples with excess amounts of fluorescent light bulbs.

HOUSEKEEPING REQUIREMENTS

SCS expects clients to provide access to a washroom/restroom with toilets, running water, and soap to facilitate decontamination. Hand sanitizer will also be made available in the designated break area. SCS field staff and subcontractors will keep our work area clutter-free and organized throughout the field activities to facilitate a safe working environment. Equipment and supplies will not be left on the ground/floor.

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5 SITE HAZARDS

Chemical and Physical Agent Hazards

The following chemical and physical hazards should be considered before performing work at the Public Works Yard. The analysis will depend on a thorough understanding of the site's physical characteristics and the task(s) being performed.

Toxic Compounds: Non-Methane Organic Compounds (NMOCs), as well as inorganic toxic contaminants such as mercury, and sometimes even radioactive contaminants such as tritium, may be present. NMOCs include such toxic compounds as benzene, toluene, chloroform, vinyl chloride, carbon tetrachloride, and trichloroethane, which are commonly less than one percent by weight. These potential hazards should be evaluated on a case-by-case basis.

Poisons: Pesticides, cleaners, or other toxic materials of various types may be present in the waste stream. Avoid contact with these items. Pay close attention to where you walk and what you touch such that materials do not accidentally come into contact with skin, eyes, mouth, or clothing. Immediately remove any contaminated clothing, and wash with soapy water any skin that becomes contaminated.

Flammables: Fuel such as gasoline and diesel may be present in the waste stream. Additionally, paint thinners or other flammable materials may be present in the waste. The primary risk associated with these materials is fire. Keep all ignition sources away from flammable materials. Do not smoke, unless in designated areas. Pay close attention to where you walk and what you touch such that materials do not accidentally come into contact with skin, eyes, mouth, or clothing. Immediately remove contaminated clothing, and wash with soapy water any skin that becomes contaminated.

Oxidizers: Fertilizers, pool chemicals, chlorine, or other oxidizers may be present in the waste stream. The primary risk from oxidizers is an increased fire potential. Keep fire and fuel or oil away from oxidizers. Do not smoke, unless in designated areas. Pay close attention to where you walk and what you touch such that materials do not accidentally come into contact with skin, eyes, mouth, or clothing. Immediately remove contaminated clothing, and wash with soapy water skin that becomes contaminated.

Corrosives: Acidic and caustic materials may be present in the waste stream. The primary risk from corrosives is damage to the skin or eyes. Pay close attention to where you walk and what you touch such that materials do not accidentally come into contact with skin, eyes, mouth, or clothing. Immediately remove contaminated clothing, and wash with soapy water skin that becomes contaminated.

Physical Hazards

Physical hazards are inherently present during project field activities. Common physical hazards include mechanical hazards; noise exposure associated with mechanical equipment use; slip-trip-fall hazards associated with the field environment; hazards associated with weather conditions; musculoskeletal injury resulting from lifting tasks; and biological hazards. The physical hazards anticipated at the work site and the methods for preventing injury due to these hazards are

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described below. The following physical hazards should be considered before performing any task or work. Depending on the task(s) performed, any or all of these hazards may be present.

- **Slip-Trip-Fall Hazards and General Housekeeping:** Slip-trip-fall hazards are common at most solid waste facilities due to wet, muddy, slippery or unstable surfaces and/or equipment on the ground. While it is difficult to eliminate all slip-trip-fall hazards, implementing safe work practices, utilizing proper footwear, and keeping the work area free from obstructions will minimize risk of injury. All tools, materials and supplies will have designated storage areas so that they do not become tripping hazards.

- **Noise:** Noise hazards may exist from equipment and collection vehicles. Noise levels identified as exceeding 85 decibels (i.e., whenever you have to raise your voice above normal conversational speech to be heard) will be reduced by means of hearing protection.

- **Lifting Hazards:** Field operations often require the performance of physical tasks, including lifting heavy items. All employees must implement proper lifting procedures, such as keeping the load close to the body and using leg muscles instead of back muscles to perform lifting tasks. Additionally, employees shall not attempt to lift large, heavy or awkwardly shaped objects without assistance.

- **Lightning and Other Severe Weather Events:** The danger of lightning strike is increased when work occurs on the elevated surface. Lightning can strike miles ahead of a storm when no rain is present. All operations should be stopped immediately when lightning is visible or thunder is audible. All personnel should seek shelter off the elevated surfaces and remain inside a building (primary) or vehicle (secondary) until the danger passes. Do not take shelter near tall objects such as power lines, trees, antennas, or the flare stack. Work can resume when the lightning is no longer visible and the thunder cannot be heard.

- **Heavy Equipment:** Compactors, bull dozers, loaders, track hoes, forklifts and large trucks, and other vehicles are present at the work site. Loud noise and limited visibility can increase the threat of being run over or crushed by these vehicles. Wear high-visibility vests (recommend Class III) and coordinate with vehicle operators when working in the vicinity of this equipment. Heavy equipment hazards are especially present at the designated waste sampling area(s). When working in these areas, equipment operators must be notified. .

- **Heat-Related Injuries:** Elevated body temperatures can cause serious injury or death. Working outdoors or in the sun increases the chance of heat-related injuries. This hazard is especially critical when PPE (such as coveralls or rain gear) is worn, since heat from the body becomes trapped inside clothing. Personnel should drink plenty of liquids and take breaks as needed. The following describes the various effects of heat-related injuries.

- **Heat Disorders and Health Effects:**

    - **Heat Stroke:** This disorder occurs when the body's system of temperature regulation (e.g., sweating and evaporation) fails and body temperature rises to critical levels. The condition is caused by a combination of highly variable factors, and its occurrence is difficult to predict. Heat stroke is a serious hazard, however. Primary signs and symptoms are confusion, irrational behavior, loss of consciousness, convulsions, a lack of sweating (usually), hot, dry skin, and an abnormally high body temperature. If a worker shows signs of possible heat stroke, call 911 to obtain immediate medical assistance. The worker should be placed in a shady area, and

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his or her outer clothing should be removed. The worker's skin should also be wetted and air movement around the body increased to improve evaporative cooling until professional methods of cooling are initiated and the seriousness of the condition can be assessed. Fluids should be replaced as soon as possible--by mouth only if the worker is conscious. The medical outcome of an episode of heat stroke depends on the victim's physical fitness and the timing and effectiveness of first aid treatment. Regardless of the worker's protests, no employee suspected of being ill from heat stroke should be sent home or left unattended unless a physician has specifically approved such an order.

- **Heat Exhaustion:** The signs and symptoms of heat exhaustion include clammy skin, headache, nausea, vertigo, weakness, thirst, and giddiness. Fortunately, heat exhaustion responds readily to prompt treatment. This condition, however, should not be dismissed lightly, for several reasons. One is that fainting associated with heat exhaustion can be dangerous because the victim may be operating machinery or controlling an operation that should not be left unattended. The victim could also be injured when he or she faints. While the signs and symptoms associated with heat exhaustion are similar to those of heat stroke, the notable difference (with heat exhaustion) is clammy skin. Workers suffering from heat exhaustion should be removed from hot environments and given fluid replacement, by mouth only if the workers are conscious. They should also be encouraged to get adequate rest.

- **Heat Rashes:** The most common problem occurring in hot work environments is heat rash. Prickly heat is manifested as red papules and usually appears in areas where the clothing is restrictive. As sweating increases, the papules give rise to a prickling sensation. Prickly heat occurs in skin that is persistently wetted by unevaporated sweat, and papules may become infected if they are not treated. In most cases, heat rash will disappear when the affected individual returns to a cool environment.

- **Heat Fatigue:** One factor that predisposes individuals to heat fatigue is the lack of acclimatization. Use of a program of acclimatization and training for work in hot environments are advisable. The signs and symptoms of heat fatigue include impaired performance of skilled sensorimotor, high-concentration, or high-vigilance activities. The sole treatment available for heat fatigue is to remove heat stress and increase fluid replacement before a more serious heat-related condition develops.

Dust Hazards: High winds can result in airborne hazards. Be aware of dust hazards; if activities create dust or it is windy and metal contaminants are suspected, avoid breathing dust/particulates and avoid getting dirt on body/clothes. Stand upwind, use dust control in work area, and/or use dust cartridges on respirators as conditions warrant to avoid exposure. If dust is generated during operations, report to SCS Engineers Project Manager.

Biological Hazards

Rodents, poisonous insects, snakes, other animals and/or plants are a natural part of any ecosystem. They are sometimes difficult to eliminate or avoid on some sites because of the location. Employees should be aware of the potential for encountering these types of animals and plants. Where possible, nesting places should be removed or access to them should be limited. If several infestations occur, remedies should be discussed with a supervisor and the client (see **SCS IIPP, SOP-**

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21, for precautions and treatment for biological hazards). The following could be encountered in carrying out this project's activities:

- **Rabid Animals:** Some mammals may carry rabies, and rabid animals tend to approach people instead of avoiding them. Beware of nocturnal (night dwelling) animals (such as raccoons or opossums) active during the day.

- **Dogs:** Realize that dogs encountered in the wild tend not to be "man's best friend," even if they look like "Lassie." Two or more dogs together constitute a pack (with a tendency toward fierce behavior), and can pose significant threat. Roaming animals, particularly large dogs that instinctively hunt by sight (such as collies or shepherds), are cause for concern. Some breeds (cocker spaniels and English Springer spaniels) are notorious for erratic fits of violent behavior. Other dogs are bred as guard dogs or fighting dogs (Dobermans, Rottweilers, Boxers, and Bulldogs). Dogs that are unconfined are more likely to contract rabies. Beware of dogs that foam at the mouth or show their teeth. Upon encountering such a dog, do not make any sudden moves. Do not make direct eye contact with the dog. Back slowly away from the animal, and never turn your back on unknown dogs.

- **Hantavirus:** Infection typically occurs by the inhalation of tiny airborne droplets of fresh or dried rodent excretions. Transmission to humans may also occur through direct contact with rodents or rodent-contaminated materials, and ingestion of contaminated food or water is also a possible route of transmission. Sweeping or "shaking out" rodent-contaminated materials should be avoided unless performed using respiratory protection. The early symptoms of hantavirus disease are flu-like (fever, chills, muscle aches). For a very short period of time, the infected person starts to feel better. Then, within 1 to 2 days, he or she may develop shortness of breath. The disease gets worse quickly and leads to respiratory failure, a condition known as Hantavirus Pulmonary Syndrome (HPS). About half of all HPS patients experience these symptoms, which usually occur 1 to 5 weeks from contracting the illness.

- **Snakes:** The potential exists to encounter snakes. The Copperhead and Timber Rattlesnake are potentially the most dangerous. Not all rattlesnakes give audible warning before they strike. Extra caution should be taken if tools or other materials are dropped in highly vegetated areas, around rocks, into stockpiles of pipe or other objects, or when walking through highly vegetated areas where visibility (of the ground) is limited. The most active times for rattlesnakes are morning, late afternoon, and early evening; however, encounters could happen at any time of the day. Walking loudly, shuffling feet, or making noise while working is recommended.

- **Bloodborne Pathogens:** Human blood can contain harmful viruses such as the Human Immunodeficiency Virus (HIV) and Hepatitis B Virus (HBV). Contact with affected blood, as well as materials contaminated by this blood, can result in transmitting viruses and the life-threatening conditions they cause.

SCS has adopted a Bloodborne Pathogen Exposure Control Plan to protect employees who may come into contact with blood, or materials contaminated with blood, during the performance of tasks. Although the program is intended to comply with OSHA's Bloodborne Pathogens Standard, 29 CFR 1910.1030, the primary purpose for adopting the plan is to help employees avoid bloodborne pathogens at work.

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When an employee is involved in an exposure incident, it must be reported in accordance with the Health and Safety Injury and Illness Prevention Plan. All employees involved in an exposure incident will be offered post-exposure evaluation and follow-up, in accordance with the OSHA standard. Follow-up will include:

- Documentation of the route of exposure and the circumstances related to the incident.
- If possible, identification of the source individual and, if possible, the status of the source individual. The blood of the source individual will be tested (after consent is obtained) for HIV/HBV infectivity.
- Results of testing of the source individual will be made available to the exposed employee, along with applicable laws and regulations concerning disclosure of the identity and infectivity of the source individual.
- The employee will be offered the option of having blood collected for testing of that employee's HIV/HBV serological status. The blood sample will be preserved for at least 90 days to allow the employee to decide if the blood should be tested for HIV serological status. However, if the employee decides, prior to that time, that testing will be conducted, the appropriate action can be taken and the blood sample discarded.
- The employee will be offered post-exposure counseling in accordance with current recommendations of the U.S. Public Health Service.
- The employee will be given appropriate counseling concerning precautions to take during the period after the exposure incident. The employee will also be given information regarding potential illnesses and procedures for reporting related symptoms to appropriate personnel.

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Attachment 1 – Job Task Safety Analysis and PPE Assessment Form

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JTSA 16 – Waste Sort

Job Task Safety Analysis and PPE Assessment Form: JTSA-ES-16-WASTE SORT

Task Type (Check all that apply) ☐ **FS-OM&M/Construction** ☐ **Construction** ☐ **Energy** ☒ **Engineering**	**Task Description (include estimate of task duration in hours/day):** 5 Day waste sort; on-site for approximately 9 hours per day.	**Location or Project:** TDEC Statewide Waste Characterization Study **Date: November 17-21, 2025** **Project/Revision #:** 02224033.00	
Analysis Team Member	**Position Title**	**Acknowledged by**	**Position Title**
Brent Dieleman	Project/Field Manager		
Special Training/Certification Required (In Addition to IIPP and Site Specific Health & Safety Plan)	Bloodborne pathogens training		

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Applicable SAFE Checklist(s): Specify type and category number	Safe Observation Form/Vehicle Inspection Form/Employee Suggestion

This form is certification that the hazard assessment has been performed for the workplace as required under 29 CFR 1910.132. This document is to be used as guidance for the task described and should be modified on an as necessary basis to address site, operational and/or environmental changes.

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Job Task Safety Analysis and PPE Assessment Form: JTSA-ES-16-WASTE SORT

Job Task Step	Potential Environmental and Personnel Hazards[1]	Critical Actions	PPE Required
1. Drive to site, set up sorting table and containers.	Heavy lifting Slips/trips/falls Vehicle traffic	• Check in w/facility • Ensure work area is secured/isolated • Use buddy system • Employ safe lifting behaviors • Stretch/warm-up	Head: None Body: High-vis vest Foot: Steel--toe ANSI boots Hand: Nitrile/leather outer glove Respiratory: None Hearing: None Eye/Face: Safety glasses
2. Collect solid waste samples	Heavy lifting Vehicle/equipment traffic Slips/trips/falls Medical/bio waste Sharps Chemical exposures	• Stay visible • Use safe lifting • Set up away from traffic • Give directions to equipment operator • Avoid vehicle/equipment traffic	Head: Hardhat, if required by site Body: Safety vest Foot: Steel--toe ANSI boots Hand: Nitrile/puncture resistant gloves Respiratory: None Hearing: None Eye/Face: Safety glasses
3. Hand-sort solid waste materials on the sorting table	Heavy lifting Slips/trips/falls Medical/bio waste Sharps Chemical exposures Stress/hygiene concerns	• Use buddy system • Stay visible • Use safe lifting • Set up away from traffic • Brush trash (vs digging) • Wash hands freq. • Stay hydrated • Take breaks	Head: Hardhat, if required by site Body: Safety vest, Tyvek Foot: Steel--toe ANSI boots Hand: Nitrile/puncture resistant gloves Respiratory: Dust mask (optional) Hearing: None Eye/Face: Safety glasses
4. Cleanup and Decontaminate	Heavy lifting Slips/trips/falls Vehicle traffic	• Ensure work area is secured/isolated • Use buddy system • Employ safe lifting behaviors • Stretch/warm-up • Decontaminate PPE	Head: Hardhat, if required by site Body: Safety vest Foot: Steel--toe ANSI boots Hand: Nitrile/leather outer glove Respiratory: Dust mask (optional) Hearing: None Eye/Face: Safety glasses
5. Demobilization	Vehicle/HE traffic	• Check out w/facility	Head: None Body: High Visibility Vest Foot: Steel--toe ANSI boots Hand: None Respiratory: None Hearing: None Eye/Face: None
End of JTSA Form			

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Appendix B

Detailed Residential Composition by Tennessee Grand Division

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Residential MSW Composition Detailed – **West Tennessee**

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	Upper
PAPER				
Sorted Office Paper	2.0%	1.6%	1.6%	2.3%
Newspaper and Magazines	1.2%	1.1%	0.9%	1.4%
Mixed Paper	1.6%	0.9%	1.4%	1.8%
Compostable Paper	6.2%	2.2%	5.8%	6.7%
Old Corrugated Cardboard	4.7%	2.5%	4.2%	5.3%
Paperboard	5.7%	1.7%	5.3%	6.0%
Other Paper (non-recyclable)	2.0%	1.6%	1.7%	2.4%
Total Paper	**23.4%**			
RIGID PLASTIC				
PET #1	3.3%	1.0%	3.1%	3.5%
HDPE #2	1.4%	0.6%	1.2%	1.5%
PVC #3	<0.1%	0.1%	<0.1%	<0.1%
LDPE #4	<0.1%	<0.1%	<0.1%	<0.1%
PP #5	1.2%	0.4%	1.1%	1.3%
PS #6	1.4%	0.6%	1.3%	1.6%
Durable Plastics	1.9%	1.6%	1.6%	2.3%
#7 and Other Rigid Plastics	1.0%	0.5%	0.8%	1.1%
Total Rigid Plastic	**10.2%**			
FILM PLASTIC				
Garbage Bags	3.1%	1.0%	2.8%	3.3%
Retail Bags	1.8%	0.5%	1.6%	1.9%
Other Film Plastics	3.7%	1.1%	3.4%	3.9%
Total Film Plastic	**8.5%**			
ORGANICS				
Wasted Food (Edible)	13.4%	6.4%	12.0%	14.7%
Wasted Food (Inedible)	3.2%	1.7%	2.9%	3.6%
Yard Waste	3.9%	8.2%	2.1%	5.6%
Wood (Non-C&D)	0.2%	0.5%	0.1%	0.3%
Textiles and Shoes	5.6%	3.8%	4.8%	6.4%
Other Organics	3.9%	5.4%	2.7%	5.0%
Total Organics	**30.2%**			

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Residential MSW Composition Detailed – **West Tennessee (continued)**

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	Upper
METALS				
Steel and Tin Cans	1.4%	0.7%	1.2%	1.5%
Aluminum Cans	1.6%	0.6%	1.4%	1.7%
Aerosol Cans	0.3%	0.3%	0.2%	0.3%
Other Ferrous Metal	1.1%	1.4%	0.8%	1.4%
Other Non-Ferrous Metal	0.9%	1.0%	0.7%	1.1%
Total Metals	**5.3%**			
GLASS				
Clear Glass	2.0%	1.3%	1.7%	2.3%
Green Glass	0.3%	0.5%	0.2%	0.4%
Amber Glass	0.5%	0.7%	0.4%	0.7%
Blue Glass	<0.1%	0.4%	<0.1%	0.1%
Other Glass	0.3%	1.0%	<0.1%	0.5%
Total Glass	**3.1%**			
C&D MATERIAL				
Drywall	0.3%	2.3%	<0.1%	0.8%
Wood	0.7%	1.6%	0.3%	1.1%
Carpet	0.3%	0.9%	<0.1%	0.4%
Other C&D Waste	1.2%	4.6%	0.2%	2.1%
Total C&D Material	**2.4%**			
HOUSEHOLD HAZARDOUS WASTE				
Batteries	<0.1%	0.1%	<0.1%	0.1%
Oil	<0.1%	0.1%	<0.1%	<0.1%
Paint	<0.1%	0.3%	<0.1%	0.1%
Anit-freeze	<0.1%	<0.1%	<0.1%	<0.1%
Other HHW	0.2%	0.4%	0.1%	0.3%
Total HHW	**0.3%**			
ELECTRONICS				
Electronics	0.8%	1.2%	0.5%	1.0%
Total Electronics	**0.8%**			
OTHER				
Tires	<0.1%	<0.1%	<0.1%	<0.1%
Other	10.0%	8.3%	8.3%	11.8%
Fines	5.7%	3.1%	5.0%	6.4%
Total Other	**15.7%**			
TOTALS	**100.0%**			

Note: Composition based on 83 samples.

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Residential MSW Composition Detailed – **Middle Tennessee**

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	Upper
PAPER				
Sorted Office Paper	2.5%	2.2%	1.9%	3.0%
Newspaper and Magazines	1.1%	0.9%	0.9%	1.3%
Mixed Paper	2.1%	1.3%	1.8%	2.4%
Compostable Paper	7.1%	2.8%	6.4%	7.8%
Old Corrugated Cardboard	4.7%	3.3%	3.9%	5.6%
Paperboard	4.9%	1.6%	4.5%	5.3%
Other Paper (non-recyclable)	1.9%	1.3%	1.6%	2.2%
Total Paper	**24.2%**			
RIGID PLASTIC				
PET #1	3.3%	1.0%	3.0%	3.5%
HDPE #2	1.2%	0.6%	1.1%	1.4%
PVC #3	<0.1%	<0.1%	<0.1%	<0.1%
LDPE #4	<0.1%	<0.1%	<0.1%	<0.1%
PP #5	1.7%	1.0%	1.5%	2.0%
PS #6	1.4%	0.6%	1.3%	1.6%
Durable Plastics	2.2%	2.1%	1.7%	2.8%
#7 and Other Rigid Plastics	0.9%	0.4%	0.8%	1.0%
Total Rigid Plastic	**10.8%**			
FILM PLASTIC				
Garbage Bags	2.9%	1.0%	2.7%	3.2%
Retail Bags	1.6%	0.6%	1.5%	1.8%
Other Film Plastics	4.4%	1.4%	4.1%	4.8%
Total Film Plastic	**9.0%**			
ORGANICS				
Wasted Food (Edible)	14.9%	6.9%	13.2%	16.7%
Wasted Food (Inedible)	3.5%	1.8%	3.0%	4.0%
Yard Waste	3.6%	5.5%	2.1%	5.0%
Wood (Non-C&D)	0.3%	1.0%	<0.1%	0.6%
Textiles and Shoes	5.2%	4.0%	4.2%	6.2%
Other Organics	4.7%	6.2%	3.1%	6.2%
Total Organics	**32.2%**			

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Residential MSW Composition Detailed – **Middle Tennessee (continued)**

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
METALS				
Steel and Tin Cans	1.2%	0.6%	1.1%	1.4%
Aluminum Cans	1.5%	0.6%	1.3%	1.6%
Aerosol Cans	0.2%	0.2%	0.1%	0.2%
Other Ferrous Metal	1.3%	2.7%	0.6%	2.0%
Other Non-Ferrous Metal	0.7%	0.8%	0.5%	0.9%
Total Metals	**4.9%**			
GLASS				
Clear Glass	2.0%	1.5%	1.7%	2.4%
Green Glass	0.4%	0.6%	0.2%	0.5%
Amber Glass	0.4%	0.5%	0.3%	0.6%
Blue Glass	<0.1%	0.2%	<0.1%	<0.1%
Other Glass	0.3%	0.6%	0.1%	0.4%
Total Glass	**3.2%**			
C&D MATERIAL				
Drywall	0.2%	1.7%	<0.1%	0.7%
Wood	0.6%	0.9%	0.3%	0.8%
Carpet	0.9%	2.7%	0.2%	1.6%
Other C&D Waste	0.2%	0.8%	<0.1%	0.4%
Total C&D Material	**2.0%**			
HOUSEHOLD HAZARDOUS WASTE				
Batteries	0.3%	1.8%	<0.1%	0.8%
Oil	<0.1%	<0.1%	<0.1%	<0.1%
Paint	<0.1%	<0.1%	<0.1%	<0.1%
Anit-freeze	<0.1%	0.1%	<0.1%	<0.1%
Other HHW	0.2%	0.7%	<0.1%	0.4%
Total HHW	**0.6%**			
ELECTRONICS				
Electronics	1.1%	3.2%	0.3%	2.0%
Total Electronics	**1.1%**			
OTHER				
Tires	<0.1%	0.2%	<0.1%	<0.1%
Other	6.8%	4.3%	5.7%	7.9%
Fines	5.2%	5.7%	3.7%	6.6%
Total Other	**12.0%**			
TOTALS	**100.0%**			

Note: Composition based on 59 samples.

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Residential MSW Composition Detailed – **East Tennessee**

Material Components	Mean Composition	Standard Deviation	95% Confidence Limi Lower	Upper
PAPER				
Sorted Office Paper	2.6%	1.8%	2.2%	3.0%
Newspaper and Magazines	0.8%	0.9%	0.5%	1.0%
Mixed Paper	2.6%	1.4%	2.2%	2.9%
Compostable Paper	6.6%	1.8%	6.2%	7.0%
Old Corrugated Cardboard	4.2%	2.1%	3.7%	4.7%
Paperboard	5.3%	1.6%	4.9%	5.6%
Other Paper (non-recyclable)	2.3%	1.0%	2.1%	2.6%
Total Paper	**24.4%**			
RIGID PLASTIC				
PET #1	3.6%	1.0%	3.4%	3.9%
HDPE #2	1.3%	0.5%	1.2%	1.4%
PVC #3	<0.1%	<0.1%	<0.1%	<0.1%
LDPE #4	<0.1%	<0.1%	<0.1%	<0.1%
PP #5	1.7%	0.5%	1.6%	1.8%
PS #6	1.2%	0.4%	1.1%	1.3%
Durable Plastics	1.5%	1.7%	1.1%	1.9%
#7 and Other Rigid Plastics	1.3%	0.5%	1.2%	1.4%
Total Rigid Plastic	**10.7%**			
FILM PLASTIC				
Garbage Bags	2.5%	0.7%	2.4%	2.7%
Retail Bags	1.4%	0.6%	1.3%	1.5%
Other Film Plastics	3.8%	0.8%	3.6%	4.0%
Total Film Plastic	**7.8%**			
ORGANICS				
Wasted Food (Edible)	15.5%	5.2%	14.4%	16.7%
Wasted Food (Inedible)	6.7%	2.9%	6.1%	7.4%
Yard Waste	0.8%	1.7%	0.4%	1.2%
Wood (Non-C&D)	0.2%	0.7%	<0.1%	0.4%
Textiles and Shoes	4.1%	3.1%	3.4%	4.8%
Other Organics	3.6%	4.6%	2.6%	4.7%
Total Organics	**31.0%**			

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Residential MSW Composition Detailed – **East Tennessee (continued)**

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	Upper
METALS				
Steel and Tin Cans	1.7%	0.8%	1.5%	1.9%
Aluminum Cans	1.6%	0.7%	1.5%	1.8%
Aerosol Cans	0.3%	0.2%	0.2%	0.3%
Other Ferrous Metal	0.9%	1.2%	0.6%	1.2%
Other Non-Ferrous Metal	0.8%	1.2%	0.5%	1.1%
Total Metals	**5.3%**			
GLASS				
Clear Glass	2.6%	1.7%	2.3%	3.0%
Green Glass	0.8%	1.0%	0.6%	1.1%
Amber Glass	0.7%	0.7%	0.5%	0.8%
Blue Glass	<0.1%	0.1%	<0.1%	<0.1%
Other Glass	0.3%	0.9%	0.1%	0.5%
Total Glass	**4.5%**			
C&D MATERIAL				
Drywall	<0.1%	0.4%	<0.1%	0.2%
Wood	0.6%	1.1%	0.3%	0.8%
Carpet	0.3%	1.0%	<0.1%	0.5%
Other C&D Waste	0.3%	0.7%	0.2%	0.5%
Total C&D Material	**1.2%**			
HOUSEHOLD HAZARDOUS WASTE				
Batteries	<0.1%	0.2%	<0.1%	0.1%
Oil	<0.1%	0.1%	<0.1%	<0.1%
Paint	0.2%	0.8%	<0.1%	0.4%
Anit-freeze	<0.1%	<0.1%	<0.1%	<0.1%
Other HHW	0.3%	1.1%	<0.1%	0.6%
Total HHW	**0.7%**			
ELECTRONICS				
Electronics	1.1%	2.3%	0.6%	1.6%
Total Electronics	**1.1%**			
OTHER				
Tires	<0.1%	0.1%	<0.1%	<0.1%
Other	9.0%	4.8%	7.9%	10.1%
Fines	4.4%	2.7%	3.8%	5.1%
Total Other	**13.4%**			
TOTALS	**100.0%**			

Note: Composition based on 75 samples.

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Appendix C

Detailed Commercial Composition by Tennessee Grand Division

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Commercial MSW Composition Detailed – **West Tennessee**

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	Upper
PAPER				
Sorted Office Paper	1.7%	2.0%	1.2%	2.2%
Newspaper and Magazines	0.7%	1.3%	0.4%	1.0%
Mixed Paper	2.2%	1.8%	1.8%	2.7%
Compostable Paper	6.4%	3.6%	5.5%	7.2%
Old Corrugated Cardboard	12.9%	11.1%	10.2%	15.6%
Paperboard	3.0%	1.9%	2.6%	3.5%
Other Paper (non-recyclable)	1.7%	1.6%	1.3%	2.1%
Total Paper	**28.6%**			
RIGID PLASTIC				
PET #1	1.9%	1.2%	1.6%	2.2%
HDPE #2	0.9%	0.7%	0.8%	1.1%
PVC #3	<0.1%	0.2%	<0.1%	<0.1%
LDPE #4	<0.1%	<0.1%	<0.1%	<0.1%
PP #5	1.3%	1.0%	1.1%	1.6%
PS #6	1.3%	0.9%	1.1%	1.5%
Durable Plastics	1.4%	1.6%	1.0%	1.8%
#7 and Other Rigid Plastics	0.9%	0.6%	0.7%	1.0%
Total Rigid Plastic	**7.9%**			
FILM PLASTIC				
Garbage Bags	4.1%	2.0%	3.6%	4.6%
Retail Bags	0.9%	0.5%	0.8%	1.1%
Other Film Plastics	4.7%	2.6%	4.1%	5.3%
Total Film Plastic	**9.7%**			
ORGANICS				
Wasted Food (Edible)	18.5%	13.2%	15.4%	21.7%
Wasted Food (Inedible)	4.6%	6.2%	3.1%	6.1%
Yard Waste	2.7%	10.0%	0.4%	5.1%
Wood (Non-C&D)	0.5%	1.4%	0.2%	0.8%
Textiles and Shoes	5.7%	16.1%	1.9%	9.6%
Other Organics	1.8%	4.3%	0.8%	2.8%
Total Organics	**33.9%**			

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Commercial MSW Composition Detailed – **West Tennessee (continued)**

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	Upper
METALS				
Steel and Tin Cans	1.1%	1.6%	0.7%	1.4%
Aluminum Cans	0.9%	0.7%	0.7%	1.1%
Aerosol Cans	0.1%	0.2%	<0.1%	0.2%
Other Ferrous Metal	1.9%	4.2%	0.9%	2.9%
Other Non-Ferrous Metal	0.9%	1.3%	0.6%	1.2%
Total Metals	**4.9%**			
GLASS				
Clear Glass	0.8%	0.9%	0.6%	1.0%
Green Glass	<0.1%	0.2%	<0.1%	<0.1%
Amber Glass	0.6%	1.3%	0.3%	0.9%
Blue Glass	<0.1%	<0.1%	<0.1%	<0.1%
Other Glass	0.2%	1.4%	<0.1%	0.6%
Total Glass	**1.7%**			
C&D MATERIAL				
Drywall	<0.1%	0.5%	<0.1%	0.2%
Wood	1.6%	4.3%	0.6%	2.6%
Carpet	0.6%	2.6%	<0.1%	1.2%
Other C&D Waste	0.7%	2.7%	<0.1%	1.3%
Total C&D Material	**3.0%**			
HOUSEHOLD HAZARDOUS WASTE				
Batteries	<0.1%	<0.1%	<0.1%	<0.1%
Oil	<0.1%	0.1%	<0.1%	<0.1%
Paint	<0.1%	0.2%	<0.1%	<0.1%
Anit-freeze	<0.1%	<0.1%	<0.1%	<0.1%
Other HHW	0.2%	0.6%	<0.1%	0.3%
Total HHW	**0.3%**			
ELECTRONICS				
Electronics	0.6%	1.7%	0.1%	1.0%
Total Electronics	**0.6%**			
OTHER				
Tires	0.2%	1.1%	<0.1%	0.4%
Other	5.7%	8.3%	3.7%	7.7%
Fines	3.6%	3.5%	2.7%	4.4%
Total Other	**9.4%**			
TOTALS	**100.0%**			

Note: Composition based on 67 samples.

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Commercial MSW Composition Detailed – **Middle Tennessee**

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	Upper
PAPER				
Sorted Office Paper	0.9%	0.8%	0.7%	1.2%
Newspaper and Magazines	0.5%	0.6%	0.3%	0.6%
Mixed Paper	1.8%	1.3%	1.4%	2.2%
Compostable Paper	6.3%	3.3%	5.3%	7.3%
Old Corrugated Cardboard	11.4%	9.5%	8.5%	14.4%
Paperboard	2.9%	1.4%	2.5%	3.3%
Other Paper (non-recyclable)	1.6%	1.7%	1.1%	2.1%
Total Paper	**25.4%**			
RIGID PLASTIC				
PET #1	2.0%	1.2%	1.7%	2.4%
HDPE #2	0.9%	0.7%	0.7%	1.1%
PVC #3	<0.1%	0.5%	<0.1%	0.3%
LDPE #4	<0.1%	<0.1%	<0.1%	<0.1%
PP #5	1.1%	0.6%	0.9%	1.3%
PS #6	1.3%	1.2%	0.9%	1.6%
Durable Plastics	3.6%	4.7%	2.2%	5.1%
#7 and Other Rigid Plastics	1.0%	0.9%	0.7%	1.3%
Total Rigid Plastic	**10.0%**			
FILM PLASTIC				
Garbage Bags	2.9%	2.0%	2.3%	3.5%
Retail Bags	1.0%	0.6%	0.9%	1.2%
Other Film Plastics	5.6%	3.4%	4.5%	6.6%
Total Film Plastic	**9.5%**			
ORGANICS				
Wasted Food (Edible)	13.9%	7.4%	11.6%	16.1%
Wasted Food (Inedible)	4.7%	4.7%	3.2%	6.1%
Yard Waste	0.8%	2.5%	<0.1%	1.6%
Wood (Non-C&D)	1.0%	3.0%	<0.1%	1.9%
Textiles and Shoes	6.7%	6.2%	4.8%	8.5%
Other Organics	3.7%	11.2%	0.3%	7.1%
Total Organics	**30.8%**			

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Commercial MSW Composition Detailed – **Middle Tennessee (continued)**

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	Upper
METALS				
Steel and Tin Cans	0.8%	0.7%	0.5%	1.0%
Aluminum Cans	0.9%	0.6%	0.7%	1.1%
Aerosol Cans	0.2%	0.4%	<0.1%	0.3%
Other Ferrous Metal	2.0%	3.1%	1.1%	3.0%
Other Non-Ferrous Metal	1.1%	2.0%	0.4%	1.7%
Total Metals	**5.0%**			
GLASS				
Clear Glass	1.9%	2.1%	1.3%	2.6%
Green Glass	0.2%	0.5%	<0.1%	0.4%
Amber Glass	0.4%	0.5%	0.2%	0.5%
Blue Glass	<0.1%	<0.1%	<0.1%	<0.1%
Other Glass	0.4%	1.2%	<0.1%	0.8%
Total Glass	**2.9%**			
C&D MATERIAL				
Drywall	<0.1%	0.1%	<0.1%	<0.1%
Wood	2.2%	4.0%	1.0%	3.5%
Carpet	0.7%	3.1%	<0.1%	1.7%
Other C&D Waste	1.7%	4.1%	0.5%	3.0%
Total C&D Material	**4.7%**			
HOUSEHOLD HAZARDOUS WASTE				
Batteries	<0.1%	<0.1%	<0.1%	<0.1%
Oil	0.3%	1.6%	<0.1%	0.8%
Paint	0.4%	1.9%	<0.1%	1.0%
Anit-freeze	<0.1%	<0.1%	<0.1%	<0.1%
Other HHW	0.2%	0.7%	<0.1%	0.4%
Total HHW	**1.0%**			
ELECTRONICS				
Electronics	0.7%	1.4%	0.3%	1.1%
Total Electronics	**0.7%**			
OTHER				
Tires	2.9%	10.0%	<0.1%	5.9%
Other	4.4%	4.8%	2.9%	5.9%
Fines	2.8%	2.7%	1.9%	3.6%
Total Other	**10.0%**			
TOTALS	**100.0%**			

Note: Composition based on 41 samples.

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Commercial MSW Composition Detailed – **East Tennessee**

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	Upper
PAPER				
Sorted Office Paper	2.1%	2.4%	1.6%	2.7%
Newspaper and Magazines	0.5%	1.2%	0.3%	0.8%
Mixed Paper	3.2%	4.0%	2.2%	4.2%
Compostable Paper	6.0%	3.4%	5.2%	6.8%
Old Corrugated Cardboard	7.7%	5.7%	6.3%	9.1%
Paperboard	3.4%	1.8%	3.0%	3.9%
Other Paper (non-recyclable)	4.1%	10.9%	1.4%	6.7%
Total Paper	**27.1%**			
RIGID PLASTIC				
PET #1	2.7%	1.5%	2.3%	3.0%
HDPE #2	1.3%	1.1%	1.0%	1.6%
PVC #3	<0.1%	0.1%	<0.1%	<0.1%
LDPE #4	<0.1%	0.2%	<0.1%	<0.1%
PP #5	1.5%	0.9%	1.2%	1.7%
PS #6	1.7%	2.0%	1.2%	2.2%
Durable Plastics	1.5%	1.3%	1.1%	1.8%
#7 and Other Rigid Plastics	1.1%	0.9%	0.8%	1.3%
Total Rigid Plastic	**9.7%**			
FILM PLASTIC				
Garbage Bags	4.2%	2.3%	3.6%	4.7%
Retail Bags	1.0%	0.6%	0.8%	1.1%
Other Film Plastics	5.6%	5.6%	4.2%	7.0%
Total Film Plastic	**10.7%**			
ORGANICS				
Wasted Food (Edible)	14.4%	9.1%	12.2%	16.6%
Wasted Food (Inedible)	5.4%	6.4%	3.9%	7.0%
Yard Waste	0.7%	2.3%	0.1%	1.2%
Wood (Non-C&D)	0.1%	0.4%	<0.1%	0.2%
Textiles and Shoes	4.4%	6.2%	2.9%	5.9%
Other Organics	1.5%	3.1%	0.7%	2.2%
Total Organics	**26.5%**			

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Commercial MSW Composition Detailed – **East Tennessee (continued)**

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	Upper
METALS				
Steel and Tin Cans	0.9%	1.0%	0.7%	1.2%
Aluminum Cans	1.1%	0.7%	1.0%	1.3%
Aerosol Cans	0.2%	0.3%	0.1%	0.3%
Other Ferrous Metal	1.4%	3.4%	0.6%	2.3%
Other Non-Ferrous Metal	0.5%	0.7%	0.3%	0.7%
Total Metals	**4.2%**			
GLASS				
Clear Glass	1.5%	1.3%	1.2%	1.8%
Green Glass	0.5%	0.8%	0.3%	0.7%
Amber Glass	0.7%	1.9%	0.2%	1.2%
Blue Glass	<0.1%	<0.1%	<0.1%	<0.1%
Other Glass	0.2%	0.5%	<0.1%	0.4%
Total Glass	**2.9%**			
C&D MATERIAL				
Drywall	1.1%	6.5%	<0.1%	2.6%
Wood	2.1%	4.8%	1.0%	3.3%
Carpet	0.8%	3.4%	<0.1%	1.7%
Other C&D Waste	1.8%	5.2%	0.5%	3.0%
Total C&D Material	**5.8%**			
HOUSEHOLD HAZARDOUS WASTE				
Batteries	<0.1%	<0.1%	<0.1%	<0.1%
Oil	<0.1%	<0.1%	<0.1%	<0.1%
Paint	<0.1%	0.4%	<0.1%	0.2%
Anit-freeze	<0.1%	0.5%	<0.1%	0.2%
Other HHW	1.5%	5.1%	0.2%	2.7%
Total HHW	**1.6%**			
ELECTRONICS				
Electronics	0.7%	1.5%	0.4%	1.1%
Total Electronics	**0.7%**			
OTHER				
Tires	0.3%	1.5%	<0.1%	0.6%
Other	6.3%	5.8%	4.9%	7.7%
Fines	4.1%	2.3%	3.6%	4.7%
Total Other	**10.7%**			
TOTALS	**100.0%**			

Note: Composition based on 65 samples.

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Appendix D

EPA Volume-to-Weight Conversion Factors

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Volume-to-Weight Conversion Factors
U.S. Environmental Protection Agency
Office of Resource Conservation and Recovery
April 2016

EPA's 1997 report, "Measuring Recycling: A Guide for State and Local Governments", was a guide to facilitate standardization of MSW data collection at the local level, which included volume-to-weight conversion factors for comparing recovery efforts between municipalities, regions and states. The factors are also valuable when planners work with the national recovery data presented in EPA's sustainable materials management report series.

This document provides updates to the volume-to-weight conversion factors found in the 1997 report Appendix B.

The goal of this update is to identify more current secondary data measurements of the various products. Of particular interest are products known to have been source reduced through light weighting since the early nineties such as plastic, glass and metal packaging. Some factors included on the original table are excluded from the revised table due to lack of updated data. Primary data collection was not performed.

The original Appendix B table included 12 materials categories; the updated table provides factors for 15 material categories, including the following.

- Appliances
- Automotive
- Carpeting
- Commingled Recyclables
- Electronics
- Food
- Glass
- Metals
- Municipal Solid Waste
- Paper
- Plastic
- Textiles
- Wood
- Yard Trimmings
- Construction & Demolition Debris (C&D)

All of the categories include multiple products and/or density measurements. Four product categories—carpeting, commingled recyclable material, electronics and construction and demolition debris—are new. Previously lead-acid batteries and scrap tires were separate categories but are combined into the single category "Automotive" in the updated table.

Other differences include the removal/addition of products within some of the categories to better reflect the current recycling industry. For example, eliminating "Tab Card" and adding "Mixed Paper" to the paper category reflects the move toward commingled recyclables collection. The addition of "Electronics" reflects the growth in these products since the original table was published.

The updated factors are shown in the table below.

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Standard Volume-to-Weight Conversion Factors

Category	Recyclable Materials	Volume	Estimated Weight (lbs)	Source
Appliances	Major Appliances			
	Dishwasher	1 unit	125	1
	Clothes Dryer	1 unit	125	1
	Stove	1 unit	150	1
	Refrigerator	1 unit	250	1
	Clothes Washer	1 unit	150	1
Automotive	Lead-Acid Battery			
	Auto	one	36	3
	Truck	one	47	3
	Scrap Tire			
	Light Duty Tires (passenger, light truck)	one	22.5	5
	Commercial Tires	one	120	5
	Fluids			
	Used Motor Oil	gallon	7.4	2
	Antifreeze	gallon	8.42	2
	Other Automotive			
	Oil Filters not crushed	drum	175	1
	Oil Filters crushed	drum	700	1
	Oil Filters	gallon	5	1
Carpeting	Carpet			
	Carpet	cubic yard	147	6
	Carpet Padding	cubic yard	62	6
Commingled Recyclable Material	Containers (Plastic bottles, Aluminum cans, Steel cans, Glass bottles) and Paper			
	Commingled Recyclables	cubic yard	262	4
	Containers (Plastic bottles, Aluminum cans, Steel cans, Glass bottles), Corrugated Containers and Paper			
	Campus Recyclables	cubic yard	92	7
	Commingled Recyclables	cubic yard	111	4
	Containers (Plastic bottles, Aluminum cans, Steel cans, Glass bottles) – No paper			
	Campus Recyclables	cubic yard	70	7
	Commingled Recyclables	cubic yard	67	4
	Commercial Recyclables	cubic yard	113	8
	Containers (Cans, Plastic) - No glass			
	Campus Recyclables	cubic yard	32	7
	Containers (Cans, Plastic) and Paper - No glass			
	Residential Recyclables	cubic yard	260	2
	Containers (Food/beverage, Glass) Corrugated Containers and Paper			
	Commercial Recyclables	cubic yard	88	2
	Commercial Recyclables	cubic yard	58	21
	Multifamily Recyclables	cubic yard	96	2
	Multifamily Recyclables	cubic yard	51	21

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Category	Recyclable Materials	Volume	Estimated Weight (lbs)	Source
Commingled Recyclable Material	*Single family Recyclables*	cubic yard	126	2
	Containers (Food/beverage, Glass) Corrugated Containers and Paper- No glass			
	Campus Recyclables	cubic yard	139	2
	Commercial Recyclables	cubic yard	155	2
Electronics	Computer Equipment			
	Desktop	one	27	24
	Laptop	one	9.8	24
	Monitor			
	CRT	one	40	1
	15"	one	30	2
	17"	one	45	2
	21"	one	60	2
	Flat Panel	one	24	1
	Mixed Monitors	one	29.4	24
	Televisions			
	CRT < 19 inch	one	41	1
	CRT ≥ 19 inch	one	73	1
	Flat Panel	one	29	1
	Mixed TVs	one	67.3	24
	Peripheral Devices			
	Printers	one	16.1	24
	Mice	one	0.2	9
	Keyboards	one	2.9	9
	Mobile Devices			
	Cellular Phone	one	0.22	9
	Mixed Electronics			
	Brown Goods	cubic yard	343	6
	Computer-related Electronics	cubic yard	354	6
	Other Small Consumer Electronics	cubic yard	438	6
Food				
	Fats, Oils, Grease	55-gallon	412	2
	Organics - commercial	cubic yard	135	21
	Source Separated Organics - commercial	cubic yard	1,000	15
	Food Waste - restaurants	cubic yard	396	21
	Food Waste	cubic yard	463	4
	Food Waste	cubic foot	22-45	4
	Food waste - university	gallon	3.8	22
	Food Waste	64 gallon toter	150	4
	Food waste	2 cubic yard full towable	2,736	4
Glass	Bottles			
	Loose	cubic yard	380	4

DRAFT 03

Category	Recyclable Materials	Volume	Estimated Weight (lbs)	Source
Metals	Aluminum Cans			
	Uncompacted	cubic yard	46	4
	Uncompacted	case = 24 cans	0.7	11
	Baled	cubic yard	250-500	10
	Steel Cans			
	Whole	cubic yard	50-175	10
	Baled	cubic yard	700-1,000	10
	Steel Cans - Institution			
	Whole	can	0.09	7
	Whole	cubic yard	136	7
Paper	Newsprint			
	Loose	cubic yard	360-800	1
	Baled	cubic yard	750-1,000	10
	Books - paperback, loose	cubic yard	428	23
	Old Corrugated Containers			
	Flattened	cubic yard	106	4
	Baled	cubic yard	700-1,100	10
	Old Corrugated Containers and Chip Board			
	Uncompacted	cubic yard	74.54	4
	Office Paper			
	Computer Paper			
	Loose	cubic yard	375-465	1
	Compacted/Baled	cubic yard	755-925	1
	Mixed			
	Loose	cubic yard	110-380	1
	Loose	cubic yard	323	4
	Compacted	cubic yard	610-755	1
	Shredded	cubic yard	128	4
	Mixed Baled	cubic yard	1,000-1,200	10
	Miscellaneous			
	Cartons (milk and juice) uncrushed	cubic yard	50	7
Plastic	PET			
	PET Bottles - baled	30"x42"x 48"	525-630	12
	PET Thermoform - baled	30"x42"x 48"	525-595	12
	HDPE			
	HDPE Dairy - baled	30"x42"x 48"	525-700	12
	HDPE Mixed - baled	30"x42"x 48"	525-700	12
	Mixed PET and HDPE			
	Loose	cubic yard	32	7
	Mixed Bottles/Containers #1 - #7			
	Loose	cubic yard	40.4	4
	Mixed Bottles/Containers #3 - #7			

DRAFT 03

Category	Recyclable Materials	Volume	Estimated Weight (lbs)	Source
Plastic	*Loose*	cubic yard	25.7	4
	Film			
	LDPE, loose	cubic yard	35	13
	LDPE, compacted	cubic yard	150	13
	LDPE, baled	30" x 42" x 48"	1,100	13
	Miscellaneous			
	Trash Bags	cubic yard	35	6
	Grocery/Merchandise Bags	cubic yard	35	6
	Expanded Polystyrene Packaging/Insulation	cubic yard	32	6
Textiles	Mixed Textiles			
	Loose	cubic yard	125-175	10
	Baled	cubic yard	600-750	10
Wood	Wood			
	Wood Chips, green	cubic yard	473	1
	Wood Chips, dry	cubic yard	243	1
	Saw Dust, wet	cubic yard	530	1
	Saw Dust, dry	cubic yard	275	1
	Pallets	one	25	1
	Pallets and Crates	cubic yard	169	18
	Christmas Trees, loose	cubic yard	30	1
Yard Trimmings	Yard Trimmings			
	Leaves	cubic yard	250-500	1
	Leaves (Minnesota)	cubic yard	300 - 383	15
	Mixed Yard Waste			
	Uncompacted	cubic yard	250	1
	Compacted	cubic yard	640	1
	Prunings & Trimmings	cubic yard	127	6
	Branches & Stumps	cubic yard	127	6
Municipal Solid Waste	MSW - Commercial			
	Commercial - dry waste	cubic yard	56-73	16, 8
	Commercial - all waste, uncompacted	cubic yard	138	21
	Mixed MSW - Residential, Institutional, Commercial			
	Uncompacted	cubic yard	250-300	14
	Compacted	cubic yard	400-700	14
	Mixed MSW - Multifamily uncompacted	cubic yard	95	21
	MSW - Landfill			
	Compacted - MSW Small Landfill with Best Management Practices	cubic yard	1,200-1,700	17
	Compacted - MSW Large Landfill with Best Management Practices	cubic yard	1,700-2,000	17

DRAFT 03

Category	Recyclable Materials	Volume	Estimated Weight (lbs)	Source
Municipal Solid Waste	*Compacted - MSW Very Large Landfill with Best Management and Cover Practices, Combined MMSW/Industrial/and other solid waste, or/and Leachate Recirculation*	cubic yard	>2,000	17
C &D	Concrete			
	Large Concrete with Re-bar	cubic yard	860	18
	Large Concrete without Re-bar	cubic yard	860	18
	Small Concrete with Re-bar	cubic yard	860	18
	Small Concrete without Re-bar	cubic yard	860	18
	Asphalt Paving			
	Large Asphalt Paving with Re-bar	cubic yard	773	19
	Large Asphalt Paving without Re-bar	cubic yard	773	19
	Small Asphalt Paving with Re-bar	cubic yard	773	19
	Small Asphalt Paving without Re-Bar	cubic yard	773	19
	Roofing			
	Composition Roofing	cubic yard	731	18
	Other Asphalt Roofing	cubic yard	731	18
	Other Aggregates	cubic yard	860	18
	Wood			
	Clean Dimensional Lumber	cubic yard	169	18
	Clean Engineered Wood	cubic yard	268	18
	Other Recyclable Wood	cubic yard	169	18
	Painted/Stained Wood	cubic yard	169	18
	Treated Wood	cubic yard	169	18
	Gypsum Board			
	Clean Gypsum Board	cubic yard	467	18
	Painted/Demolition Gypsum	cubic yard	467	18
	Aggregate			
	Large Rock	cubic yard	999	18
	Small Rock/Gravel	cubic yard	999	18
	Dirt and Sand	cubic yard	929	18
	Remainder/Composite Construction and Demolition	cubic yard	417	18
	Construction & Demolition Bulk	cubic yard	484	20
	Metal			
	Major Appliances	cubic yard	145	18
	Other Ferrous	cubic yard	225	18
	Other Non-Ferrous	cubic yard	225	18
	Remainder/Composite Metal (avg of metals, without used oil filters)	cubic yard	143	18
	HVAC Ducting	cubic yard	47	18

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1	Oregon Department of Environmental Quality. 2007 Oregon Material Recovery and Waste Generation Rates Report September 2008 08-LQ-092. Attachment B: Measurement Standards and Reporting Guidelines 07-LQ-134. http://www.deq.state.or.us/lq/pubs/docs/sw/MRAttachmentB.pdf
2	Department of Ecology, State of Washington. Coordinated Prevention Grant Conversion Sheet. March, 2014. www.ecy.wa.gov/pubs/1107016.pdf
3	Factor developed using lead per battery data from Battery Council International. Recycling Rates 2009 to 2013. April 2014. http://c.ymcdn.com/sites/batterycouncil.org/resource/resmgr/BCI_Recycling_Rate_Study_200.pdf applied to battery composition data from Sulllivan, JL and Gaines, L. 2010. A Review of Battery Life Cycle Analysis: State of Knowledge and Critical Needs. October 2010. Center for Transportation Research, Energy Systems Division, Argonne National Laboratory ANL/ESD/10-7.
4	Keep America Beautiful. Volume-to-Weight Recycling and Trash Conversion Factors Report. December 2013.
5	Rubber Manufacturers Association (RMA). 2013 U.S. Scrap Tire Management Summary. November 2014. http://www.rma.org/download/scrap-tires/market-reports/US_STMarket2013.pdf
6	California Integrated Waste Management Board. Targeted Statewide Waste Characterization Study: Detailed Characterization of Construction and Demolition Waste. June 2006. http://www.calrecycle.ca.gov/publications/Documents/Disposal%5C34106007.pdf Brown Goods: larger, non-portable electronic goods that have some circuitry. Examples include microwaves, stereos, VCRs, DVD players, radios, audio/visual equipment, and non-CRT televisions (such as LCD televisions). Computer-related Electronics: electronics with large circuitry that is computer-related. Examples include processors, mice, keyboards, laptops, disk drives, printers, modems, and fax machines. Other Small Consumer Electronics: portable non-computer-related electronics with large circuitry. Examples include personal digital assistants (PDAs), cell phones, phone systems, phone answering machines, computer games and other electronic toys, portable CD players, camcorders, and digital cameras.
7	Keep America Beautiful, Recycle-Bowl Competition. Accessed February 2015. http://recycle-bowl.org/wp-content/uploads/Recycle-Bowl-Estimating-Data-Fact-Sheet.pdf
8	Great Forest. Volume to Weight Conversion Ratios for Commercial Office Waste in New York City. January 2013. Primary data; Commingled; large commercial properties (500,000 sq. ft – 1m sq. ft) in the New York metropolitan area. http://www.greatforest.com/files/FileUpload/files/Great%20Forest%20-%20Waste%20Conversion%20Paper%20-
9	US EPA Electronics Waste Management in the United States Through 2009 . May 2011.
10	WasteCare Corporation. Some Typical Loose and Baled Weights of Various Materials. Accessed April 2015. http://www.wastecare.com/Products-Services/Balers/aboutbalers.htm.
11	The Aluminum Association. U.S. Aluminum Beverage Can Recycling. http://www.aluminum.org/sites/default/files/section_images/UBCRecyclingRate2013.pdf
12	The Association of Postconsumer Plastic Recyclers (APR). Model Bale Specifications. http://www.plasticsrecycling.org
13	Caldwell, Maggie. Recycling Plastic Film and Shrink Wrap. May 16, 2014. http://www.federalinternational.com/blog/recy
14	Caterpillar Performance Handbook. 40th Edition. January 2010.
15	Minnesota Pollution Control Agency. Data provided by professional composter. 2015. Source separated organics - food scraps, non-recyclable paper (paper plates/towels/etc) and compostable plastics.
16	Minnesota Department of Administration 2015 hauler records (excludes organics).
17	Minnesota Pollution Control Agency. 2013 MPCA MSW Landfill Annual Report Data.
18	California Integrated Waste Management Board. Targeted Statewide Waste Characterization Study: Detailed Characterization of Construction and Demolition Waste. June 2006
19	Tellus scaled down by factor from Florida C&D study -- Converting C&D Debris from Volume to Weight: A Fact Sheet for C&D Debris Facility Operators, University of Florida, 2000.
20	Florida Dept of Environmental Protection http://www.dep.state.fl.us/waste/categories/recycling/cd/canddmain.htm
21	CalRecycle. 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California. September 10, 2015. http://www.calrecycle.ca.gov/Publications/Documents/1543/20151543.pdf Organics - putrescible material hauled by a contracted third party to a permitted facility mainly engaged in producing compost or mulch, or in anaerobic digestion of organics. Minor mechanical separation of contaminants or recyclable materials may occur at the facility prior to composting or digestion.
22	Goldstein, Nora. "Food Scraps Composting Laboratory". *BioCycle.* January 2013, Vol. 54, No. 1, p. 33. https: //www .biocycle.net/2013/01/22/food-scraps-composting-laboratory/
23	U.S. EPA. Standard Volume-to-Weight Conversion Factors. Last updated: February 28, 2006. https://www.epa.gov/smm/metrics-waste-reduction
24	National Center for Electronics Recycling (NCER). http://www.electronicsrecycling.org/ Mixed monitors and TVs: total pounds collected divided by total units collected.

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Appendix E

Surveys

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Department of Environment & Conservation

Residential Food Scrap Management Survey

The Tennessee Department of Environment and Conservation (TDEC) would like to understand how residents manage food waste at home. This survey seeks to gather information about resident's options for food waste diversion and the desire for increased food recycling/diversion services.

We appreciate you taking a couple of minutes to complete our survey. Please only complete one survey per household.
Estimated time to complete the survey is 3-5 minutes.

When you submit this form, it will not automatically collect your details like name and email address unless you provide it yourself.

* Required

1. Do you live in Tennessee? *

- (●) Yes
- ( ) No

2. How long have you lived in Tennessee? *

- ( ) 0-3 years
- ( ) 4-6 years
- ( ) 7-10 years

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Department of Environment & Conservation

Quantifying Internally Managed Commercial Recyclable Materials in Tennessee

The Tennessee Department of Environment and Conservation (TDEC) would like to collect information from businesses that internally manage recyclable materials. This survey seeks to identify businesses that internally manage recyclable materials and quantify the amount of material managed on an annual basis.

We appreciate you taking a couple of minutes to complete our survey.
Estimated time to complete the survey is 3-5 minutes.

When you submit this form, it will not automatically collect your details like name and email address unless you provide it yourself.

* Required

1. What region of Tennessee is your business located in? *

- [ ] West
- [ ] Middle
- [ ] East

This question is required.

2. How many physical locations/facilities does your business operate? *

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- ◯ 5 or less
- ◯ 6-10
- ◯ 11-25
- ◯ 26-50
- ◯ 50 or more

This question is required.

3. How many staff does your business employ across all locations? *

- ◯ 15 or less
- ◯ 16-50
- ◯ 51-100
- ◯ 100 or more

This question is required.

4. How would you classify your business' industry? *

- ◯ Grocery
- ◯ Landscaping and arborist
- ◯ Retail and wholesale distribution
- ◯ Construction and demolition
- ◯ Manufacturing
- ◯ Food and beverage

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- ◯ Automotive
- ◯ Agriculture
- ◯ Other

This question is required.

5. Does your business recycle? *

- ◯ Yes
- ◯ No

This question is required.

6. How are recyclable materials collected? *

- ◯ Contracted hauler
- ◉ Managed internally by your business
- ◯ Other

7. Which recyclable materials are managed internally by your business? Please select all that apply. *

- ☐ Office Paper
- ☐ Cardboard
- ☐ Aluminum/Bi-Metal Cans
- ☐ Plastics

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- [ ] Textiles
- [ ] Glass
- [ ] Yard Waste
- [ ] Wood Waste
- [ ] Wooden Pallets
- [ ] Electronics
- [ ] Toner Cartridges
- [ ] Batteries
- [ ] Automotive products (fluids, parts, etc.)
- [ ] Construction and Demo Debris
- [ ] Scrap Metal
- [ ] Tires
- [ ] Food waste (Donated to feed people)
- [ ] Food Scraps (processed or used as animal feed)
- [ ] Food Scraps (composted or anaerobically digested)
- [ ] Other

This question is required.

8. For each material type identified above, please indicate the estimated amount of material recycled annually with the unit of measurement (Pounds, Gallons, Cubic Yards, or Tons). *

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Enter your answer

This question is required.

9. For the materials your business manages internally, please indicate how they are managed. *

- [ ] Backhaul to a processor or broker
- [ ] Internally reuse
- [ ] Process on-site
- [ ] Provide to third party for reuse
- [ ] Dispose
- [ ] Other

This question is required.

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⚠ 8 question(s) need to be completed before submitting: Question 1,Question 2,Question 3,Question 4,Question 5,Question 7,Question 8,Question 9.

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- ◯ 10+ years

3. What Grand Division of Tennessee do you live in? *

- ◯ West Tennessee
- ◯ Middle Tennessee
- ◯ East Tennessee

4. What county do you live in? *

Enter your answer

5. What housing type do you live in? *

- ◯ Single-family home
- ◯ Apartment/Condo
- ◯ Multi-family home (duplex triplex)

6. How many people are in your household? *

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4

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- ◯ 5
- ◯ 6
- ◯ 7
- ◯ 8
- ◯ 9
- ◯ Other

7. How supportive are you of improving sustainability in Tennessee by reducing food waste? *

Not Supportive ☆ ☆ ☆ ☆ ☆ Very Supportive

8. Please provide feedback regarding your selection above.

Enter your answer

9. What do you do with uneaten food and inedible food scraps you generate at home? (select all that apply) *

- ☐ Dispose with trash at the curb
- ☐ Dispose at your home in-sink garbage disposal
- ☐ Separate from trash and place curbside for collection
- ☐ Transport on your own to a drop-off collection location

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- [ ] Compost at home
- [ ] Use as feed for animals
- [ ] Other

10. What is the estimated volume of uneaten food/inedible food scraps you generate at home during an average week? *

- ◯ 1 gallon or less
- ◯ 1-5 gallons
- ◯ 5 gallons or more
- ◯ Unknown/unable to estimate

11. What types of food waste composting services do you know are available to you? *

- [ ] Curbside collection
- [ ] Drop-off collection
- [ ] No compost services
- [ ] Not sure

12. Please list the names of the businesses offering composting services.

Enter your answer

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13. If convenient, reliable food waste composting services were available, how likely is it that you would participate? *

- ◯ Very likely
- ◯ Somewhat likely
- ◯ Neither likely nor unlikely
- ◯ Somewhat unlikely
- ◯ Very unlikely
- ◯ I already compost food waste

14. What barriers or concerns do you have to participate in a food waste/scraps composting program? *

- ☐ Cost
- ☐ No or limited services in my area
- ☐ Lack of knowledge
- ☐ Gross factor
- ☐ Other

15. Please provide any additional comments or feedback on food waste composting in the State of Tennessee.

Enter your answer

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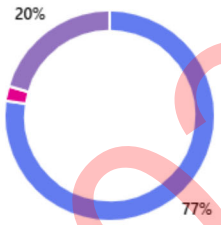
Responses Overview

Active

Responses	Average Time	Duration
44	11:15	186 Days

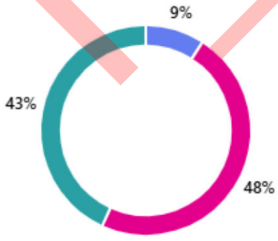
1. Which of the following best describes your position/knowledge of waste management:

County-level solid waste coordinator	34
City/other municipal (not County) solid waste coordinator	1
Private solid waste service provider	0
Other	9



2. What Grand Division of Tennessee are you located in?

West	4
Middle	21
East	19



3. What county of Tennessee are you located in?

44
Responses

Latest Responses
"Morgan"
"Cheatham"
"Williamson"
...

2 respondents (5%) answered County for this question.



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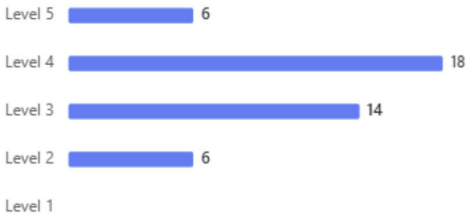
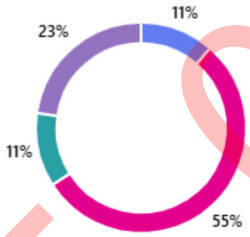
4. Generally, how supportive is your community of sustainable solid waste management efforts (i.e. waste reduction, reuse, recycling, compo sting, etc.)?

3.55
Average Rating



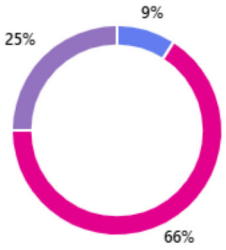
5. To your knowledge, do any local solid waste planning documents discuss/address food waste minimization/diversion?

Yes	5
No	24
Maybe	5
Unknown	10



6. Do you know if private haulers, municipalities or other entities provide separate food waste collection services from residents or business es in your community?

Yes	4
No	29
Maybe	0
Unknown	11



7. Please provide details of known food waste only collection services in your community (i.e. name of hauler, curbside collection, drop-off c ollection, materials accepted, onsite management (typically commercial), program/service contact information).

4
Responses

Latest Responses
...

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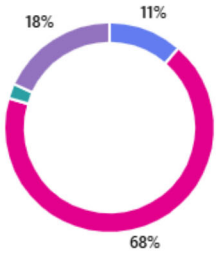
8. Do you know of non-disposal facilities, such as composting sites, anerobic digesters, farms, etc. in your community that accept/take sourc e-separated food waste for beneficial use?

Yes	5
No	30
Maybe	1
Unknown	8



9. Please provide details (i.e. names, owners/operators, addresses, etc.) of all known facilities/locations that to your knowledge accept sourc e-separated food waste for processing and beneficial use.

6
Responses

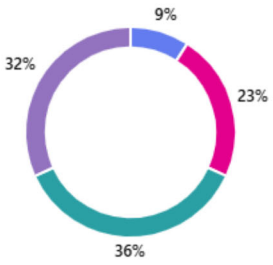
Latest Responses
"The Compost Company"

5 respondents (83%) answered Composting for this question.



10. Is there public interest to collect source-separated food waste in your community?

Yes	4
No	10
Maybe	16
Unknown	14



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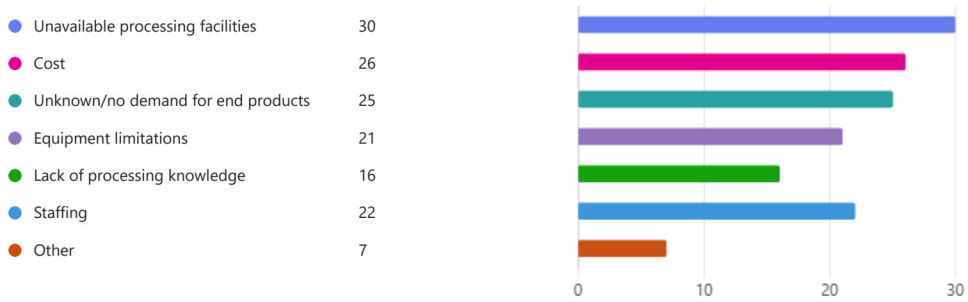
11. In your eyes, what are the most significant barriers in your area/region to starting or expanding food waste diversion programs?



12. Please provide additional comments or feedback on food waste diversion in your community for TDEC staff to consider.

44
Responses

Latest Responses
"Really not versed enough in the subject to make an informed decision. Would be ... "
"None"
"We struggle with the residents placing recycle commodities in with their trash or ... "
...

13 respondents (30%) answered food waste for this question.



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APPENDIX 2

Solid Waste Regional Plan Guidance Document

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Department of Environment & Conservation

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Solid Waste Regional Plan Guidance Document

Tennessee Department of Environment and Conservation | June 2026

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LIST OF TABLES

Table 1: Regional Plan Content Checklist

LIST OF APPENDICES

Appendix A: Template Table of Contents
Appendix B: Regional Plan Additional Guidance and Data Sources

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ACRONYMS AND ABBREVIATIONS

2035 Plan	2025-2035 Statewide Integrated Solid Waste Management Plan
APR	Annual Progress Report
BMP	Best Management Practice
Board	Regional Solid Waste Board
BOPAE	Batteries, Oil, Paint, Antifreeze, and Electronics
C&D	Construction and Demolition
DDMP	Disaster Debris Management Plan
DLP	Division of Land Protection
EPA	U.S. Environmental Protection Agency
HHW	Household Hazardous Waste
ICI	Industrial, Commercial, and Institutional
MRF	Materials Recovery Facility
MSW	Municipal Solid Waste
RMPF	Recovered Materials Processing Facility
State Plan	Statewide Integrated Solid Waste Management Plan
SWMF	Solid Waste Management Fund
SWOR	Solid Waste Origin Report
TCA	Tennessee Code Annotated
TDEC	Tennessee Department of Environment and Conservation

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1. INTRODUCTION

Tennessee's Solid Waste Management Act of 1991 (Tennessee Code Annotated [TCA] §68-211-801 through §68-211-874) establishes the requirement for each Solid Waste Planning Region (Region) to prepare, maintain, and periodically revise a 10-year Municipal Solid Waste Regional Plan (Regional Plan). This guidance document provides Regions with a structured framework to support Regional Plan preparation.

1.1 Solid Waste Regional Plans

In accordance with TCA §68-211-813 through §68-211-815, each Region must develop a Regional Plan that satisfies statutory minimum content requirements, addresses waste reduction planning consistent with Rule 0400-11-01-.09, and demonstrates how solid waste will be managed over a 10-year planning horizon. Regional Plans are tailored to the specific needs, infrastructure, waste streams, and growth trends of each region, serve as the primary mechanism for local-level and regional solid waste planning, and must be consistent with the Statewide Integrated Solid Waste Management Plan (State Plan) and aligned with its goals and objectives.

Recent statutory updates have further aligned the State Plan, TDEC regulations, and regional planning requirements by clarifying TDEC's authority to approve or disapprove Regional Plans based on statutory compliance, directing the development of formal rulemaking criteria for plan review by July 2027, and establishing a deadline of July 1, 2028, for submission of updated Regional Plans for TDEC review.

1.2 2025-2035 Statewide Integrated Solid Waste Management Plan

The State Plan is developed under the Tennessee Solid Waste Planning and Recovery Act and implemented within the broader framework of the Solid Waste Management Act of 1991. Together, these acts require the State to maintain a current State Plan addressing waste reduction goals, system capacity, and program effectiveness. The 2025–2035 State Plan (2035 Plan) updates the 2015–2025 State Plan and establishes a framework to support Tennessee's solid waste management systems statewide. Below are the objectives of the 2035 Plan:

- Objective 1: Ensure Long-term Environmentally Protective Disposal Capacity
- Objective 2: Advance Material Processing Infrastructure and Market Development
- Objective 3: Increase Diversion of Organic Waste
- Objective 4: Strengthen Goals and Data-Driven Performance Metrics
- Objective 5: Manage Problematic or Hard-to-Manage Waste
- Objective 6: Disaster Debris Management
- Objective 7: Expand and Focus Education and Outreach
- Objective 8: Develop Sustainable Funding Sources for Municipal Solid Waste Management Programs

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2. ROLES AND RESPONSIBILITIES

Tennessee's solid waste planning framework functions through coordinated responsibilities shared among the Regions and the Tennessee Department of Environment and Conservation (TDEC).

2.1 Solid Waste Planning Regions

Regions serve as the primary planning bodies responsible for developing, maintaining, and updating Regional Plans. A Region may consist of a single county or multiple counties working collaboratively. Each Region must form a Regional Solid Waste Board (Board) with representation from all counties and participating municipalities, ensuring municipal interests are incorporated into regional decision-making. The Board is led by a Board Chair and directs regional planning activities, coordinating input from member jurisdictions to reflect Region-wide priorities. Regions are expected to maintain accurate records of Board appointments, including the designation of the Board Chair, interlocal agreements for multi-county Regions, and applicable Part 9 Solid Waste Authority documentation.

A Region may establish a Part 9 Solid Waste Authority to implement the Regional Plan and manage solid waste programs, facilities, financing, and contracts on behalf of the Region, where authorized. Whether administered by the Board directly or through a Part 9 Authority, each Region is responsible for preparing and maintaining a compliant Regional Plan. Plans must be formally adopted through public hearings and resolutions, with supporting documentation. Regions must provide plan updates through the Annual Progress Report (APR) by March 31, as required by TCA §68-211-815(b), and must submit a new Regional Plan within two years of a State Plan update. Regions remain responsible for the accuracy and completeness of all plan information.

2.2 TDEC Division of Land Protection

TDEC, through the Division of Land Protection (DLP), provides statewide leadership, regulatory oversight, enforcement, and technical assistance to support the development and implementation of Regional Plans. TDEC prepares and maintains the State Plan, reviews Regional Plans for compliance, and provides the tools, policies, and other resources to meet TCA §68-211-814 and §68-211-815.

As part of its statutory role, TDEC issues official correspondence, deficiency letters, approvals, warnings, funding-loss notifications, penalties, and reinstatements for Regional Plan compliance and maintains the official record of submissions, reviews, and actions. TDEC also tracks and reviews APR submissions, manages data systems, and provides ongoing technical assistance for regional planning and compliance.

2.3 Process Overview

Following the adoption of the 2035 Plan and each subsequent State Plan, Regions must prepare and submit a Regional Plan covering the next 10-year planning horizon. While

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analyses, data, and text may be incorporated from prior plans, each new submittal must be a complete, and cohesive document reflecting current conditions, projections, priorities, and system needs.

Prior to submittal, the Region must confirm that the Plan addresses all elements required under TCA §68-211-815. Only complete submissions initiate the formal review process. All Regional Plans must be submitted through TDEC's web-based data collection and management platform, MyTDECForms. Upon receipt, TDEC confirms submission receipt and records the date and time of submission, the submitting Region, and the sender. The confirmed receipt date marks the start of the statutory review period. Following receipt, within 30 days, TDEC will conduct an administrative completeness determination to verify that all required plan components and supporting documentation have been submitted. Incomplete submissions are returned with a request for additional information prior to formal review.

Once a complete Regional Plan is received, effective July 1, 2026, TDEC has 120 days to approve or disapprove the Plan. If the Plan adequately addresses required statutory elements, TDEC will issue a written notice of approval, which constitutes the final step in the Plan adoption process. If the Plan is disapproved, TDEC will provide a written notice of disapproval listing identified deficiencies. The Region must revise the Plan to correct all deficiencies and resubmit it within 60 days of receiving the disapproval notice.

2.4 Non-Compliance

If TDEC determines that a Region has failed to submit a required Regional Plan, updated Regional Plan, or response to identified deficiencies, the TDEC Commissioner will issue a Warning Letter to the Region's Board Chair. The Warning Letter describes the nature of noncompliance, outlines potential sanctions, and offers technical assistance to support corrective action.

If the noncompliance is not corrected within 30 days of receipt of the Warning Letter, the Region becomes ineligible for Solid Waste Management Fund (SWMF) dollars unless the TDEC Commissioner grants additional time in writing. If noncompliance is not corrected within 60 days of issuance of the Warning Letter, the TDEC Commissioner may assess civil penalties of up to $5,000 per day beyond the 60-day period, in addition to any other penalties authorized under TCA §68-211-816(a)(3).

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3. GRANT FUNDING

The Solid Waste Management Act of 1991 establishes Tennessee's responsibility to protect public health, safety, and environmental quality through a comprehensive, integrated statewide solid waste management program implemented by TDEC. The Act is intended to ensure that solid waste facilities, whether publicly or privately operated, do not adversely affect human health or the environment.

To support local governments in meeting these objectives, TDEC works with Regions and technical assistance providers to offer planning support, guidance, training, and related services to promote the highest and best use of materials.

The Act established the SWMF, authorizing TDEC to award annual grants under TCA §68-211-822 and §68-211-823. TDEC seeks to support Regional Plan development, including through qualified technical assistance providers, consistent with TCA §68-211-615 and aligned with the objectives of the 2035 Plan. TDEC has allotted approximately $3,000,000 in grant funds for this purpose. Under the current funding structure, 90 counties are eligible for up to $30,000 in grant funding, while the five largest applicant counties are eligible for up to $60,000.

Grant funding is intended to be based on each recipient's needs as outlined in the technical narrative prompts; however, TDEC reserves the right to award partial funding or request additional supporting documentation.

3.1 Eligibility

This one-time grant funding has been allocated for entities that successfully draft and implement Regional Plans. Accordingly, grant funds are made available to counties, including individual counties within multi-county Regions, with each county eligible to apply separately. The Department may condition the award of grant funds on an applicant's compliance with applicable state statutes, rules, and regulatory requirements, including financial assurance obligations, corrective action for violations, and payment of required solid waste fees.

3.2 Timeline

Grant funding will be administered in alignment with TDEC's regional planning schedule, with key milestones including: Regional Planning Grants opening in January 2027, execution of grant contracts with counties in April 2027, publication of new rules by July 2027, and submission of Regional Plans to TDEC by July 1, 2028. TDEC's goal is to ensure regions have adequate time to develop and submit their Regional Plans.

This timeline is subject to change as work on the 2035 Plan, rulemaking, and regional planning process continues. If it becomes apparent that one or more milestones cannot be met, TDEC may adjust the schedule to better support successful regional planning efforts and will communicate any changes in advance.

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4. REQUIRED REGIONAL PLAN CONTENT

Pursuant to TCA §68-211-814 and §68-211-815, each Regional Plan must be prepared and maintained through annual updates submitted via the APR. Regional Plans are required, at a minimum, to include:

- **Regional Profile and Growth:** The Regional Plan must document demographic conditions within the Region, including population characteristics and anticipated population changes over the 10-year planning horizon.
- **Existing Solid Waste Management System:** The Regional Plan must include an analysis of the current solid waste system addressing all aspects of solid waste management within the Region, including:
    - Waste streams, identifying the types and quantities of solid waste generated;
    - Collection capability, describing the collection systems in use and the populations and geographic areas served and unserved;
    - Disposal capability, including the remaining capacity and life expectancy of landfills or other disposal facilities used by the Region's residents and businesses;
    - Costs, presented using a full-cost accounting model or a comparable methodology approved by the TDEC Commissioner, including costs of collection, disposal, maintenance, contracts, and other costs; and
    - Revenues, including cost-recovery mechanisms, appropriations, fees, and other funding sources.
- **Financial Management and Reporting:** The Regional Plan must demonstrate adoption of:
    - The uniform financial accounting system required by TCA §68-211-874; and
    - Uniform reporting requirements as required by TCA §68-211-815(b)(9).
- **Capacity Planning and Assurance:** The Regional Plan must identify anticipated solid waste capacity needs and describe how the Region will provide capacity assurance, including planned or needed facilities.
- **Recycling and Waste Reduction:** The Regional Plan must include:
    - A recycling plan, including a description of current public and private recycling efforts and planned efforts to enhance recycling within the county or region; and
    - A description of waste reduction and recycling activities designed to achieve the statewide goal established under TCA §68-211-861, including demonstration of progress toward the required 25 % reduction in disposal relative to the 1995 baseline.
- **Household Hazardous Waste (HHW) Management:** The Regional Plan must include a description of how HHW is generated within the Region and is managed.

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- **Education and Outreach:** The Regional Plan must describe education initiatives directed at businesses, industries, schools, residents, and other stakeholders that address recycling, waste reduction, collections, and related solid waste goals.
- Regional Structure and Coordination: The Regional Plan must include:

  An evaluation of multi-county Regional solid waste management options, including an explanation of why a multi-county approach was adopted or not adopted;

  A description of the roles and responsibilities of participating local governments within the Region; and

  A timetable for implementation of the Plan.
- **Certification and Governance:** The Regional Plan must include a certification stating that the Regional Plan has been reviewed and approved by:

  The Region's Title 68, Chapter 211, Part 9 solid waste authority, if such an authority exists; or

  The county legislative body of each county within the Region if no authority has been formed.
- **Disaster and Emergency Debris Management:** The Regional Plan must include a strategy for managing solid waste generated from disasters or emergency events.
- **Additional Information:** The Regional Plan must include any other information the TDEC Commissioner deems necessary to support implementation of the Solid Waste Management Act.

Failure to submit a Plan that meets the minimum content requirements outlined in TCA §68-211-815 may result in disapproval and enforcement action. Regions must also demonstrate progress toward the 25 % waste reduction goal established under TCA §68-211-861.

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5. REGIONAL PLAN CONTENT CHECKLIST

To support consistent organization of Regional Plans, **Attachment A** provides a template Table of Contents aligned with the required content outlined in **Section 6. Table 1** supplements this framework with a checklist-style summary of required components cross-referenced to corresponding Regional Plan sections, helping Regions verify completeness prior to submittal and supporting consistent review. Additional guidance and resources are provided in **Attachment B**. Required elements must be clearly addressed in the Regional Plan, as omission or inadequate documentation may result in Plan disapproval.

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Table 1: Regional Plan Content Checklist

Required Content (Section 4)	Plan Section (Attachment A)	☒	Required Components
Regional Structure and Coordination	**Chapter 1** - Regional Structure and Coordination	☐	1. **Region Identification and Makeup:** Identify the Region by official name and number and list all counties and municipalities. Explain reasoning for adopting, or not adopting, a multi-county Regional approach.
		☐	2. **Regional Board Composition:** Summarize current Regional Solid Waste Board membership, including members, representation, term structure, and roles and responsibilities.
		☐	3. **Part 9 Authority (if applicable):** Identify any Part 9 Authority used by the Region and reference required supporting documentation.
		☐	4. **Uniform Reporting Requirements:** Describe adoption and implementation of consistent reporting requirements, including, but not limited to, APRs.
		☐	5. **Plan Revision and Tracking:** Describe the plan amendment and revision process, including responsibilities and version tracking.
Regional Profile and Growth	**Chapter 2** - Regional Profile and Growth	☐	1. **Demographic Information:** Summarize current population, population density, and other key demographic characteristics by county and municipality (cite data sources).
		☐	2. **Population and Growth Trends:** Describe projected population change over the 10-year planning horizon for each jurisdiction (cite assumptions/sources).
		☐	3. **Socio-Economic Profile:** Describe Regional socio-economic conditions and trends, including income, employment, poverty, age distribution, and English proficiency, as relevant to solid waste planning. Note any jurisdictional variations.
		☐	4. **Major Sector Changes:** Describe past and anticipated economic, industrial, and facility changes affecting solid waste management.
Existing Solid Waste Management System	**Chapter 3.1** - Waste Stream Characterization	☐	1. **Total Waste Generated:** Summarize the Region's current total solid waste quantity generated (in tons), with jurisdiction-level totals also summarized.
		☐	2. **Generation by Material Stream:** List tonnages by major material category and jurisdiction, including the following as applicable: organics, paper, plastics, metals, construction and demolition (C&D) debris, glass, HHW, electronics, and other.
		☐	3. **Generation by Sector:** Present tons generated by sector across the Region (residential, commercial, industrial, and institutional).
		☐	4. **Disposition/Management Pathways:** Provide a disposal/diversion breakdown of the Region's solid waste management system (e.g., landfill, recycling, composting, waste-to-energy, etc.), showing how material moves from generation to end use. A visual waste flow model/diagram is preferred.
Existing Solid Waste Management System	**Chapter 3.2** - Collection Systems	☐	1. **Collection Service Coverage:** Describe available collection services by jurisdiction and waste stream. Include populations and geographies served/unserved and how coverage supports successful capture by material stream (i.e. recyclables, problematic waste [HHW, tires, Batteries, Oil, Paint, Antifreeze, and Electronics/BOPAE], organics, and C&D debris). Describe how coverage supports Regional collection assurance.
		☐	2. **Contracted Collection Services:** Summarize collection contracts by jurisdiction for all waste streams, including service providers, service areas, terms, and how long-term collection assurance is maintained over the 10-year planning horizon.

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Required Content (Section 4)	Plan Section (Attachment A)	☒	Required Components
		☐	3. **Collection Facilities Inventory:** Identify collection facilities serving the Region, including facility name, location, type, jurisdictions served, permit or ID number, and waste streams and volumes handled.
Existing Solid Waste Management System	**Chapter 3.3** - Transfer and Disposal Systems	☐ ☐ ☐	1. **Transfer Facilities:** Identify transfer and consolidation facilities in the Region, including facility name, location, classification, jurisdictions served, permit or ID number, and volumes of material handled. 2. **Processing Facilities:** Identify processing facilities (e.g., Recovered Materials Processing Facilities [RMPFs]) in the Region, including facility name, location, classification, jurisdictions served, permit or ID number, and volumes of material handled. 3. **Disposal Facilities:** Identify disposal facilities serving the Region, such as landfills (including landfill classification), waste-to-energy facilities, incinerators, and other disposal systems including facility name, facility location, facility type, jurisdictions served, permit or ID number, and volumes of material disposed.
Capacity Planning and Assurance	**Chapter 4.1** - Capacity Needs Assessment	☐	1. **Disposal Capacity and Needs Assessment:** Evaluate current solid waste disposal capacity and needs, including existing tonnage managed and projected disposal demand over the 10-year planning horizon.
Capacity Planning and Assurance	**Chapter 4.1** - Capacity Needs Assessment	☐ ☐	1. **Projected Growth and Disposal Demand:** Identify anticipated changes in waste generation, population growth, and system use affecting future disposal needs. 2. **Remaining Permitted Capacity and Facility Longevity:** Document remaining permitted capacity and estimated life expectancy of landfills, waste-to-energy facilities, transfer stations, or other disposal facilities used by the Region.
Capacity Planning and Assurance	**Chapter 4.2** - Capacity Assurance Strategy	☐ ☐	1. **Long-Term Disposal Capacity Provision:** Describe how long-term disposal capacity will be provided to serve the Region over the 10-year planning horizon, including reliance on in/out-of-Region facilities. 2. **Demonstration of Disposal Capacity Assurance:** Provide documentation demonstrating disposal capacity assurance, such as written assurance from receiving disposal facilities or a disposal capacity analysis prepared and certified by a qualified professional.
Capacity Planning and Assurance	**Chapter 4.3** - Alignment with State Plan Objective 1	☐ ☐ ☐ ☐	1. **Summary of Existing Disposal Capacity:** Summarize existing disposal capacity available to the Region, including key disposal facilities relied upon and their remaining permitted life, to establish the current baseline condition. 2. **Capacity vs. Projected Demand:** Summarize how current and planned disposal capacity aligns with projected waste generation and disposal demand over the 10-year planning horizon and whether capacity is sufficient for expected growth. 3. **Long-Term Capacity Risks:** Identify and summarize risks to long-term disposal capacity, such as permitting limitations, market or contractual changes, facility closures or constraints, and reliance on out-of-Region facilities. 4. **Risk Mitigation Strategies:** Summarize the strategies the Region will use to address or mitigate identified disposal capacity risks, including diversification of disposal options, facility planning, policy actions, and partner coordination (public or private).
Recycling and Waste Reduction	**Chapter 5.1** - Recycling and Materials Processing Infrastructure	☐ ☐	1. **Recycling Programs and Services:** Describe existing public and private recycling programs and services available in the Region, including service types, populations and jurisdictions served, and how programs support Regional diversion goals. 2. **Recycling and Materials Processing Facilities:** Identify recycling and recovered materials processing facilities serving the Region including RMPFs, Materials Recovery Facilities (MRFs), and baling facilities. Include facility name, location, type, jurisdictions served, permit or ID number, and material volumes handled.

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Required Content (Section 4)	Plan Section (Attachment A)	☒	Required Components
		☐	3. **End Markets for Recovered Materials:** Identify end markets for recycled materials and products managed through Regional programs and facilities. Include material types, market destinations (in/out-of-Region), and the role these markets play in supporting long-term recycling system viability.
Recycling and Waste Reduction	**Chapter 5.2** - Organics Management and Diversion	☐ ☐ ☐	1. **Organics Collection Programs and Services:** Describe existing public and private organics collection programs and services available in the Region, including service types, populations served, and how programs support diversion of organic materials. 2. **Organics Processing Facilities:** Identify organics processing facilities serving the Region (e.g., composting, mulching, anaerobic digestion). Include facility name, location, type, jurisdictions served, permit or ID number, and material volumes handled. 3. **End Markets for Organic Materials:** Identify end markets for organic materials and products managed through Regional programs and facilities, including material types, market destinations (in/out-of-Region), and how they support long-term system viability.
Recycling and Waste Reduction	**Chapter 5.3** - Alignment with State Plan Objectives 2 and 3	☐ ☐ ☐ ☐	1. **Existing Diversion Infrastructure Baseline:** Summarize existing recycling, recovered materials processing, and organics diversion infrastructure serving the Region, establishing the baseline system and how components function collectively to support diversion. 2. **System Capacity, Market Access, and Gaps:** Identify limitations or gaps in recycling, materials processing, and organics diversion systems, including capacity constraints, market access challenges, geographic coverage issues, and operational inefficiencies that may limit diversion performance. 3. **Planned and Potential System Enhancements:** Summarize planned or potential investments, partnerships, and cooperative approaches intended to address gaps and strengthen recycling and organics diversion systems over the planning horizon. 4. **Market Development and System Strategies:** Describe market strategies such as Regional collaboration, shared or hub-and-spoke infrastructure, and market diversification used to improve system reliability, flexibility, and resilience.
Recycling and Waste Reduction	**Chapter 5.3** - Alignment with State Plan Objectives 2 and 3	☐ ☐ ☐	1. **System Performance and Long-Term Benefits:** Explain how identified strategies are expected to improve system efficiency, resilience, economies of scale, and diversion of recyclable and organic materials over the planning period. 2. **Regional Waste Reduction and Diversion Goals:** Describe Regional waste reduction and diversion goals and how they align with State Plan Objectives, clearly distinguishing between jurisdiction-led programs and industrial, commercial, and institutional (ICI) sector activities. 3. **Diversion Performance and Annual Progress:** Demonstrate progress toward the 25% disposal reduction goal, building on the material quantities and management pathways presented in Chapter 3.1 to describe diversion performance calculated separately for jurisdictional efforts and ICI sector activities, including the predominant material types and associated beneficial end uses representing at least 50% of diverted tonnage, and summarize annual progress and trends using required reporting mechanisms.
Performance Metrics	**Chapter 6.1** - Data Collection and Performance Metrics	☐	1. **Data Collection and Responsibility:** Describe data collection methods used to track system performance and progress toward plan goals, including responsible contacts, data types collected, and roles in maintaining and submitting data.

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Required Content (Section 4)	Plan Section (Attachment A)	☒	Required Components
		☐ ☐	2. **Data Quality and Review Processes:** Describe procedures used to ensure data accuracy, consistency, and integrity, including audit steps, review workflows, and avoidance of duplicate or unsupported data. 3. **Data Management and Systems:** Summarize how data are collected, stored, and managed across the Region, including system limitations related to security, access, transparency, or outdated tools.
Performance Metrics	**Chapter 6.2** - Alignment with State Plan Objective 4	☐ ☐ ☐	1. **Performance Metrics and Goal Tracking:** Summarize performance metrics used to track progress toward Regional waste reduction and diversion goals, including how metrics align with State Plan Objective 4. 2. **Reporting and Data Use:** Describe data sources, reporting methods, and how performance data are used to inform planning decisions, program adjustments, and policy evaluation. 3. **Data Gaps and Planned Improvements:** Identify data gaps or issues affecting performance measurement. Summarize planned improvements, modernization efforts, and implementation timelines.
HHW Management	**Chapter 7.1** - Problematic or Hard-to-Manage Wastes	☐ ☐	1. **Management of Problematic Waste Streams:** Describe how BOPAE, HHW, and other problematic or hard-to-manage waste streams are managed within the Region, including collection methods, service models, and responsible entities. 2. **Collection Site Coverage:** Identify and summarize collection sites and service approaches used to manage problematic or hard-to-manage wastes at the local level, including how state collection requirements are addressed.
HHW Management	**Chapter 7.2** - Alignment with State Plan Objective 5	☐ ☐ ☐ ☐	1. **Alignment and Coverage:** Describe how HHW programs align with 2035 Plan Objective 5 and provide accessible, compliant HHW management in the Region. 2. **Coordination and Implementation:** Describe coordination among jurisdictions, regional partners, state programs, and providers supporting HHW management. 3. **Gaps and Challenges:** Identify key gaps or limitations in current HHW management (e.g., access, funding, participation) and how they are currently addressed. 4. **Improvements and Strategies:** Describe areas of improvement and strategies to reduce improper disposal of HHW.
Disaster and Emergency Debris Management	**Chapter 8.1** - Disaster Debris Management Strategy, Coordination, and Implementation	☐ ☐ ☐	1. **Confirmation of Regional Disaster Debris Management Plan (DDMP):** Confirm the Region has a comprehensive DDMP in place incorporating county-level plans. 2. **Intergovernmental and Emergency Coordination Alignment:** Demonstrate alignment with State expectations for coordination among local governments and emergency management agencies during disaster debris operations. 3. **Rapid Recovery and Environmental Protection:** Explain how the Region's disaster debris planning approach supports rapid recovery while minimizing environmental impacts, consistent with State Plan Objective 6.
Disaster and Emergency Debris Management	**Chapter 8.2** - Alignment with State Plan Objective 6	☐ ☐ ☐	1. **Debris Management, Staging, and Disposal:** Summarize how disaster debris is anticipated to be staged, processed, diverted, and disposed during emergency events, including use of temporary staging sites and protection of disposal capacity. 2. **Intergovernmental and Emergency Coordination:** Describe coordination mechanisms with local governments and emergency management agencies to ensure compatible systems, clear roles, and efficient debris operations. 3. **Rapid Recovery and Environmental Protection:** Explain how disaster debris planning supports rapid community recovery and minimizes environmental impact.

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Required Content (Section 4)	Plan Section (Attachment A)	☒	Required Components
Education and Outreach	**Chapter 9.1** - Public Education Initiatives	☐ ☐ ☐ ☐ ☐	1. **Current Public Education Initiatives:** Describe existing public education and outreach initiatives focused on residents and the general public, including messaging, waste streams addressed, delivery methods, and broad coverage. 2. **Responsible Parties and Partnerships:** Identify the Regional point of contact and supporting local governments, agencies, or partners responsible for developing and delivering public education initiatives, including coordination mechanisms. 3. **Target Audiences and Accessibility Considerations:** Describe primary public audiences served, including households, students, transient populations, and underserved communities. Address language, literacy, and accessibility needs. 4. **Outstanding Public Education Needs and Gaps:** Identify unmet needs, barriers, or limitations in public solid waste education (e.g., limited reach, seasonal populations, or funding constraints). 5. **Progress and Planned Public Education Initiatives:** Summarize progress made and planned improvements, expansions, or new initiatives intended to address identified gaps and improve system participation and performance.
Education and Outreach	**Chapter 9.2** - Business and Industry Outreach	☐ ☐ ☐ ☐	1. **Business and Industry Outreach Initiatives:** Describe education and outreach initiatives targeted in the ICI sector, including messaging related to waste reduction, recycling, organics diversion, compliance, and operational or cost impacts. 2. **Engagement Methods and Partnerships:** Describe methods used to engage the business and industry sector, such as direct outreach, training, technical assistance, partnerships, or cooperative programs, and identify responsible entities. 3. **Targeted Audiences and Sector Needs:** Identify key ICI audiences (e.g., large generators, multi-family properties, campuses, event venues) and summarize sector-specific education or outreach needs. 4. **Progress, Gaps, and Planned Enhancements:** Summarize progress achieved through business and industry outreach, identify gaps or participation challenges, and describe enhancements to improve effectiveness and diversion outcomes.
Education and Outreach	**Chapter 9.3** - Alignment with State Plan Objective 7	☐ ☐	1. **Summary of Education and Outreach Framework:** Summarize how public, ICI, and policy-maker education and outreach efforts support State Plan Objective 7. Include messaging priorities, communication channels, and coordination approaches. 2. **Alignment Gaps and Strategic Improvements:** Identify remaining gaps or limitations in education and outreach and summarize how planned initiatives will improve reach, equity, and system performance over the planning horizon.
Financial Management and Reporting	**Chapter 10.1** - Solid Waste Program Costs, Revenues, Cost Recovery, Financial Accounting and Reporting Compliance	☐ ☐ ☐	1. **Program Costs and Full Cost Accounting:** Describe solid waste program costs using a full cost accounting model (or comparable methodology approved by the TDEC Commissioner), including operational, administrative, and capital costs. 2. **Revenue Sources and Cost Recovery:** Identify revenue sources and cost recovery methods supporting solid waste programs, including user fees, service charges, Pay-As-You-Throw mechanisms, appropriations, grants, and other sources. 3. **Financial Accounting and Reporting:** Describe adoption and use of the required uniform financial accounting system, including consistency with the Comptroller's Standard Chart of Accounts and compliant financial reporting practices.
Financial Management and Reporting	**Chapter 10.2** - Existing Funding Mechanisms	☐ ☐	1. **Current Funding Structures:** Describe existing funding mechanisms used by each local government to support solid waste and recycling services, including fee structures, tax support, contractual arrangements, and revenue flows. 2. **Funding Stability and Flexibility:** Describe how current funding mechanisms support ongoing service delivery, account for changing market conditions, and respond to variations in participation or waste generation.
Financial Management and Reporting	**Chapter 10.3** - Funding Gaps	☐	1. **Funding Gaps and Risks:** Identify funding gaps, vulnerabilities, or financial risks that affect solid waste or recycling services, such as insufficient cost recovery, reliance on volatile markets, public resistance to fees, or duplicated services.

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Required Content (Section 4)	Plan Section (Attachment A)	☒	Required Components
		☐	2. **Efficiency and Cost Pressures:** Identify areas where service duplication, inefficiencies, or resident behavior patterns affect system costs.
Financial Management and Reporting	**Chapter 10.4** - Alignment with State Plan Objective 8	☐ ☐ ☐	1. **Support for Long-Term Program Sustainability:** Summarize how existing funding mechanisms support long-term solid waste and recycling program sustainability. Include key financial vulnerabilities or funding gaps that could affect service delivery. 2. **Strategies to Improve Financial Sustainability:** Summarize strategies to improve cost recovery, financial stability, and system efficiency, including consolidation opportunities, behavior-based pricing, or operational adjustments. 3. **Intergovernmental Coordination:** Describe coordination efforts with local governments and partners that improve financial sustainability, reduce duplication, and support efficient Regional service delivery.
Implementation Plan	**Chapter 11.1** - Implementation Schedule	☐ ☐ ☐	1. **Implementation Timeline:** Provide a timetable for implementation of the Regional Plan, identifying major actions, initiatives, and milestones over the planning period. 2. **Phasing and Prioritization:** Describe how implementation activities are phased and prioritized over time, including near-term, mid-term, and long-term actions. 3. **Tracking and Updates:** Describe how implementation progress will be tracked and how the schedule will be updated or adjusted through reporting or plan updates.
Implementation Plan	**Chapter 11.2** - Roles and Responsibilities for Implementation	☐ ☐ ☐	1. **Participating Jurisdiction Responsibilities:** Describe the roles and responsibilities of participating counties and municipalities in implementing the Regional Plan, including service delivery, data reporting, policy adoption, and coordination activities. 2. **Regional and Intergovernmental Coordination:** Describe the responsibilities of Regional entities and how coordination among local governments, state agencies, and partners supports effective implementation. 3. **Supporting Stakeholders:** Identify the roles of key stakeholders (e.g., private sector operators, nonprofit organizations, and the public) in plan implementation.
Certification and Governance	**Chapter 12** - Certification and Governance	☐	1. **Regional Plan Review and Adoption Certification:** Provide certification that the Regional Plan has been formally reviewed and approved by the appropriate authority, including the Part 9 Authority (if applicable) and/or the county legislative bodies of all participating jurisdictions, in accordance with statutory requirements.

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ATTACHMENT A

Template Table of Contents

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Attachment A: Recommended Table of Contents

This attachment presents the suggested organization for a Regional Plan prepared pursuant to TCA §68-211-814 and §68-211-815, and is structured to promote consistency across Regional Plan submittals, streamline TDEC review, and demonstrate compliance with statutory requirements.

Section	Description
Executive Summary	Purpose and scope of the Regional Plan; Summary of Regional conditions, system performance, and key findings; High-level summary of how the Region supports the State Plan and its eight objectives; Summary of planned actions over the planning period.
Chapter 1 - Regional Structure and Coordination	
1.1 - Regional Description and Formation	Description of the Region, including participating local governments; geographic context; evaluation of multi-county planning options and justification of the selected approach.
1.2 - Regional Board or Authority	MSW Board or authority composition, representation, and oversight responsibilities.
1.3 - Roles and Responsibilities	Roles of local governments and any Part 9 solid waste authority; coordination mechanisms among participating jurisdictions.
1.4 - Plan Adoption, Maintenance, and Recordkeeping	Procedures for plan adoption; plan maintenance through updates and APRs; recordkeeping practices for plan documents, approvals, and amendments.
Chapter 2 - Regional Profile and Growth	
2.1 - Regional Demographics	Population characteristics, density, spatial distribution, and socioeconomic conditions.
2.2 - Growth Trends and Projections	10-year population and development projections; economic and sector changes affecting waste generation; anticipated impacts on system needs.
Chapter 3 - Existing Solid Waste Management System	
3.1 - Waste Stream Characterization	Types and quantities of waste generated within the Region; generation by material type and sector; jurisdiction-level waste generation.
3.2 - Collection Systems	Collection methods and service models; populations and geographic areas served and unserved; collection assurance by waste stream.
3.3 - Transfer and Disposal Systems	Transfer stations, processing facilities, and disposal facilities serving the Region; permitted capacity, remaining life expectancy, and waste movement.

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Section	Description
Chapter 4 - Capacity Planning and Assurance (State Plan Objective 1)	
4.1 - Capacity Needs Assessment	Evaluation of current and projected disposal capacity needs.
4.2 - Capacity Assurance Strategy	Long-term disposal capacity provision, facility reliance, and capacity assurance methods.
4.3 - Alignment with State Plan Objective 1	Current capacity, projected demand, long-term risks, and mitigation strategy summary.
Chapter 5 - Recycling and Waste Reduction (State Plan Objectives 2 & 3)	
5.1 - Recycling and Materials Processing Infrastructure	Recycling programs, processing capacity, infrastructure gaps, and end-market availability.
5.2 - Organics Management and Diversion	Organics collection, processing, diversion strategies, and end-market considerations.
5.3 - Alignment with State Plan Objectives 2 and 3	System gaps, planned enhancements, market development strategies, diversion performance, and long-term system outcomes supporting Objectives 2 and 3.
Chapter 6 - Performance Metrics (State Plan Objective 4)	
6.1 - Data Collection and Metrics	Data collection, tracking, management systems, and performance evaluation metrics.
6.2 - Alignment with State Plan Objectives 4	Performance metrics, reporting methods, data gaps, and planned improvements.
Chapter 7 - HHW Management (State Plan Objective 5)	
7.1 - Problematic or Hard-to-Manage Wastes	Management of BOPAE, HHW, and other problematic or hard-to-manage waste streams; collection site coverage and statutory compliance.
7.2 - Alignment with State Plan Objective 5	Service gaps, improvement actions, and strategies to reduce improper disposal.
Chapter 8 - Disaster and Emergency Debris Management (State Plan Objective 6)	
8.1 - Disaster Debris Management Strategy, Coordination, and Planning	Management of debris from disasters or emergency events, and coordination with emergency management agencies
8.2 - Alignment with State Plan Objective 6	Confirmation of Regional Disaster Debris Management Plan; coordination alignment; rapid recovery and environmental protection.

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Section	Description
Chapter 9 - Education and Outreach (State Plan Objective 7)	
9.1 - Public Education Initiatives	Public-focused education and outreach initiatives; target audiences; accessibility considerations; gaps and planned improvements.
9.2 - Business and Industry Outreach	Education and outreach targeted to ICI generators; engagement methods; sector-specific needs.
9.3 - Alignment with State Plan Objective 7	Summary of education and outreach framework, messaging strategies, gaps, and strategic improvements.
Chapter 10 - Financial Management and Reporting (State Plan Objective 8)	
10.1 - Solid Waste Program Financial Accounting and Reporting	Full-cost accounting; revenue sources; cost recovery; compliance with uniform financial accounting and reporting requirements.
10.2 - Existing Funding Mechanisms	Current funding structures and funding stability considerations.
10.3 - Funding Gaps	Funding vulnerabilities, risks, and cost pressures.
10.4 - Alignment with State Plan Objective 8	Improvements for financial sustainability, cost recovery, efficiency, and coordination.
Chapter 11 - Implementation Plan	
11.1 - Implementation Schedule	Regional plan implementation timeline, phasing, prioritization, and progress tracking.
11.2 - Roles and Responsibilities for Implementation	Implementation responsibilities of participating jurisdictions, Regional entities, and supporting stakeholders.
Chapter 12 - Certification and Governance	Formal certification that the Regional Plan has been reviewed and approved by the appropriate authority, including the Part 9 Authority (if applicable) and/or county legislative bodies of all participating jurisdictions.

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ATTACHMENT B

Regional Plan Additional Guidance and Data Sources

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Attachment B: Regional Plan Additional Guidance and Data Sources

Required Content (Section 4)	Plan Section (Attachment A)	Resources / Guidance
Regional Structure and Coordination	**Chapter 1** - Regional Structure and Coordination	Use the 2035 Plan, Section 2 (Roles and Responsibilities for Implementation) and Section 3 (Existing Conditions) to guide discussion of Region formation, governance structure, and coordination mechanisms. • Describe the Region's planning structure, jurisdictional composition, and governance framework. • Describe the roles and responsibilities of participating local governments, Regional boards, and authorities consistent with statutory responsibilities. • Summarize Solid Waste Board or Authority composition, representation, and decision-making authority using Region-specific documentation (e.g., Board rosters, bylaws, interlocal agreements). • Identify any Part 9 Authority or interlocal entity relied upon and reference enabling documentation. • Describe the adoption and implementation of uniform reporting requirements consistent with statewide expectations. • Describe plan certification, amendment, revision, and enforcement processes.
Regional Profile and Growth	**Chapter 2** - Regional Profile and Growth	Use the 2035 Plan, Section 3 and Attachment A (Supplemental Data Tables) as the primary data sources. • Pull current population, population density, and projected growth data by county to ensure consistency with statewide assumptions. • Describe population and density trends over the 10-year period. • Summarize demographic, socioeconomic, housing, employment, age, language, and tourism characteristics relevant to waste generation and service needs, noting jurisdictional differences. • Describe past and anticipated economic, industrial, and tourism trends influencing solid waste generation. **Additional Resources:** U.S. Census Bureau - QuickFacts & Population Estimates/Projections Tennessee State Data Center (via UT / Boyd Center)
Existing Solid Waste Management System	**Chapter 3.1** - Waste Stream Characterization	Use Section 3, Attachment A, Appendix 1 (TDEC Waste Characterization Study), and the APR Dashboard to establish baseline waste generation assumptions. • Describe total waste generation using statewide per-capita assumptions scaled to the Regional population. • Use the APR data to verify jurisdiction-level tonnage and support disposal and diversion summaries. • Summarize waste composition by major material stream and sector using statewide characterization data, supplemented with APR and Solid Waste Origin Report (SWOR) data where available. • Describe overall material disposition pathways (e.g., landfill, recycling, composting, energy recovery) using APR data and conceptual waste flow descriptions. • Clearly document assumptions and limitations where Region-specific waste characterization data are not available. **Additional Resources:** To estimate the amount of waste generated, please refer to the (U.S. Environmental Protection Agency (EPA) National Overview: Facts and Figures on Materials, Wastes and Recycling, which estimates about 4.9 pounds per person per day.
Existing Solid Waste Management System	**Chapter 3.2** - Collection Systems	Use 2035 Plan Section 3, Attachment A, and the APR Dashboard to describe collection systems and service coverage. • Describe collection service types, geographic coverage, populations served and unserved, and waste streams managed by jurisdiction using local plans, ordinances, and contracts.

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Required Content (Section 4)	Plan Section (Attachment A)	Resources / Guidance
		• Identify service gaps and describe how collection assurance is maintained across the Region consistent with statutory requirements.
Existing Solid Waste Management System	**Chapter 3.3** - Transfer and Disposal Systems	Use 2035 Plan Sections 3, Attachment A, and the APR Dashboard to identify facilities serving the Region. • Verify facility name, location, classification, permit or registration status, jurisdictions served, and volumes handled using APR facility data and permitted facility records. • Use APR origin and destination data to document waste flows and reliance on in-Region versus out-of-Region facilities. • Ensure consistency across facility descriptions, summary tables, maps, and narrative discussions. **Additional Resources:** TDEC - SWM Permits Data
Capacity Planning and Assurance	**Chapter 4.1** - Capacity Needs Assessment	Use 2035 Plan Section 3, Attachment A, and the APR Dashboard to document current disposal capacity and facility life expectancy. • Identify landfills receiving Regional waste, including in-Region and out-of-Region facilities. • Summarize remaining permitted airspace and estimated remaining landfill life using APR or SWOR data, where available. • Briefly note any major constraints affecting landfill expansion or development. • Clearly document assumptions, data sources, and limitations associated with capacity estimates.
Capacity Planning and Assurance	**Chapter 4.2** - Capacity Assurance Strategy	Use Section 6 (Funding and Contract Mechanisms for Local Governments) and Section 7 (Financial Analysis) describe mechanisms used to ensure long-term disposal capacity. • Describe the primary agreements or arrangements relied upon to ensure continued landfill disposal capacity. • Identify key financial or policy mechanisms supporting long-term landfill capacity. • Summarize major risks to landfill availability over the planning period using statewide trends and modeling. • Briefly describe coordination among jurisdictions and landfill operators to maintain reliable access. • Document capacity assurance using available written confirmation (e.g., contracts, MOUs, or certified engineering analyses).
Recycling and Waste Reduction	**Chapter 5.1** - Recycling and Materials Processing Infrastructure	Use 2035 Plan Section 3, Attachment A, and the APR Dashboard to describe existing recycling infrastructure. • Identify and verify recycling programs, processing facilities, and service coverage using APR and local program documentation. • Summarize recycling performance trends and infrastructure availability across the Region. Use Section 5 (Review of Best Practices and Technologies) to reference relevant recycling and processing Best Management Practices (BMPs) and technologies. **Additional Resources:** EPA - Recycling Program EPA - National Recycling Strategy
Recycling and Waste Reduction	**Chapter 5.2** - Organics Management and Diversion	Use the 2035 Plan, Section 3 and the APR Dashboard to describe existing organics management activities and infrastructure.. • Identify food waste, yard waste, and other organics diversion programs currently operating in the Region Use Section 5 to reference organics management BMPs and technologies. **Additional Resources:** TDEC Organics & Composting Resources EPA - Sustainable Management of Food and Yard Waste

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Required Content (Section 4)	Plan Section (Attachment A)	Resources / Guidance
Performance Metrics	**Chapter 6.1** - Data Collection and Performance Metrics	Use the 2035 Plan, Section 3 to describe existing data sources, reporting systems, and performance tracking practices. • Describe participation in APR and SWOR reporting. • Identify data gaps, limitations, and consistency issues.
HHW Management	**Chapter 7.1** - Problematic or Hard-to-Manage Wastes	Use the 2035 Plan, Section 3 to describe existing programs and infrastructure for HHW, BOPAE, waste tires, electronics, and other problematic or hard-to-manage waste streams. • Describe collection methods, service coverage, and responsible entities. **Additional Resources:** TDEC Waste Tires, Batteries, and Special Waste TDEC HHW Program
Disaster and Emergency Debris Management	**Chapter 8.1** - Disaster Debris Management Strategy, Coordination, and Planning	Use the 2035 Plan, Section 3 to describe existing disaster debris planning requirements and Regional practices. • Confirm the existence of a DDMP as part of the Regional Plan. **Additional Resources:** TDEC Debris Management EPA - Disaster Debris Management Planning
Education and Outreach	**Chapter 9.1** - Public Education Initiatives	Describe existing public engagement and education efforts conducted within the Region. • Describe public education, outreach, and engagement activities aimed at residents, households, students, and the general public. • Identify the types of outreach used (e.g., public meetings, workshops, surveys, hearings, educational campaigns, school programs, websites, social media, printed materials). • Describe how outreach efforts address topics such as waste reduction, recycling, organics diversion, HHW, illegal dumping, and proper use of collection and disposal services. • Identify participating jurisdictions or partners (e.g., local governments, Keep Tennessee Beautiful affiliates, schools, nonprofits). • Describe coordination or alignment with statewide messaging or campaigns where applicable. • Document how public input or participation informs planning, program design, or implementation, where applicable.
Education and Outreach	**Chapter 9.2** - Business and Industry Outreach	Describe existing private-sector and institutional engagement efforts within the Region. • Describe engagement activities targeting private waste service providers, haulers, processors, landfill operators, recycling facilities, large commercial and institutional generators, and industry representatives. • Identify mechanisms used to engage the private sector, such as stakeholder meetings, advisory committees, surveys, workshops, consultations during plan development, or ongoing coordination forums. • Describe how private-sector input is used to inform infrastructure planning, service coordination, capacity assurance, data reporting, or program implementation. • Identify any formal or informal partnerships, advisory roles, or coordination structures involving the private sector. • Describe coordination with institutions such as hospitals, universities, large employers, or industrial generators, where applicable.
Financial Management and Reporting	**Chapter 10.1** - Solid Waste Program Costs, Revenues, and Cost Recovery	Use the 2035 Plan, Section 6 (Funding and Contract Mechanisms for Local Governments) to describe solid waste and recycling program costs, revenues, and cost recovery mechanisms.

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Required Content (Section 4)	Plan Section (Attachment A)	Resources / Guidance
		• Describe how solid waste and recycling programs are funded and administered at the local or Regional level, including user fees, tipping fees, taxes, host fees, enterprise funds, and other revenue sources. • Describe contractual arrangements or cost-sharing mechanisms used to recover costs across participating jurisdictions or service providers. Use Section 7 (Financial Analysis) to provide statewide financial context related to system costs, funding sustainability, and long-term economic pressures. Use the Economic Modeling Tool described in Section 8 (Recommendations, Diversion Metrics Reporting Update, and Economic Modeling Tool) to evaluate Regional program costs. • Use the tool to estimate current and projected system costs based on Regional service configuration, population, waste generation, diversion strategy, and infrastructure assumptions. • Use model outputs to compare alternative service scenarios, assess cost drivers, and evaluate the financial implications of proposed system changes or investments. • Clearly document assumptions, inputs, and limitations associated with use of the Economic Modeling Tool.
Financial Management and Reporting	**Chapter 10.2** - Existing Funding Mechanisms	Use the 2035 Plan, Section 6 to identify and describe existing funding and contracting mechanisms supporting solid waste management programs. • Describe local, Regional, state, federal, and private funding sources where applicable.
Financial Management and Reporting	**Chapter 10.3** - Funding Gaps	Use the 2035 Plan, Section 7 (Financial Analysis) to frame funding gaps, cost pressures, and long-term financial risks. • Describe anticipated funding gaps and constraints affecting program sustainability, service levels, or infrastructure investment.

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APPENDIX 3

TDEC Guidance Document

Preparation Guide for Higher Education Institution's Annual Source Reduction, Recycling and Waste Management Plan

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Department of Environment & Conservation

Preparation Guide for Higher Education Institution's Annual Source Reduction, Recycling and Waste Management Plan.

A 2025-2035 Statewide Integrated Solid Waste Management Plan Supplement

Division of Solid Waste Management
Materials Management Program
March 2026

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SWM-MM-G-# - Guidance for Preparing Higher Education Waste Management Plan – XXXXXX Standard Guidance (SOG) for the Development of Higher Education Annual Source Reduction, Recycling and Waste Management Plan.

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EFFECTIVE DATE: ----------2026

SIGNATURES:

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Drafter / Preparer

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Amber Greene, Program Administrator
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Reviewer

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1. INSTRUCTIONS

In accordance with Tennessee Code Annotated § 49-7-121, titled Annual Source Reduction, Recycling and Waste Management Plan, each institution governed by the board of regents of the state university and community college system and the University of Tennessee board of trustees shall develop an annual source reduction, recycling and waste management plan consistent with the state solid waste plan.

The Department of Environment and Conservation (TDEC) prepared this guidance document to assist institutions in the preparation of these plans. The Solid Waste Management Act of 1991 and its amendments do not require institutions to submit their plans to TDEC for approval, but Tennessee Code Annotated § 49-7-121 requires those plans to align, to be consistent, and to support the general implementation of the 2025-2035 Statewide Integrated Solid Waste Management Plan. TDEC is available to provide technical assistance if needed in the plan preparation.

Institutions should align their waste management plans using the same general format in the following sections, provided they include all Planning Objectives, even if the institution identifies no applicable strategies. Where appropriate, the document provides examples to assist in generating ideas or to serve as a guide to structure. The institution may include additional information deemed important above and beyond this structure to better meet the organization's needs.

The institution only needs to prepare one plan even if the institution operates multiple campuses, provided the institution identifies each campus and addresses items appropriately for those other campuses.

When the institution's plan is complete, a review process determined by the institution should examine content and feasibility of implementation. Once satisfied with the document, the institution should adopt and post a digital copy on its website for public review.

If prepared properly, one plan can serve as the institution's annual plan with minor updates and revisions for new strategies or updated measures throughout the State's plan horizon.

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2. INTRODUCTION

This guide will provide a general framework for institutions of higher learning to prepare a plan for source reduction, recycling, and waste management based upon the adopted 2025-2035 Statewide Integrated Solid Waste Management Plan (2035 Plan). As with any plan, the effectiveness is only as good as the preparation and implementation. TDEC encourages institutions to consider thoughtful strategies to reduce waste and support circular economies while safeguarding valuable airspace at municipal solid waste (MSW) landfills.



The waste management plan will have sections for administration and demographics, objectives and strategies, and plan implementation. Each section provides important information needed to effectively achieve the State's goal of waste reduction and resource conservation.

On the right, a summary of the State's planning objectives provides insight into the identified goals for the planning horizon. Plan writers should familiarize themselves and apply these principles to the development of the institution's plan for waste management. TDEC revised these objectives slightly under the Objectives and Strategies section to better align with institution needs.

While these principles may not directly align with the institution's operation model, each objective can apply to aspects of operations and promote waste reduction and resource conservation.

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3. ADMINISTRATION AND DEMOGRAPHICS

Administration and demographics identify key contacts, locations, and demographics that the institution will use in the identification of sources of generation and their material streams in subsequent plan sections.

It is good to provide an Executive Summary at the beginning of the institution's plan pointing out key objectives and strategies the institution will use to implement the plan.

3.1 Administration

Include the following within the administrative section of the plan.

1. Identify key policy maker officials that manage areas of plan governance. Examples would include institution presidents, key leadership, facility or plant managers, and solid waste managers. The plan can present this as an organization chart, a table, photos with bios, or what best represents the institution's branding. Contact information is optional.
2. Identify known and prospective stakeholders, partners, and their key contacts. Include waste collection and management services, food services, food pantries, compost or mulch production, and organizational units that may use waste products such as compost or mulch.
3. TDEC recommends that the institution list or store any solid waste management contracts, including recycling and organics management, in one location for quick reference and review. The individual contract information does not need inclusion in this plan, but its quick reference would aid in plan implementation.

3.2 Demographic

1. Provide a general demographic profile of the institution's student, administrative, and teaching populations. Profile would include, at a minimum, each's population number as these populations affect waste generation. Identification of cultural dimensions can aid in messaging development.
2. Broadly describe the institution in general and geographical terms. Include the number of campuses and buildings used.
3. Classify and include a map for each campus identifying key Activity Zones – Administration, Student Housing, Student Housing with Food Service, Greek Housing, Academic, Academic with Labs, Multi-activity, and Special Use. Each of these activity zones produces different types of waste and in different quantities that will need management.

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4. OBJECTIVES AND STRATEGIES

The State's 2035 Plan identifies eight key objectives to focus attention during the planning window. As an institution of higher learning focusing efforts on these key objectives will aid the state in achieving its goals of waste reduction and resource conservation. Each of the following objectives will have the structure of a brief description and then an abridged list of actions and strategies for consideration. The document adapts the Objective descriptions presented in the Objective Summary to an institutional perspective to aid in application. Each institution is not bound by the presented list of objective options. Additional options not listed are perfectly acceptable as well as bypassing an objective that does not align with the institution's waste management approaches at this current time but may in the future. Some strategy options may apply to more than one objective.

In the end, the objectives and identified strategies should work to reduce waste and protect resources. Consider the preferred waste management hierarchy pictured above when selecting strategies.

Best planning attitude would suggest prioritizing identified approaches by expected impact (High, Medium, Low). List the strategy and applicable activity zones that may apply and locate in the implementation section of the plan.



4.1 Objective 1: Protect Disposal Capacity

Regularly assess and plan for the institution's disposal needs, ensuring safe operations and environmental monitoring to support a sustainable system.

Strategies for consideration:

- Conduct a waste audit across the institution or campus to identify the amounts and types of waste generated. Smaller scale audits would sample by activity zones. The benefit helps identify materials and volumes that the institution can redirect to less costly and more circular options.
- Establish or expand diversion programs (reuse, reclaim, repurpose, recycle, compost, and mulch preparation type opportunities).
- Re-evaluate waste management contracts. Look for opportunities to expand diversion programs and increase monitoring granularity. Review collection frequency and how providers address peak loading (sports events and student move days).
- Establish a protocol for project managers to re-purpose, reuse, and salvage fixtures and furnishings during construction and retrofits.

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- Establish contracts for furniture surplus and donation outlets to channel items not needed on campus to others in the nearby host community.
- Create a mechanism for custodial staff to communicate inconsistencies in placement and types of bin infrastructure.
- Develop a plan to support the establishment of a surplus operation on campus.
- Formalize pallet and scrap wood source-separated collection.
- Include carpet recycling as a performance metric for contractors.
- Post a comprehensive disposal guide on sustainability website for everyday items.

4.2 Objective 2: Expand Infrastructure and Markets

Close infrastructure gaps and strengthen markets for recovered materials through investment in public-private collaboration.

Strategies for consideration:

- Create a standardized inventory list for recycling and refuse bin infrastructure.
- Provide recycling options alongside all garbage disposal locations across campus. Pair recycling receptacles with each garbage receptacle, especially at sporting event venues and high trafficked areas to create opportunities for recycling.
- Establish or expand a virtual system as an intermediate solution for relinquishing, trading, browsing, and claiming unused, unwanted, surplus, or bulk items. Include a public-facing system for inventory which the institution can designate for donation to external charities and/or sold to private individuals.
- Create a mechanism for custodial staff to communicate inconsistencies in bin infrastructure.
- Conduct bin audits to ensure standardized bins and signage across campus.
- Create a bin placement framework that custodial staff can implement.
- Revise event reservation and catering forms to include sustainable options and Zero Waste event guide.
- Prepare and share a “common suite” of recyclable materials the institution can recycle and then align purchasing to support the suite.
- Use compost from institution’s organic waste to support horticulture and agriculture at campus facilities.

4.3 Objective 3: Divert Organic Waste

Regularly assess and plan for organic waste needs, ensuring safe operations and environmental monitoring to support a sustainable system.

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Strategies for consideration:

- Include compost bins with refuse and recycling bins in public food service areas and at catered events.
- Include compost bins in staff kitchenettes and break areas.
- Offer composting to Greek housing and residence halls.
- Pilot composting of front-of-house food scraps from food service operations.
- Initiate a food pantry for the food insecure student populations.
- Increase efficiency of food rescue in retail, student dining, and catering.
- Include sawdust from woodshops and animal bedding in composting.
- Initiate a campus composting or mulch operation. Use products on campus.
- Collaborate with host community on joint food pantries and food rescue opportunities.

4.4 Objective 4: Improve Goals & Data Systems

Set clear targets and modernize data collection to enhance tracking, transparency, and strategic planning.

Strategies for consideration:

- Maintain granular records on disposal and diversion weights.
- Establish normalized metrics to include per capita diversion and generation rate. Track by quarter, semester, or annual periods year over year.
- Audit procurement practices within individual departments to identify opportunities to reduce waste.
- Conduct waste audits by key activity area and track.
- Conduct planned comprehensive waste audits across campus(es).
- Establish formal waste diversion, waste reduction, or targeted goals.
- Use of point-of-sale systems in dining halls to track discounts given for reusable mugs. Use data to quantify impacts (costs, waste diverted, etc.) and post publicly to motivate community/encourage participation.
- Adopt Zero Waste initiatives or incorporate principles in decision processes.
- Track and report food losses and reductions in all dining facilities.
- Revise event reservation and catering forms to include sustainable options and Zero Waste event guide.
- Formalize tracking of tonnage of waste resulting from contracted C&D.
- Track waste generation in ENERGY STAR Portfolio Manager® (https://www.energystar.gov/buildings/benchmark).
- Initiate a College and University Recycling Coalition chapter (https://www.facebook.com/CURCRecycling/).

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- Participate in Campus Race to Zero Waste (https://campusracetozerowaste.org/).
- Engage the institution's Supply Chain Management program or similar classes to optimize materials management and return phase operations.
- Create guidelines for waste handling that address solid, universal, hazardous, and electronic waste.

4.5 Objective 5: Handle Problematic Waste

Provide guidance and promote technologies for managing hazardous and hard-to-process materials, while preventing illegal dumping.

Strategies for consideration:

- Audit procurement practices within individual departments to identify opportunities to reduce waste.
- Review laboratory procurement and on shelf inventory on a reoccurring basis. Reduce procurement to meet a just in time demand need without large quantity inventories and storage periods.
- Start a salvage exchange or communal share pantry for common household cleaners at apartment style living areas.
- When deploying solar panels, consider and plan for end-of-life waste management.
- Review laboratory waste streams. Identify candidate materials for diversion and establish options and opportunities to divert these materials.
- Recycle lab water purification cartridges through manufacture take-back programs.
- Establish chemical inventory/sharing system for surplus chemicals.

4.6 Objective 6: Plan for Disaster Debris

Ensure a plan to coordinate with local governments and include debris management in emergency plans for effective disaster response.

Strategies for consideration:

- Meet with host community emergency management agency officials and prepare pre-event coordination and mutual aid preparation plans for debris management.
- Identify and seek pre-event approval for disaster generated debris staging areas.
- Identify expected material streams (construction and demolition, yard trimmings and land clearing wastes, household hazardous type wastes, etc.) and best management practice for each.
- Set diversion goals for cleanup. Leverage institution's composting and mulching infrastructure.
- If applicable, consider animal mortality management options.
- Set and conduct annually a tabletop disaster debris management event walk through.

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- Set and conduct a campus wide disaster training event annually. Identify expected points of debris generation based on scenario and response.

4.7 Objective 7: Expand Education and Outreach

Raise the campus community awareness about waste reduction, recycling, and funding mechanisms for solid waste services.

Strategies for consideration:

- Maximize recycling access options and exposure at sporting events and other peak events such as concerts.
- Develop a campus-wide outreach campaign to increase recycling literacy.
- Develop a directed outreach campaign to administrative and academic buildings to improve paper and plastic container recycling.
- Increase awareness and usage of reusable serving ware by the campus community and event hosts.
- Partner with adjacent or host communities on signage, specialty wastes, surplus, and green waste strategies.
- Develop training protocols with custodial service providers for ongoing engagement of custodial staff in diversion efforts.
- Revise event reservation and catering forms to include sustainable options and Zero Waste event guide.
- Develop student projects or competitions that promote reuse of materials generated on campus.
- Provide sustainable residential living training sessions during America Recycles Week.
- Send move-in/move-out recycling and waste reduction strategies to students prior to move-in/move-out day.
- Create recycling guide for laboratories.

4.8 Objective 8: Fund MSW Programs

Promote sustainable funding for solid waste programs through grants, guidance, and financial responsibility for facility operations and closure.

Strategies for consideration:

- Consider methods of tying behaviors to the cost of solid waste and materials management.
- Set micro-community fees to recycling or disposal performance for residence halls or other living facilities, e.g., best performing community has lowest disposal fees or base fees on tiered performance. The approach would require material tracking at the building or activity area level.

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- Apply for grants that support recycling and other diversion activities.
- Ensure activity fees support recycling and diversion efforts.
- “Right-size” procurement to purchase only for the needed materials with little extra.
- Promote and require minimum recycled content procurement.
- Promote “leave no trace” events where attendees take back with them any materials bought.
- Track collection, transfer, recycling, and disposal costs using a full cost accounting approach.

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5. IMPLEMENTATION

Once the institution identifies preferred strategies, the hard part begins…implementation. Best practices would suggest prioritizing strategies. When prioritizing strategies, consider how costs, implementation difficulty, key activity areas, repeatability, or other factors can affect successful deployment.

At a minimum describe each strategy using a "S.M.A.R.T." goal description approach. S.M.A.R.T. stands for Specific, Measurable, Achievable, Relevant, and Time Bound. This approach helps to communicate expectations and aids in accomplishment.

Specifically state what the strategy will do and what success looks like. State how this success will be determined and how the institution measures that success. Consider if the strategy is achievable, aspirational, or unrealistic. Review the strategy and determine if it is relevant to the 2035 Plan, the institution's overall goals, or are unrelated to either. Lastly, establish responsibility with implementation start and ending times.

Look to implement high impact strategies at high volume activities to strengthen messaging while diverting larger amounts of materials. These activities would include sporting events and supporting venues, concerts, conferences, catered events, and student move in and move out activities.

Engage the institution's community organizations – Greek, intramurals, special interest groups, and even professional groups within the various departments. Use these organizations to help implement through direct participation or as an opportunity to educate and share vision.

Use a table format similar to the following to aid in the sharing of the institution's plan.

Impact (High, Medium, Low)	*Supporting Objective Number (1-8)*	*Strategy*	*Activity Zone(s)*	*Implementation Start*	*End Implementation*	*Responsibility*
Example: Medium	8	*Apply for grants that support recycling and other diversion activities.*	*Ad, SH, SHU, MA, SU*	*Fall 2026*	*Spring 2028*	*Physical Plant, Sustainability Manager*

Activity Zones – Administration (Ad), Student Housing (SH), Student Housing with Food Service (SHF), Greek Housing (GH), Academic (Ac), Academic with Labs (AcL), Multi-activity (MA), and Special Use (SU).

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