



**Comprehensive Litter Review:
Strengthening and Coordinating
Efforts to Reduce Litter
and Illegal Dumping**



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January 26, 2023

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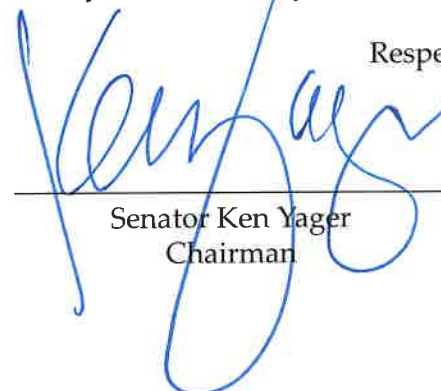
The Honorable Cameron Sexton
Speaker of the House of Representatives

Members of the General Assembly
State Capitol
Nashville, TN 37243

Ladies and Gentlemen:

Transmitted herewith is the Commission's report on its study of the ongoing challenges of litter and illegal dumping in the state as directed by the Commission. The report recommends that cities that need additional funding to deal with litter should apply for special litter grants offered by the Tennessee Department of Transportation's Highway Beautification Office, and a litter task force should gather data and assess the needs of cities across the state and help them connect with funding opportunities. To help communities find resources and solutions, the Commission recommends the Highway Beautification Office and Keep Tennessee Beautiful collaborate to create an online toolkit with resources for local governments. To improve enforcement of litter laws, the state should support and facilitate more litter law enforcement training, and state and local governments should consider focused enforcement of tarping laws in problem areas. To provide coordinated support on an ongoing basis, the state should create a permanent litter task force that includes diverse stakeholders to help implement strategies in communities. And this group should consider developing and implementing a statewide action plan. Finally, the Commission continues to recommend the state implement the recommendations made in TACIR's 2020 waste tire report. The Commission approved the report on January 26, 2023, and it is hereby submitted for your consideration.

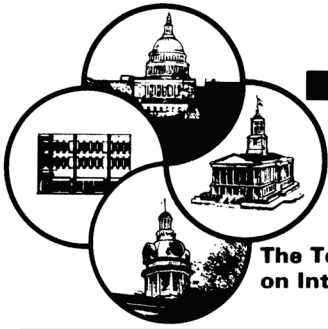
Respectfully yours,



Senator Ken Yager
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MEMORANDUM

TO: Commission Members

FROM: Cliff Lippard
Executive Director

DATE: 26 January 2023

SUBJECT: Comprehensive Litter Review—Final Report for Approval

The attached Commission report is submitted for your approval. It was prepared in response to direction from the Commission at its June 2021 meeting to conduct a comprehensive study of litter and illegal dumping in Tennessee to include research on the effects of littering and illegal waste dumping on the environment, economy, and overall quality of life in the state. The Commission clarified that the study would not focus on a bottle deposit or plastic bags because the General Assembly has already considered those issues.

Staff added information to the report that was requested by members at the last meeting. In response to a request from Senator Lundberg, staff added language that TDOT Highway Beautification Office staff said they will review the special litter grant application to find ways to simplify it and help municipalities apply for the grant. TACIR staff also clarified in the report that Senate Bill 2344 by Senator Yager was assigned to the General Subcommittee of the Senate Energy, Agriculture, and Natural Resources Committee, and House Bill 2381 by Representative Parkinson failed in the House Agriculture and Natural Resources Subcommittee. These bills would have implemented the recommendations in TACIR's 2020 waste tire report, but the bills didn't pass.

The report's recommendations remain unchanged from the draft report:

- **Therefore, the Commission recommends cities that need additional funding to deal with litter apply for special litter grants. Further, a permanent statewide litter task force, as recommended by this report, should gather data and assess**

the needs of cities across the state and help them connect with funding opportunities, such as the special litter grants.

- To help communities find resources and solutions, the Commission recommends the Beautification Office and Keep Tennessee Beautiful collaborate to create an online toolkit with resources for local governments based on best practices.
- To improve enforcement of litter laws, the Commission recommends the state support and facilitate more litter law enforcement training for law enforcement officers, prosecutors, and judges. And it recommends state and local governments consider focused enforcement of tarping laws in problem areas, such as roads that lead to landfills and convenience centers.
- To provide coordinated support on an ongoing basis, the Commission recommends the state create a permanent litter task force that includes diverse stakeholders to help implement strategies in communities across the state. And it recommends this group consider developing and implementing a statewide action plan, like Pennsylvania's.
- The Commission continues to recommend the state implement the other recommendations made in TACIR's 2020 waste tire report.

Comprehensive Litter Review: Strengthening and Coordinating Efforts to Reduce Litter and Illegal Dumping

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Summary and Recommendations: Reducing Litter and Illegal Dumping Using Multiple Strategies and Coordination

Litter and illegal dumping continue to be a major concern identified by Tennessee local officials because of their negative effect on the environment, economy, and quality of life in the state. Some of the biggest challenges that communities face include litter strewn along roads and waterways, litter-contaminated crops, littered neighborhoods, and illegal dump sites. Although state-level data show a reduction in the sheer number of pieces of litter on roadsides, an estimated 100 million pieces of litter remain—roughly 1,178 litter items per road mile. Because of these ongoing issues, in June 2021, the Commission directed staff to conduct a comprehensive study of litter and illegal dumping in Tennessee and clarified that the study would not focus on a bottle deposit or plastic bags because the General Assembly has already considered those issues.

National experts agree on several best practices to address litter issues. These best practices fall into a few broad categories including data collection for measuring the scope of the problem, clean-up of existing litter and dump sites, enforcement of litter laws, and education—including advertising campaigns. Experts also agree that multiple approaches should be used concurrently. This is happening in Tennessee, where the state, local governments, and communities have been using best practices and working together to address litter and illegal dumping. The three main components of the state’s efforts are 1) the Tennessee Department of Transportation’s (TDOT) data collection, litter prevention, pickup, and education programs including Keep Tennessee Beautiful; 2) enforcement of the state’s criminal littering and covered load laws; and 3) the Solid Waste Management Act of 1991, which aims to increase recycling and reuse of materials in general and to improve the management of waste tires in particular.

TDOT’s litter prevention, pickup, and education programs are a core part of Tennessee’s efforts.

As part of its responsibility to maintain state roads in Tennessee, TDOT provides contracted litter pickup along roadways, and the agency’s Highway Beautification Office manages litter prevention, pickup, and education programs. In fiscal year 2022-23, TDOT budgeted about \$23.2 million on these activities collectively. Programs include litter grants, the Adopt-A-Highway program, the Nobody Trashes Tennessee campaign, the litter hotline, and Keep Tennessee Beautiful:

- Litter grant program: Based on a formula, funding is allocated to each county in the state every year as reimbursable grants.

Tennessee state government, local governments, and communities have been using best practices and working together to address litter and illegal dumping.

Although Tennessee’s litter prevention, pickup, and education programs are considered best practices and key to addressing litter, they could be improved and strengthened.

Counties are required to spend the funding on litter prevention and education activities.

- **Adopt-A-Highway:** Groups of volunteers help with litter in their community by committing to clean up a two-mile stretch of road approved by TDOT.
- **Nobody Trashes Tennessee:** The state raises awareness and advertises the message of litter prevention with its statewide education campaign.
- **Litter hotline:** The state manages a system that gives people a way to anonymously report the Tennessee license plate number of the vehicle from which a person was littering. TDOT sends educational materials to the reported litterers.
- **Keep Tennessee Beautiful:** Tennessee’s Keep America Beautiful affiliate receives litter grant funding to provide resources and expertise in litter prevention education, law enforcement, and community engagement for the state.

Although these programs are considered best practices and key to addressing litter, based on the literature, surveys of local officials, and interviews with stakeholders, they could be improved and strengthened.

Litter Grant Program

Since 1983, the state litter grant program has provided funding to all 95 counties for local litter pickup operations and to enhance litter prevention and education resources across the state. Since fiscal year 2017-18, a total of \$5.5 million was budgeted for the program each year, with funding allocated to each county based on a formula. Counties are reimbursed for expenses and can spend the funds on litter prevention; cleaning up litter on roadways, waterways, and in other public spaces; and recycling activities. They are required to spend a portion on education activities—at least 20% of their total grant as determined by a formula.

For various reasons, some counties don’t spend their full grant allocation each year. Between fiscal years 2016-17 and 2020-21, 34 counties left an average of 15% or more of their funding unspent. Limited staffing and challenges with recruiting inmates, volunteers, and paid workers to pick up litter are common for counties, and the COVID-19 pandemic decreased litter grant activities. Any litter grant funds that are not spent remain in the TDOT litter grant fund and carry over each year. The Beautification Office uses a portion of these remaining funds to offer special litter grants every few years. These are competitive grants that are open to cities, counties, and nonprofit organizations to support community-based litter cleanup, abatement, and recycling programs such as litter law training, enforcement, and education about the effect of litter on water quality.

Some stakeholders have said cities, in addition to counties, should directly receive grant funds for litter prevention. Counties are not required to share litter grant funds with cities, but some work with cities to pick up litter inside city limits. In a 2022 TACIR survey of cities, 26 of 84 respondents (31%) said they needed more funding to address litter (there are 345 cities statewide). In the same survey, 106 of 114 (93%) respondents said litter and illegal dumping are a problem, and half of those said it is a big problem. Cities are eligible for special litter grants to help with their litter prevention efforts, but Beautification Office staff say that, in general, city leaders don't seem to be aware of the existing opportunity to receive these funds. In fact, not many apply—in the most recent grant cycle, out of 42 applicants, eight (19%) were cities and out of 15 entities that received grants, four (27%) were cities. Beautification Office staff said they will review the special litter grant application process and look for ways to simplify and improve the process to help more cities apply. **Therefore, the Commission recommends cities that need additional funding to deal with litter apply for special litter grants. Further, a permanent statewide litter task force, as recommended by this report, should gather data and assess the needs of cities across the state and help them connect with funding opportunities, such as the special litter grants.**

Keep Tennessee Beautiful

Tennessee's Keep America Beautiful (KAB) affiliate, Keep Tennessee Beautiful (KTnB), provides resources and expertise in litter prevention education, law enforcement, and community engagement. The program receives ongoing litter grant funding—\$1.6 million for fiscal year 2022-23—from the state to work with the 33 current local affiliates in 31 counties, recruit new affiliates, and conduct many education, training, cleanup, and outreach activities across the state. KTnB affiliates have access to some KAB resources that are not available to the general public, such as a community assessment tool to identify needs and priorities, but many other resources provided by KAB are online and accessible to anyone. For example, the *Waste in Place Leader Service and Project-based Learning* guide includes activities to engage youth and covers topics such as educating young people about litter, recycling, waste management, and landfills.

Some stakeholders have mentioned that they would like access to more tools. An easily accessible online toolkit would help communities find resources such as educational materials, enforcement and collaboration guides, model ordinances, litter action plans, and community engagement strategies. The state's litter hotline—a litter incident reporting system—could also be included in a toolkit. Beautification Office staff said they are working on a resource page at the "Nobody Trashes Tennessee" website, and KTnB staff is open to collaborating to make resources more accessible. **To help communities find resources and solutions, the Commission recommends the Beautification Office and Keep Tennessee**

Though cities are eligible for special litter grants, many don't apply.

Keep Tennessee Beautiful provides resources and expertise in litter prevention education, law enforcement, and community engagement.

Experts agree that education and training about litter laws is critical.

Beautiful collaborate to create an online toolkit with resources for local governments based on best practices.

Training and targeted enforcement of litter laws could be better facilitated.

Although in recent years Tennessee has increased fines for littering, stakeholders say the state’s litter law training is not part of the state’s Law Enforcement Training Academy curriculum nor part of the regular training that prosecutors or judges receive. Experts agree that education and training about litter laws is critical—it helps everyone understand the negative effects of littering and the importance of strategies for enforcing laws and prosecuting people who litter. To help improve litter law enforcement and education in the state, KTnB partnered with TDOT and the Tennessee Association of Chiefs of Police to pilot a law enforcement grant program in 2021 with several law enforcement agencies. Grant recipients were required to complete litter law training, and some of the activities conducted with grant funds included increased patrols in certain areas, the purchase of trail cameras to catch people in the act of dumping, and tarps for covering loads to prevent trash from falling out. KTnB considers the pilot program a success and plans to continue offering law enforcement grants each year.

Other states have challenges with enforcement and prosecution and are using different strategies to improve their situations. As in Tennessee, roads to landfills and convenience centers are often problem areas, where more enforcement could be beneficial. One strategy is to focus enforcement efforts on priority areas like Pennsylvania does with litter enforcement corridors—areas where enforcement is targeted, such as roadways with a lot of litter or dumping. Georgia enacted new litter laws in 2006 and does litter law enforcement training funded through Keep Georgia Beautiful. They have not tracked the effect of the program but receive positive feedback about it from participants and agency leaders. To identify enforcement solutions, Keep Pennsylvania Beautiful partnered with South Carolina’s litter prevention organization, Palmetto Pride, on a study of litter laws and enforcement. **To improve enforcement of litter laws, the Commission recommends the state support and facilitate more litter law enforcement training for law enforcement officers, prosecutors, and judges. And it recommends state and local governments consider focused enforcement of tarping laws in problem areas, such as roads that lead to landfills and convenience centers.**

Along with strengthening existing programs, more coordination of efforts across the state could help local governments manage litter in their communities.

While Tennessee already uses several best practices, stakeholders agree that enhanced statewide coordination would help communities and litter prevention efforts. Many state agencies, local governments, and nonprofit organizations are working to address litter across the state, and a statewide group could help coordinate efforts and assist local governments. For instance, a permanent group with diverse members could gather data and assess needs of communities across the state and connect them with resources and assistance to solve local problems such as illegal tire dumps. Both the University of Tennessee County Technical Assistance Service (CTAS) and Municipal Technical Advisory Service (MTAS) help local governments with specific issues, including litter and dumping, and representatives of both organizations support an ongoing statewide group like a litter task force. They said it would be beneficial for finding solutions involving multiple jurisdictions and entities. And, in 2022, Senate Bill 2693 by Senator Briggs and House Bill 2759 by Representative Faison—the CLEAN Act—proposed a state commission with several purposes, one of which would have been to “develop and implement a statewide litter program to comprehensively address litter prevention and reduction.” The bills didn’t pass.

A strategic litter action plan is another tool other states are using to help coordinate efforts. A few states have created a litter task force, developed a state litter action plan, or are in the process of doing so. In 2021, Pennsylvania completed its litter action plan, a collaborative effort between the state Department of Environmental Protection (DEP), Department of Transportation, and Keep Pennsylvania Beautiful; the DEP is now leading its implementation. The plan is based on litter research the state conducted and includes suggested actions for the legislature, state government, local governments, businesses, and individuals—everyone in the state is included and has a role to play. In 2015, South Carolina passed a law that created a permanent statewide litter commission to establish and implement a strategic plan to reduce litter, educate, and evaluate the effectiveness of programs. The South Carolina Commission reports to the state legislature every two years, and one of its initial accomplishments is the publication of a best practices guide in 2020 to help local communities direct more individuals sentenced to community service for littering into roadside cleanup. **To provide coordinated support on an ongoing basis, the Commission recommends the state create a permanent litter task force that includes diverse stakeholders to help implement strategies in communities across the state. And it recommends this group consider developing and implementing a statewide action plan, like Pennsylvania’s.**

Many of Tennessee’s state agencies, local governments, and nonprofit organizations are working to address litter across the state, and a statewide group could help coordinate efforts and assist local governments.

Waste tire dumping is a problem that is particularly challenging for counties and cities.

Solid waste management helps with proper disposal of waste tires and reduces litter and illegal dumping.

Waste tire dumping is a problem that is particularly challenging for counties and cities. Tire dumps are expensive to clean up, and local governments often don't have enough resources to clean up large dumps. Because litter is improperly disposed waste, how solid waste—including waste tires—is managed has a direct effect on litter and dumping. The Solid Waste Management Act of 1991 was established to reduce and minimize the need for solid waste treatment and disposal and took steps to better manage waste tires. The Act required each county to provide a location to receive and store waste tires. As a result of subsequent amendments to the Act, whole tires are banned from landfills, and counties must dispose of waste tires in a way that creates a beneficial end use unless the cost of doing so is more than the cost of shredding and disposing of tires in a landfill. The state collects a pre-disposal fee of \$1.35 per new tire sold, and from the fees collected counties receive \$1.00 per new tire sold by retailers within their jurisdiction to help manage waste tires in the county.

In its 2020 report *Closing Gaps in Tennessee's Waste Tire Program and Giving Local Governments More Flexibility to Prevent Illegal Tire Dumping*, the Commission recommended several improvements to further address continuing waste tire issues:

- To reduce tire dumping, the Commission suggests closing regulatory gaps with regards to dealers selling used tires and the contractors that haul waste tires for disposal.
- The report recommends expanding the state's existing fee on new tire sales to include sales of used tires, in order to better identify all sources of scrap tires and treat all businesses responsible for scrap tires equally.
- Given the notable hazards associated with illegally dumping tires, most states require tire haulers to obtain permits and require tire businesses to use only permitted waste tire haulers. The report recommends that Tennessee do the same, including proof of financial assurance as a condition of permit approval.
- The report recommends amending the law that currently restricts how counties can use tire pre-disposal fee revenue, which could help counties fund more efforts to proactively target illegal dumping, like increased business inspections, community outreach, or purchasing surveillance equipment.

Only one of the recommendations has been adopted. Public Chapter 746, Acts of 2022, implemented the Commission's recommendation to give local governments more flexibility by allowing "pre-disposal fee revenue to be used for disposing of shredded waste tires in landfills in certain

circumstances, where the beneficial end use is documented to be cost-prohibitive.” Before this law passed, revenue had to be used for beneficial end use and could “not be used for any other purposes,” such as shredding tires and disposing of them in landfills. Legislation introduced in 2022, Senate Bill 2344 by Senator Yager and House Bill 2381 by Representative Parkinson, would have implemented the report’s recommendations, but the bills didn’t pass. The Senate bill was assigned to the General Subcommittee of the Senate Energy, Agriculture, and Natural Resources Committee, and the House bill failed in the House Agriculture and Natural Resources Subcommittee. **The Commission continues to recommend the state implement the other recommendations made in TACIR’s 2020 waste tire report.**

Only one recommendation from the Commission’s 2020 report addressing waste tire issues has been adopted.

Tennessee's Litter Prevention Efforts Could be Strengthened and Coordinated

Litter is a problem not only in Tennessee but also nationwide, and states are using a variety of strategies to address it. A national litter study conducted by Keep America Beautiful (KAB), the leading national organization focused on litter prevention, estimated that there are 50 billion pieces of litter along US roadways and waterways, which is an average of 152 pieces of litter for every US resident.¹ The study found that the top three categories of litter on the nation's roadways were miscellaneous plastic (34.7%), cigarette butts (24.1%), and miscellaneous paper (18.3%). Although the 2020 KAB study found that litter has decreased nationwide by approximately 54% since its 2009 study, no state seems to have solved the litter problem. Even though experts view Tennessee as a state that has a comprehensive litter program using best practices,² litter remains a problem and more needs to be done.

Because of the ongoing challenges across the state, at its June 2021 meeting, the Commission directed staff to conduct a comprehensive study of litter and illegal dumping in Tennessee to include

- research on the effects of littering and illegal waste dumping on the environment, economy, and overall quality of life in the state;
- analysis of the current funding, costs, and convenience of properly disposing of solid waste in Tennessee;
- identification of best practices from Tennessee and a review of other states; and
- recommendations for changes warranted to reduce littering and its effects in Tennessee.

The Commission determined that the study would not focus on policies that impose deposits on bottles or bans on plastic bags because the General Assembly had already considered those issues. Public Chapter 158, Acts of 2019, prohibits local governments from regulating food or drink containers and plastic bags.³ As of March 2020, 10 states had container deposit programs,⁴ and as of February 2021, 10 cities in other states had plastic bag reduction programs.⁵

Even though experts view Tennessee as a state that has a comprehensive litter program using best practices, litter remains a problem and more needs to be done.

¹ Scott, Roof, and Elder 2021.

² Interviews with Cecile Carson, chief executive officer, Carson Consulting, February 2, and February 5, 2022.

³ Tennessee Code Annotated, Section 7-51-2002.

⁴ National Conference of State Legislatures 2020.

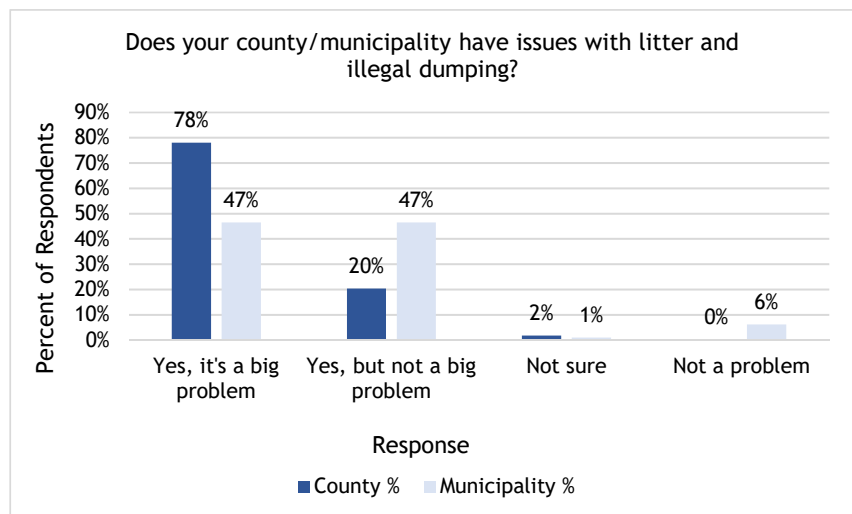
⁵ National Conference of State Legislatures 2021.

Litter and illegal dumping continue to be problems in Tennessee.

Local leaders and stakeholders across the state agree that litter and illegal dumping remain problems across the state. In 2022 TACIR surveys of cities and counties, 53 of 114 (47%) city respondents (there are 345 cities statewide) said litter and illegal dumping are a big problem, and another 53 (47%) said they are a problem but not a big one. Forty-six of 59 (78%) county respondents (there are 95 counties) said litter and illegal dumping are a big problem, and 12 county respondents (20%) said they are a problem but not a big one. Most city and county respondents said the problems have remained the same or gotten worse during the last five years.⁶ See figures 1 and 2. The issues vary between communities across the state—for example, some communities have more litter on the roadsides while others have more illegal dumping or issues specific to certain areas, such as on access roads to convenience centers and landfills. Some TACIR survey respondents mentioned negligent litter blowing out of uncovered vehicles, while others said people intentionally throw trash out of their vehicle or dump their trash. Many respondents commented that community pride is lacking, and people’s mindset needs to change to improve behavior and reduce littering and dumping. See appendix A for a summary of city and county survey results.

Litter issues vary between communities across the state—for example, some communities have more litter on the roadsides while others have more illegal dumping or issues specific to certain areas, such as on access roads to convenience centers and landfills.

Figure 1. Local Governments’ Assessment of the Litter Problem in Their Jurisdictions

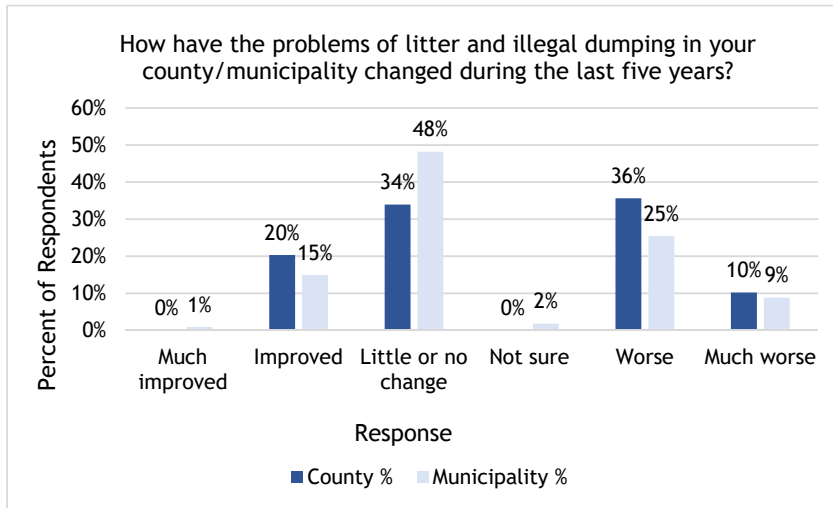


Note: 59 counties and 114 cities responded to the question.

Source: 2022 TACIR surveys of cities and counties.

⁶ 2022 TACIR surveys of cities and counties.

Figure 2. Local Governments’ Assessment of the Change in the Litter Problem in Their Jurisdictions



Note: 59 counties and 114 cities responded to the question.
 Source: 2022 TACIR surveys of cities and counties.

The Tennessee Department of Transportation’s (TDOT) 2016 statewide litter study estimated a total of 100 million pieces of litter on public roadsides—roughly 1,178 litter items per road mile.⁷ The purpose of the study was to “identify and determine significant relationships between the roadside litter and site characteristics, including physical attributes, nearby business and infrastructure prevalence, and socioeconomic variables of the surrounding area, in order to foster actionable policy findings that will strengthen litter prevention efforts.” The study found that between 2006 and 2016, visible litter on roadsides decreased by 23%, and total litter decreased by 53%. It was not a detailed study at the community level. Rather, it took a broad view of public roadsides based on a sample of 120 road segments including interstates, US and state highways, and local roads. It also did not include litter in public areas like parks or waterways or on private land, such as parking lots.

The amount and composition of the litter varies by type of roadway. The top three types of litter per mile on roadways in the state were vehicle debris (42%), miscellaneous paper (12%), and food and tobacco packaging (10%). Drink containers and bottles were approximately 5% of all roadside litter. Interstates have the most litter per mile, while local roads have the least litter per mile. Overall, the main type of litter on roads was debris from vehicles, while the top three litter types on local roads were miscellaneous paper (19%), food and tobacco packaging (17%), and miscellaneous plastic (16%). Drink containers and bottles were 8%. Based on the litter composition and its analysis, the study suggests several policy

⁷ nFront Consulting LLC 2016.

The Tennessee Department of Transportation’s (TDOT) 2016 statewide litter study estimated a total of 100 million pieces of litter on public roadsides—roughly 1,178 litter items per road mile.

The amount and composition of the litter varies by type of roadway.

The 2016 TDOT visible litter study estimated that 72% of litter on all roadways was negligent, rather than deliberate.

ideas, which are included in appendix B. TDOT is currently conducting another visible litter study, and the results will be available in early 2023.⁸

Litter is mismanaged waste, and littering can be deliberate or negligent. When the visible litter study was conducted in 2016, an estimated 72% of litter on all roadways was determined to be negligent, rather than deliberate (28%).⁹ Negligent litter is any litter that is not intentional, for example items and debris that blow out of receptacles and uncovered loads, waste that washes away in a flood, or items that people accidentally drop or forget to pick up. Negligent litter is estimated based on the assumed cause, such as vehicle debris, items that are assumed to have fallen out of uncovered loads, and nearby overflowing receptacles.¹⁰

In addition to litter, illegal dumping of waste tires continues to be an issue across the state according to local leaders and data collected by the Tennessee Department of Environment and Conservation (TDEC). Local leaders express concern about tire dumping in their communities and the challenges of dealing with the problem.¹¹ The Commission's 2020 report *Closing Gaps in Tennessee's Waste Tire Program and Giving Local Governments More Flexibility to Prevent Illegal Tire Dumping* addressed the issue of waste tires and illegal dumping and made several recommendations.¹² In 2022, Senate Bill 2344 by Senator Yager and House Bill 2381 by Representative Parkinson would have implemented the report's recommendations, but the bills didn't pass. However, Public Chapter 746, Acts of 2022, did implement one of the Commission's recommendations to give local governments more flexibility by allowing "pre-disposal fee revenue to be used for disposing of shredded waste tires in landfills in certain circumstances, where the beneficial end use is documented to be cost-prohibitive." The Commission report noted that over the last 10 years, "TDEC has received and investigated nearly 800 complaints of illegal dumping that included tires, with 89 of the state's 95 counties having at least one complaint reported. . . . In 2019 alone, the department received 101 complaints concerning tires and issued 49 notices of violation in 28 separate counties." For 2022, TDEC's Solid Waste Management Data Viewer shows 340 complaints of illegal dumping in 75 counties and 109 notices of violation issued in 45 counties; it shows 60 complaints about tires in 35 counties and 33 notices of violation issued in 21 counties.¹³

⁸ Email from Denise Baker, transportation program supervisor, Highway Beautification Office, TDOT, October 14, 2022.

⁹ nFront Consulting LLC 2016.

¹⁰ Scott, Roof, and Elder 2021; and nFront Consulting LLC 2016.

¹¹ Testimony by Kevin Brooks, mayor, City of Cleveland, Commission meeting, June 2022; interview with Mike Harrison, former executive director, Association of County Mayors, November 9, 2021; and 2022 TACIR surveys of cities and counties.

¹² Tennessee Advisory Commission on Intergovernmental Relations 2020.

¹³ Data retrieved January 4, 2023 from Tennessee Department of Environment and Conservation 2022b.

Litter and illegal dumping negatively affect the environment, economy, and overall quality of life.

There is abundant evidence and agreement that litter and illegal dumping damage the environment, economy, and quality of life, including health and safety.¹⁴ Waste that is improperly disposed in the environment pollutes soil, water, and air; contaminates crops; damages agricultural equipment; and can hurt livestock and wildlife.¹⁵ Whether dropped intentionally or unintentionally on public or private land, waste often ends up washing or blowing into waterways. Cigarette butts are one of the most common types of litter, and although they are small, they release toxic compounds that contaminate soil and groundwater.¹⁶ Plastic waste is also a particularly big problem because there is so much of it, and it biodegrades into tiny pieces, called microplastics, that pollute water and are ingested by wildlife and humans. This is a problem not only in oceans—recently such a large amount of microplastics was measured in the Tennessee River that it is now considered to be one of the most plastic-polluted rivers in the world.¹⁷

In addition to the large cost to state and local governments to clean up litter and dumpsites, littering adversely affects economic development and tourism. Researchers agree that litter can discourage economic development and tourism. Property values are more likely to decrease, and businesses lose money when litter is present.¹⁸ In a 2009 survey conducted by Keep America Beautiful, 93% of homeowners said a littered neighborhood would influence their decision to buy a property, and 36% of business development officials said that litter affects a business's decision to move to a community.¹⁹ A 2019 study conducted by the National Oceanic Atmospheric Administration found that in addition to the cost of cleanup, litter decreases recreation and tourism spending because people will spend less time in littered areas.²⁰ The study found that if litter was removed from beaches in Alabama, recreation would increase by 8.1%, an estimated \$10.1 million improvement, and conversely, if the amount of litter were doubled, the estimated annual decrease in recreational value would be \$32.3 million.

Quality of life—including human health, well-being, and safety—is also affected.²¹ Plastic pollution threatens marine systems globally, which also potentially affects humans around the world because of the loss of food

Waste that is improperly disposed in the environment pollutes soil, water, and air; contaminates crops; damages agricultural equipment; and can hurt livestock and wildlife.

In addition to the large cost to state and local governments to clean up litter and dumpsites, littering adversely affects economic development and tourism.

¹⁴ Scott, Roof, and Elder 2021; and Schultz et al. 2013.

¹⁵ Forbes 2009; US Environmental Protection Agency 2021; and interview with Kevin Hensley, director, Public Policy Division, Tennessee Farm Bureau Federation, August 31, 2022.

¹⁶ Novotny et al. 2009.

¹⁷ Capps 2019.

¹⁸ Karimi and Faghri 2021.

¹⁹ Keep America Beautiful 2009.

²⁰ English, Wagner, and Holmes 2019.

²¹ Schultz et al. 2013.

Research relates increased litter in an area to the level of crime and sense of well-being, and litter on roadways affects safety, leading to accidents.

“The conclusion [from litter research] is that a combination of education, enforcement, community engagement, and infrastructure is needed—for example trash cans, pocket ashtrays, and similar devices.”

Cecile Carson
former Keep America
Beautiful Vice President, Litter
and Affiliate Relations

security, jobs, income, and good health.²² Further, microplastics have been found in the blood and lungs of living people, although any health effects are not yet known.²³ Research also relates increased litter in an area to the level of crime and sense of well-being, and litter on roadways affects safety, leading to accidents.²⁴ Cleanup crews on roadsides are at risk of being hit, and litter and food items attract animals, increasing the chance of vehicles colliding with animals. According to the National Highway Traffic Safety Administration, in 2010 there were approximately 51,000 crashes involving collisions with non-fixed objects, such as items from unsecured loads, vehicle parts, or natural debris like tree limbs, resulting in 10,000 injuries and 440 fatalities.²⁵

Experts and research support several best practices for addressing litter and illegal dumping.

Keep America Beautiful (KAB), the leading national organization focused on litter, has been doing research and gathering litter data since the 1960s.²⁶ Researchers have found that there are no quick fixes to solve the problem—it could take a generation to change behavior—and solutions involve many strategies.²⁷ Although experts agree that there isn’t a state that has solved the litter problem, they also agree that there are best practices supported by research. A few examples of best practices include setting baselines for measuring litter reduction; consistent and ongoing messaging campaigns; litter law enforcement, training, and networking; adopt-a-highway programs and cleanup; youth engagement; and community awareness and engagement.²⁸ According to Cecile Carson, former KAB Vice President of Litter and Affiliate Relations, “The conclusion [from litter research] is that a combination of education, enforcement, community engagement, and infrastructure is needed—for example trash cans, pocket ashtrays, and similar devices.”²⁹

Research and experts agree that there is no “silver-bullet” solution. Rather, litter issues and solutions are multi-faceted and local.³⁰ Each community is different, and because many variables affect both litter problems and solutions, reducing litter needs to be approached with multiple strategies. For example, some areas might have issues with cigarette butts, commuter routes, or roads to landfills, while other areas are affected by litter from tourists, fast food restaurants, or convenience stores. Solutions for these issues will likely vary.

²² Beaumont et al. 2019.

²³ Leslie et al. 2022; and Jenner et al. 2022.

²⁴ Chaudhary, Polonsky, and McClaren 2021; Karimi and Faghri 2021; and Nelson 2001.

²⁵ US Government Accountability Office 2012.

²⁶ Scott, Roof, and Elder 2021.

²⁷ Karimi and Faghri 2021; and Schultz et al. 2013.

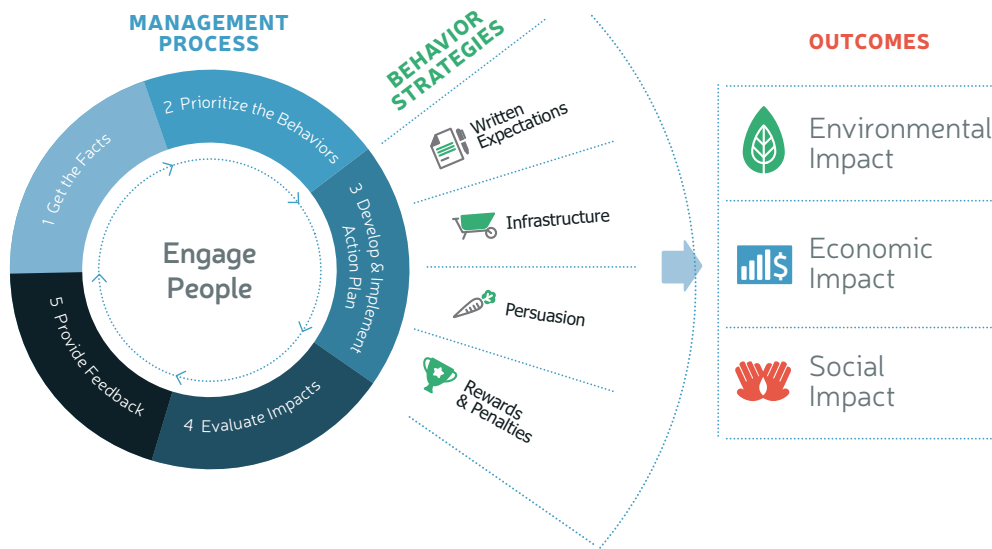
²⁸ Email from Cecile Carson, chief executive officer, Carson Consulting, July 11, 2022.

²⁹ Email from Cecile Carson, chief executive officer, Carson Consulting, June 21, 2022.

³⁰ Scott, Roof, and Elder 2021; and Spehr and Curnow 2015.

The authors of *Litterology: Understanding Littering and the Secrets to Clean Public Places* discuss various reasons people litter and recommend approaches to keeping places clean.³¹ They suggest collecting information by conducting a community assessment or survey to determine why people are littering, which informs the development of solutions targeted for that specific community. For example, before purchasing new recycling or cigarette disposal bins, make sure that is what the community needs. KAB's *2020 National Litter Study* recommends implementing a variety of solutions such as supporting cleanup efforts, updating a community toolkit, expanding waste infrastructure, educating decision-makers, and building coalitions.³² As part of their training, KAB affiliates conduct an initial community assessment to identify issues, and they complete an annual assessment to evaluate how the community is doing and what it needs to continue making progress.³³ Figure 3 illustrates KAB's step-by-step approach to changing individual behavior based on decades of research. It includes several strategies: written expectations, infrastructure, persuasion, and rewards and penalties. A 2009 study conducted by the National Academies of Sciences, Engineering, and Medicine also concluded that stakeholders need to use data to identify and implement multiple, targeted strategies.³⁴ Stakeholders in other states agree that multiple approaches are needed.³⁵

Figure 3. The Keep America Beautiful Model for Change



Source: Keep America Beautiful “Strategic Plan Themes”; and email from David Scott, senior director, research, monitoring & evaluation, Keep America Beautiful, August 8, 2022.

³¹ Spehr and Curnow 2015.

³² Scott, Roof, and Elder 2021.

³³ Interviews with Missy Marshall, executive director, Keep Tennessee Beautiful, July 21, 2021, and May 25, 2022.

³⁴ Forbes 2009.

³⁵ Interviews with David Scott, senior director, research, monitoring & evaluation, Keep America Beautiful, July 20, 2022; Shannon Reiter, president, Keep Pennsylvania Beautiful, February 14, 2022; Sarah Lyles, executive director, Palmetto Pride, February 17, 2022; and Natalie Johnston-Russell, executive director, Keep Georgia Beautiful Foundation, January 27, 2022.

The research supports the importance of education efforts to change littering behavior.

Research consistently shows that littered areas attract more littering.

The research also supports the importance of education efforts to change littering behavior. However, the effectiveness of education is difficult to measure and often not measured over the long term. Going back several decades, a 1977 study found that the most effective way to change people’s behavior is to give them targeted messages at specific times to take a certain action, such as picking up litter.³⁶ More recent research also emphasizes that behavior change is key to reducing litter, but it is not easy to change people’s behavior or measure whether efforts to do so are successful.³⁷ Education needs to include both training and public awareness and is more effective when it is service-oriented and experiential, which can be challenging to incorporate into programs like statewide campaigns.³⁸ Even so, the 2009 National Academies of Sciences, Engineering, and Medicine study concluded that to be most effective, advertising and education should “reflect a social norm that littering is not commonplace” rather than showing littered spaces and that it should be “attention-grabbing and memorable.”³⁹ The research also shows that young people litter more than older people,⁴⁰ and the literature and stakeholders agree that education and engagement of young people is critical—and younger people are more effectively reached with targeted messaging, such as social media.⁴¹

Research consistently shows that littered areas attract more littering.⁴² The presence of litter in a community communicates to people that it is acceptable to litter there. Therefore, even with education and efforts to change behavior, other strategies like cleanups and convenient receptacles are also necessary. The 1977 study concluded that litter begets littering,⁴³ and several decades later, the National Academies of Sciences, Engineering, and Medicine found in its 2009 study that “one of the primary tenets in litter prevention is that litter begets litter. Research has shown repeatedly that keeping an area litter-free will greatly reduce the incidence of new litter. This suggests that prevention and collection efforts need to be maintained or bolstered.” And to prevent littering, trash and recycling receptacles and other infrastructure are essential. People need a convenient place to put their trash, and in areas where receptacles are not convenient, people are more likely to litter.⁴⁴ However, even with receptacles nearby, one study found that 65% of smokers litter cigarette butts, concluding that “the most effective approach will utilize multi-pronged strategies that target both structural and personal variables.”⁴⁵

³⁶ Geller, Witmer, and Tusio 1977.

³⁷ Schultz et al. 2013; and Karimi and Faghri 2021.

³⁸ Keep America Beautiful 2018d; and interview with Cecile Carson, chief executive officer, Carson Consulting, July 5, 2022.

³⁹ Forbes 2009.

⁴⁰ Schultz et al. 2013.

⁴¹ Bator, Bryan, and Schultz 2011; and Keep America Beautiful 2018d.

⁴² Schultz et al. 2013; Forbes 2009; and Spehr and Curnow 2015.

⁴³ Geller, Witmer, and Tusio 1977.

⁴⁴ Bator, Bryan, and Schultz 2011.

⁴⁵ Schultz et al. 2013.

Stakeholders and research also agree that programs need to be consistent and coordinated. Starting with the programs that are in place and building on them over time, rather than stopping and starting new programs, reduces confusion and discouragement with programs and messaging that changes.⁴⁶ Consistent programs and messages are key to changing behavior and instilling new anti-littering habits for the long-term. In its *2020 National Litter Study*, KAB says that litter reductions are the result of “data-driven solutions that are consistently applied and systemically adopted across a wide range of communities in a coordinated manner.” And KAB’s 2018 *Collaboration Guide* emphasizes that various government and nongovernment entities need to work together on solutions.⁴⁷ The 2009 study by the National Academies of Sciences, Engineering, and Medicine concluded, “The case studies clearly support the need for a multi-stakeholder approach that uses solid research on the who, what, when, where, and why of roadside littering to select and implement multiple, targeted antilitter strategies.”⁴⁸

Washington is an example of a state that decided it had largely solved its litter problem, and in 2009, the state diverted program funding and ended several state laws and programs.⁴⁹ But in 2010, the state’s ecology department reported that litter had started to steadily increase. An effort to restart a litter program began in 2017, and the legislature funded the program in 2019. Partly delayed by the COVID-19 pandemic, the state launched a statewide education campaign in 2021 and is slowly rolling it out. Cecile Carson, former KAB Vice President of Litter and Affiliate Relations, said, “The challenge is that few litter programs address the need for public policy, education (all ages), intervention, rewards and penalties, and engagement on an ongoing or continuous basis. Tennessee is one of the states that has a consistent effort with multiple strategies in each of those areas.”⁵⁰

Although a lot of effort has been put into addressing litter in Tennessee, initiatives could be strengthened.

Tennessee has programs, laws, and policies in place to address and prevent litter and illegal dumping. Because the state has dedicated funding for a litter program and uses many best practices recommended by national litter experts, it is considered to have one of the most comprehensive state

Consistent and coordinated programs and messages are key to changing behavior and instilling new anti-littering habits for the long-term.

⁴⁶ Interview with Sarah Lyles, executive director, Palmetto Pride, February 17, 2022; and interview with and email from Cecile Carson, chief executive officer, Carson Consulting, July 5 and June 21, 2022.

⁴⁷ Keep America Beautiful 2018a.

⁴⁸ Forbes 2009.

⁴⁹ Smith et al. 2022; and emails from Cecile Carson, chief executive officer, Carson Consulting, June 21, and 23, 2022.

⁵⁰ Email from Cecile Carson, chief executive officer, Carson Consulting, July 13, 2022.

Even though Tennessee has a robust system, according to local officials and stakeholders, litter and illegal dumping are still problems.

In fiscal year 2022-23, TDOT allocated approximately \$23.2 million for its statewide litter pickup and prevention education activities.

litter programs.⁵¹ The three main components of the state’s efforts are 1) TDOT’s data collection, litter prevention, pickup, and education programs including Keep Tennessee Beautiful; 2) enforcement of the state’s criminal littering and covered load laws; and 3) the Solid Waste Management Act of 1991, which aims to increase recycling and reuse of materials in general and to improve the management of waste tires in particular. Although each of these components is intended to reduce waste, littering, and illegal dumping, they were established, have evolved, and are managed separately. Even though Tennessee has a robust system, according to local officials and stakeholders, litter and illegal dumping are still problems.

The state’s litter prevention, pickup, and education programs are comprehensive, but could be strengthened and expanded.

As part of its responsibility to maintain state roads in Tennessee, TDOT provides litter prevention, pickup, and education programs, in addition to contracted pickup along roadways. TDOT’s Highway Beautification Office manages the state’s litter programs including the litter grant program, Adopt-A-Highway, Nobody Trashes Tennessee, and the litter hotline. Keep Tennessee Beautiful (KTnB) provides expertise in litter prevention education, litter law enforcement, community enhancement through beautification, and volunteer recruitment and management.

Tennessee has dedicated funding for its state litter prevention, pickup, and education programs.

In fiscal year 2022-23, TDOT allocated approximately \$23.2 million for its statewide litter pickup and prevention education activities.⁵² See table 1. Of this amount, approximately \$11.4 million was for contracted litter pickup along roadways and \$1.1 million for pickup done by TDOT staff. Special litter programs, including Adopt-A-Highway, the litter hotline, and Nobody Trashes Tennessee, were allocated a total of \$3.1 million. The amount budgeted for Nobody Trashes Tennessee was increased from \$200,000 to \$3 million. The remaining \$7.6 million was allocated for the state’s litter grant program, which includes county grant allocations, KTnB, and grants to Clean Memphis and Keep the Tennessee River Beautiful.

⁵¹ Interviews with and email from Cecile Carson, chief executive officer, Carson Consulting, February 2, July 5, and July 13, 2022; and interview with Susan Russell, executive director, Keep Louisiana Beautiful, September 15, 2022.

⁵² Tennessee Department of Transportation 2022c.

Table 1. TDOT’s Litter-Related Activities and Expenses

Program	Activity	Amount (July 2020)	Amount (October 2022)	Percent Change
Contracted Pickup	Interstates & State Highways	\$ 8,345,285	\$ 9,537,525	14%
	Trustee Labor	73,429	77,207	5%
	Department of General Services	287,758	199,310	-31%
	County	814,355	1,202,027	48%
	Municipal	306,706	338,846	10%
In-House Pickup	TDOT Maintenance Spot Pickups	na	1,144,208	na
Grants & Education	Litter Grant	5,500,000	5,500,000	0
	Keep Tennessee Beautiful	1,321,009	1,639,315	24%
	Special Litter Grants	1,975,354	-	na
	Clean Memphis	-	300,000	na
	Keep the Tennessee River Beautiful	-	180,000	na
Special Litter Programs	Adopt-A-Highway	35,000	35,000	0
	Litter Hotline	70,000	60,000	-14%
	Nobody Trashes Tennessee	200,000	3,000,000	1400%
Total		\$ 18,928,896	\$ 23,213,439	23%

Note: Totals might not add because of rounding.

Source: Tennessee Department of Transportation 2022c.

Since 1981, the state’s litter prevention, pickup, and education programs have been funded by a portion of beer and soft drink (gross receipts) taxes.⁵³ The law that was passed established the amount of the tax that is designated for litter prevention and collection programs and “matters related to the programs.” TDOT must use the funds on efforts to prevent and remove litter, but it retains discretion on how to use the funds, and if the state or federal government passes a law to implement a container deposit program, the litter prevention funding is repealed.⁵⁴ Between fiscal years 2016-17 and 2020-21, the dedicated tax revenue averaged \$6.7 million each year.⁵⁵ The portion of the tax dedicated to litter programs has not changed since it was established; however legislation has been introduced to increase the portion—in 2020, Senate Bill 1900 by Senator Yager and House Bill 1957 by Representative Marsh would have roughly doubled the amount dedicated to litter programs. It wouldn’t have raised the tax but would have shifted a portion of the tax currently going to the state’s General Fund to litter programs instead. These bills didn’t pass. Table 2 summarizes funding mechanisms that states use for litter control.

TDOT must use the funds on efforts to prevent and remove litter, but it retains discretion on how to use the funds, and if the state or federal government passes a law to implement a container deposit program, the litter prevention funding is repealed.

⁵³ Tennessee Code Annotated, Sections 57-5-201 and 67-4-402.

⁵⁴ Tennessee Department of Transportation 2021; and Tennessee Code Annotated, Sections 57-5-201 and 67-4-402.

⁵⁵ Email from Mike McClanahan, outreach section manager, TDOT Highway Beautification Office, November 18, 2021.

Table 2. States' Funding Mechanisms for Litter Control

Type of Funding Mechanism	States
fee for specialty license plates	Arizona, Delaware, Louisiana, North Carolina
fee for license plate registration and renewals	Louisiana, New Mexico, West Virginia (required); Mississippi (optional)
fee for disposal of solid waste or certain materials	Alabama, Ohio
grants	Alaska, Georgia, Iowa, Louisiana
finest from violations of litter laws	Arkansas, California, Iowa, Kentucky, Maine, Maryland, Massachusetts, Mississippi, New Hampshire, New Jersey, New York, Oklahoma, Pennsylvania, South Carolina, Tennessee, Virginia, West Virginia
appropriation	Kentucky
nonrefundable bottle fee	Delaware
container deposits	California
tax or fee on manufacturers, wholesalers, or retailers of certain consumer products	Nebraska, New Jersey, Ohio, Rhode Island, Tennessee, Virginia, Washington

Note: Based on a review of states' statutes, 29 states including Tennessee have a funding mechanism for litter control.

Source: TACIR staff review of other states' statutes.

TDOT's Beautification Office allocates a portion of the dedicated litter funds for the state's litter grant program—offering funding to all 95 counties as litter grants each year for local pickup operations and to enhance litter prevention education resources across the state.

The state distributes funding directly to counties through the litter grant program.

TDOT's Beautification Office allocates a portion of the dedicated litter funds for the state's litter grant program—offering funding to all 95 counties as litter grants each year for local pickup operations and to enhance litter prevention education resources across the state. The amount reserved for each county is calculated using a formula based on population and road miles. It is not competitive, but each county must apply annually for the funds. Since fiscal year 2017-18, a total of \$5.5 million was budgeted for counties each year. Counties may use grant funds to pay for a variety of programs and activities to address litter and are reimbursed for expenses. Pickups, recycling, salaries, and equipment are examples of allowed expenses. The salary of a litter coordinator is also an allowed use.⁵⁶ Through the litter grants, since the program began in 1983, counties have removed an average of 11,243 tons of litter each year. The statewide average cost of litter grant pickup in 2021 was \$11.95 per mile.⁵⁷

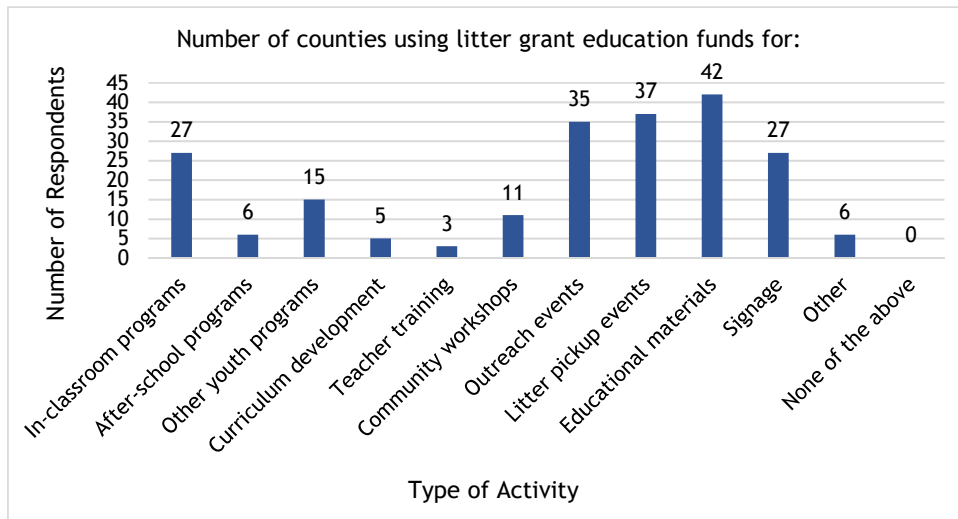
Because education is critical to solving the litter problem, the program requires counties to spend a portion of the litter grant on education activities.

⁵⁶ Tennessee Department of Transportation 2022b.

⁵⁷ Tennessee Department of Transportation 2022a.

Figure 4 shows the education activities counties conduct according to responses received in the 2022 TACIR survey. The percentage each county is required to spend on litter prevention education is determined by a formula—counties fall in one of four tiers and must budget at least 20%, 25%, 30%, or 35% of the total grant amount depending on the tier. Appendix C shows the percentage and associated amounts each county is required to spend on education activities.

Figure 4. Education Activities Conducted with Litter Grant Funds by Counties



Note: More than one response was allowed, and 53 counties responded to the question.

Source: 2022 TACIR survey of counties.

Each county conducts litter pickup and manages its litter grant differently. For example, litter grant funds can be used for pickup by inmates, volunteers, or paid workers.⁵⁸ Many sheriff’s departments manage litter pickup primarily with inmates, while other counties primarily recruit volunteers. Sheriffs’ and mayors’ offices and solid waste departments are the county agencies that most commonly receive the grant funds, but other entities can also receive and manage the grants, such as finance and highway departments and local KTnB affiliates. Counties can also partner with other nongovernment organizations or businesses. Table 3 shows the various entities in counties that receive and manage the litter grants as of fiscal year 2020-21. See appendix D for a list of agencies by county.

⁵⁸ Tennessee Code Annotated, Section 41-2-123.

Table 3. Entities that Receive County Litter Grant Funds

County Agency or Other Entity	Number of Counties*
Sheriff's Department	62
Mayor's Office	33
Solid Waste Department	31
KTnB Affiliate	15
Finance Department	11
Highway Department	4
Development District	4
Public Works Department	2
Emergency Management Agency	2

*The total number of counties is greater than 95 because 59 counties use more than one agency to administer their county litter grant. Of the 36 counties that use only one agency, the most common is the sheriff's department.

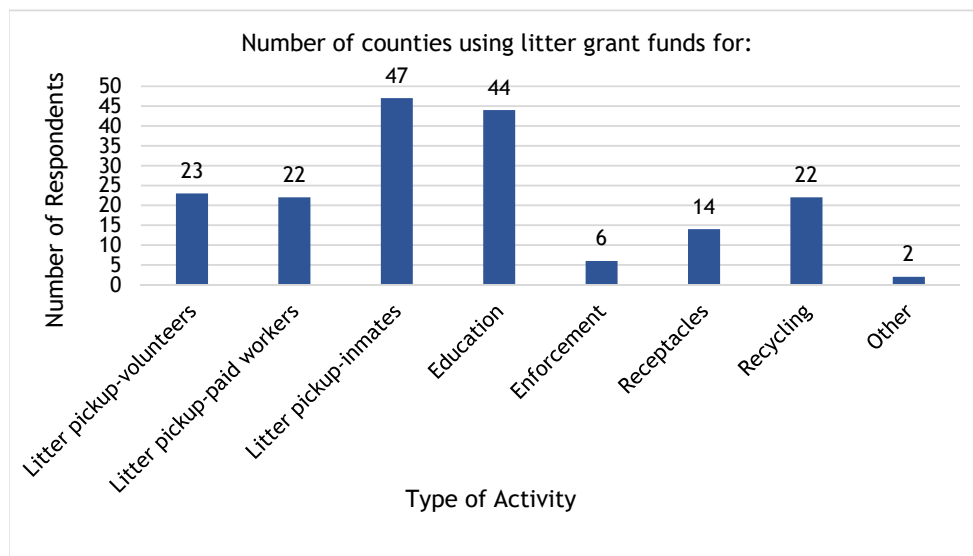
Source: Email received from Mike McClanahan, outreach section manager, Highway Beautification Office, TDOT, September 17, 2021.

Even with the existing spending flexibility, some stakeholders have mentioned that counties should have more flexibility with spending grant funds. Beautification Office staff said they are open to more spending flexibility for counties. They realize that counties have distinct issues and needs and want the counties to be able to use the funds in a way that best helps address problems in their communities. Litter is not only a problem on roadsides, but also in other public spaces such as parks, shorelines, and waterways. Public Chapter 903, Acts of 2022, added flexibility by clarifying that some litter funds can be used for special litter grants for roadway,

waterway, and shoreline litter reduction initiatives conducted by nonprofit organizations, local governments, and law enforcement agencies. Figure 5 shows activities that TACIR survey respondents conduct with their funds.

Some counties don't spend their full grant allocation each year. Table 4 shows budgeted and unspent funds by grant line item for all 95 counties combined for fiscal years 2016-17 through 2020-21, and appendix E includes

Figure 5. Activities Conducted with Litter Grant Funds by Counties



Note: More than one response was allowed, and 53 counties responded to the question.

Source: 2022 TACIR survey of counties.

data for each county. For those years, 34 counties left an average of 15% or more of their funding unspent. Counties didn’t spend a total of \$3.8 million—14.5% of the total amount reserved for them. There are a variety of reasons counties do not use all the allocated funds—challenges with recruiting inmates, volunteers, and paid workers to pick up litter are common, and the COVID-19 pandemic affected litter grant activities (see figure 6). Some stakeholders also mentioned that cleanup done by those convicted of driving under the influence (DUI) decreased because a 2016 change to the law removed the requirement for DUI offenders to do litter pickup as part of their community service.⁵⁹ Any litter grant funds that are not spent remain in the TDOT litter grant fund, carry over each year, and accumulate over time. They are used for litter prevention programs including Adopt-A-Highway, Nobody Trashes Tennessee, and special litter grants. See appendix E for allocated, spent, and unspent amounts by county for fiscal years 2016-17 through 2020-21.

**Table 4. Budgeted and Unspent Litter Grant Funds by Line Item
Fiscal Years 2016-17 through 2020-21**

Litter Grant Line Item	Budgeted	Unspent	Portion of Budgeted Amount that was Unspent
Salaries and Benefits	\$ 15,843,009	\$ 1,919,778	12.1%
Direct Costs (e.g. equipment and supplies)	2,749,403	813,966	29.6%
Education	7,901,588	1,113,927	14.1%
Total Grant Amount	\$ 26,494,000	\$ 3,847,671	14.5%

Note: Litter grant activities and spending decreased during the last two fiscal years because of the COVID-19 pandemic.

Source: Email received from Mike McClanahan, outreach section manager, Highway Beautification Office, TDOT, September 17, 2021.

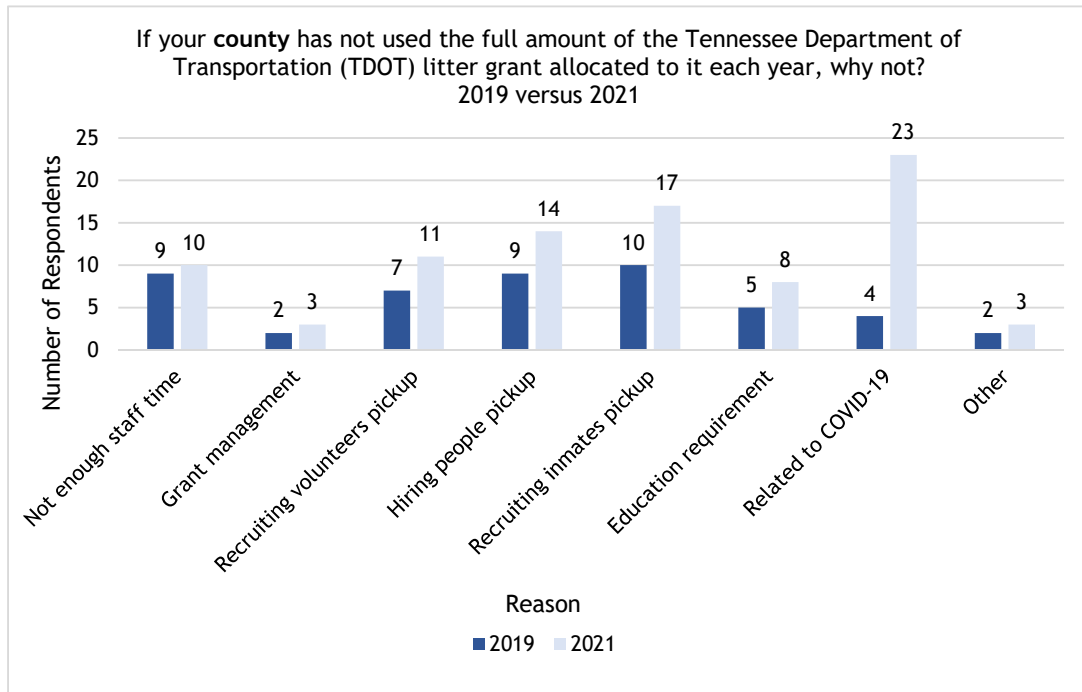
Every few years, TDOT distributes additional funds in the form of competitive grants—called special litter grants—for community-based projects that address litter and illegal dumping. Cities, counties, and nonprofit organizations can apply for special litter grants. The most recent round of competitive grants, which closed in December 2020, awarded \$1,975,354 to 15 recipients across the state for projects that began in 2018, ranging from improving litter and covered-load law enforcement to cleaning up streams and educating the public about the effects of litter on water quality.⁶⁰

Cities, counties, and nonprofit organizations can apply for special litter grants, which are competitive grants for community-based projects that address litter and illegal dumping.

⁵⁹ Tennessee Advisory Commission on Intergovernmental Relations 2020; and interviews with Kim Raia, environmental consultant, University of Tennessee County Technical Assistance Service, October 25, 2021; and Drew Thurman, solid waste director, Knox County Engineering and Public Works, January 12, 2022.

⁶⁰ Tennessee Department of Transportation 2021.

Figure 6. Reasons Some Counties Don't Spend All Their Litter Grant Funds



Note: More than one response was allowed, and 35 counties responded to the question.

Source: 2022 TACIR survey of counties.

Some stakeholders have said cities, not just counties, should directly receive grant funds for litter prevention. Counties are not required to share litter grant funds with cities, but some work with cities to pick up litter inside city limits.⁶¹ In the 2022 TACIR survey of cities, 106 of 114 respondents (93%) said litter and illegal dumping are a problem; half of those said it is a big problem (there are 345 cities statewide), and 26 of 84 respondents (31%) said they needed more funding to address litter. Cities are eligible to apply for special litter grants to help with their litter prevention efforts, but Beautification Office staff say that, in general, city leaders don't seem to be aware of the existing opportunity to receive these funds. In fact, not many apply—in the most recent grant cycle, out of 42 applicants, eight (19%) were cities, and out of 15 entities that received grants, four (27%) were cities.⁶² Currently, the special litter grant program is mainly promoted through several publications and the TDOT website and social media. The University of Tennessee County Technical Assistance Service (CTAS) and Municipal Technical Advisory Service (MTAS) also help spread the word. Beautification Office staff say more promotion and encouraging cities to apply could help distribute more funding to cities. They also said they will review the special litter grant application process and look for ways

⁶¹ 2022 TACIR surveys of cities and counties.

⁶² Email from Mike McClanahan, outreach section manager, Highway Beautification Office, TDOT, November 10, 2022.

to simplify and improve the process to help more cities apply, specifically focusing on the “sustainability and funding” section of the application.⁶³

The Adopt-A-Highway program could be promoted and expanded.

Adopt-a-highway programs are a way to engage volunteers to help pick up litter in their communities. Experts consider these programs a best practice and a cost-effective strategy to remove litter along roadsides; most states have a program.⁶⁴ TDOT’s program is free for volunteer participants, who commit to clean up a TDOT-approved, two-mile stretch of road on a quarterly basis.⁶⁵ TDOT provides bags, caution signs, safety vests, and a recognition sign that is installed along the adopted road section. The cost is minimal for TDOT—\$35,000 in fiscal year 2022-23.⁶⁶ As of November 2022, 292 groups participate—a total of approximately 584 miles of adopted roads—and 66 of Tennessee’s 95 counties have at least one active group.⁶⁷ In 2022, about 20% of the 129 applicants completed the process to become an active group. Appendix F shows the number of active groups and miles adopted per county.

Beautification Office staff said they would like at least one active adopt-a-highway group in each county, and more promotion of the program would be helpful. To promote the program, staff focus messaging in the counties that do not have active participants, submit letters to the editor in county newspapers, and do targeted social media advertising.⁶⁸ They say additional staff to focus on publicity and recognition of participants would help recruit and retain participants, and they look to North Carolina as a model—it has 1,000 groups and three dedicated program staff.⁶⁹ In comparison, Tennessee’s program has only the partial time of one staff member. North Carolina has approximately 3.5 times as many adopt-a-highway groups as Tennessee, while it has approximately 14% more road miles and about twice the population of Tennessee.⁷⁰ Beautification Office staff are working to expand Tennessee’s program.

Another strategy for cost-effective roadside litter pickup and community engagement is a sponsor-a-highway program. These programs are similar to adopt-a-highway programs, but rather than community volunteers

Experts consider adopt-a-highway programs a best practice and a cost-effective strategy to remove litter along roadsides; most states have a program.

⁶³ Email from and interview with Mike McClanahan, outreach section manager, Highway Beautification Office, TDOT, August 29, 2022, and January 9, 2023.

⁶⁴ Forbes 2009; and interview with and email from Cecile Carson, chief executive officer, Carson Consulting, July 5, and July 13, 2022.

⁶⁵ Tennessee Department of Transportation 2022a.

⁶⁶ Tennessee Department of Transportation 2022c.

⁶⁷ Emails from Mike McClanahan, outreach section manager, Highway Beautification Office, TDOT, August 25, and December 5, 2022.

⁶⁸ Email from Mike McClanahan, outreach section manager, Highway Beautification Office, TDOT, August 25.

⁶⁹ Interview with Mike McClanahan, outreach section manager, and Shawn Bible, office manager, Highway Beautification Office, TDOT, May 20, 2022.

⁷⁰ US Census Bureau 2021a; US Census Bureau 2021b; and US Department of Transportation 2009.

Experts consider a well-promoted statewide education campaign a best practice to foster an anti-littering culture and change people's behavior over time.

picking up litter, the state would contract with a third-party vendor to run the program, work with local businesses, and coordinate pickups with trained, paid, and insured workers.⁷¹ Companies pay for the service to adopt the road segment and earn recognition without providing volunteers. Some companies prefer this model. This is an option for expanding the current Adopt-A-Highway program and cleaning up interstates and state highways using minimal TDOT resources and without safety and liability issues related to using volunteers—a significant concern for TDOT. The cost to the agency would be comparable to the Adopt-A-Highway program, which was \$35,000 in fiscal year 2022-23.⁷² About half of states have this type of program.⁷³

Nobody Trashes Tennessee could help create and foster an anti-littering culture.

Nobody Trashes Tennessee is TDOT's statewide litter prevention campaign that aims to raise awareness and motivate Tennesseans to develop and encourage others to develop anti-littering habits. Experts consider a well-promoted statewide education campaign a best practice to foster an anti-littering culture and change people's behavior over time. Nobody Trashes Tennessee was launched in 2017, and in an initial marketing survey conducted by Beautification Office staff, 13% of survey respondents were aware of the campaign. A 2022 survey shows awareness increased to 19%; the goal is 85% brand awareness.⁷⁴ Respondents to TACIR's 2022 surveys of county and city leaders said the education campaign is important and needs to be better promoted and used in litter initiatives across the state. Beautification Office staff said they are working to increase campaign awareness and reach their brand awareness goal. The budget was increased from \$200,000 in fiscal year 2020-21 to \$3 million in fiscal year 2022-23.⁷⁵ One staff member said, "a comprehensive, statewide effort which permeates all markets across Tennessee could easily cost several million dollars each year."⁷⁶

The state's litter hotline provides a tool for concerned people to act.

The litter hotline is a system for people to anonymously report incidents of littering from motor vehicles, whether deliberate or accidental.⁷⁷ This

⁷¹ Email from Mike McClanahan, outreach section manager, Highway Beautification Office, TDOT, August 23, 2022.

⁷² Email from Mike McClanahan, outreach section manager, Highway Beautification Office, TDOT, August 25, 2022.

⁷³ Email from Mike McClanahan, outreach section manager, Highway Beautification Office, TDOT, May 24, 2022.

⁷⁴ Emails from Denise Baker, transportation program supervisor, Highway Beautification Office, TDOT, July 14, July 22, and October 14, 2022.

⁷⁵ Tennessee Department of Transportation 2022c.

⁷⁶ Email from Mike McClanahan, outreach section manager, Highway Beautification Office, TDOT, August 23, 2022.

⁷⁷ Tennessee Code Annotated, Sections 54-1-402, 54-1-403, and 54-1-404.

program offers a mechanism for concerned individuals that observe someone else littering to engage and act. TDOT maintains a toll-free number 1-877-8-LITTER (877-854-8837) and online form that people can use.⁷⁸ The information that needs to be included to report a littering incident includes the Tennessee license plate number; type and make of the vehicle; day, time, and location of the incident; and the type of item that was tossed or blown from the vehicle, including uncovered loads. TDOT sends a letter and educational materials to the registered owner of the vehicle—the program is educational and not punitive. According to TDOT, “The letter gently reprimands offenders by discouraging litter behavior and informing them that littering is against the law and punishable by a fine.”⁷⁹

Keep Tennessee Beautiful is the state’s litter education and community engagement resource.

Keep Tennessee Beautiful (KTnB), Tennessee’s Keep America Beautiful (KAB) affiliate, is part of the state’s litter prevention efforts. It is a nonprofit organization housed at the University of Memphis that “provides expertise in litter prevention education, litter law enforcement, community enhancement through beautification, and volunteer recruitment and management.”⁸⁰ KTnB’s advisory council, created by the governor’s executive order in 1989, advises KTnB and the local affiliates on policies to fulfill its mission “to educate and inspire Tennesseans to take action every day to improve and beautify their community environment.”⁸¹ The council is comprised of 14 advisory members who are private individuals appointed by the governor or members of state government departments. Current members include representatives of TDOT, Tennessee Department of Environment and Conservation, Tennessee Emergency Management Agency, Tennessee Department of Tourist Development, Tennessee Department of Agriculture, Tennessee Department of Economic and Community Development, counties, cities, and private industry.⁸²

KTnB receives a portion of TDOT litter grant funding each year. For fiscal year 2022-23, KTnB was allocated approximately \$1.6 million.⁸³ The organization uses the funding to work with 33 local affiliates, recruit new affiliates, and conduct many education, training, cleanup, and outreach activities across the state. In 2021, for example, through its 33 affiliates statewide, KTnB helped facilitate 1,182 events, clean or improve 208 public spaces, and educate 9,176 youth.⁸⁴ The process of becoming an affiliate

Tennessee’s litter hotline offers a mechanism for concerned individuals that observe someone else littering to engage and act.

⁷⁸ See <https://www.tn.gov/tdot/environmental-home/environmental-highway-beautification-office/litter.html>.

⁷⁹ Tennessee Department of Transportation 2022a.

⁸⁰ Ibid.

⁸¹ Keep Tennessee Beautiful “What is Keep Tennessee Beautiful?”

⁸² Email from Missy Marshall, executive director, Keep Tennessee Beautiful, April 10, 2022.

⁸³ Tennessee Department of Transportation 2022c.

⁸⁴ Keep Tennessee Beautiful “Affiliates”; and email received from Edmond McDavis III, affiliate services & training coordinator, Keep Tennessee Beautiful, October 27, 2021.

Keep Tennessee Beautiful affiliates are organized in a way that works best for the local communities and therefore are initiated and developed differently across the state.

involves paying a fee, completing training, and conducting a community assessment. The affiliates are organized in a way that works best for the local communities and therefore are initiated and developed differently across the state. For instance, one community, Brownsville, is looking ahead at changes that will happen as a result of the Ford Blue Oval development in the region, and has started the affiliate process to be prepared for an influx of people and have a plan in place to deal with increased waste and litter.⁸⁵

Affiliates are sometimes the only entity educating about litter in communities. At least 14 counties share the portion of litter grant required for education with the local KTnB affiliate to conduct education and outreach activities.⁸⁶ Approximately 16 counties have a KTnB affiliate but do not distribute litter grant funding to the affiliate. Affiliates also use other funding sources to pay for their activities. Keep Sevier Beautiful receives appropriations from the county and the five cities in the county in addition to litter grant funds.⁸⁷ The executive director said because the cities and county all have buy-in, they are engaged with litter prevention activities. The organization has a robust school program—they do litter and recycling education in every kindergarten, 2nd, 4th, and 6th grade class in the county and have an agreement with the school district that is renewed every three years. They use KAB’s *Waste in Place Leader Service and Project-Based Learning* youth guide along with other activities and created a teen board to engage and train young people to be leaders. KTnB knows of at least 6 of 32 affiliates (19%) that use the KAB youth resources.⁸⁸

Many resources exist that could help local governments, such as educational materials, enforcement and collaboration guides, model ordinances, litter action plans, and community engagement strategies. Some stakeholders in Tennessee have mentioned that they would like access to more tools, and an easily accessible online toolkit would help them find these types of resources.⁸⁹ KAB and other states agree.⁹⁰ The state’s litter hotline could also be included in a toolkit. KTnB affiliates have access to some KAB resources that are not available to the general public, such as a community assessment tool to identify needs and priorities, but many other resources provided by KAB are online and accessible to anyone. For example, the *Waste in Place Leader Service and Project-Based Learning* guide includes activities to engage youth and covers topics such as educating young people

⁸⁵ Interview with Missy Marshall, executive director, Keep Tennessee Beautiful, May 25, 2022.

⁸⁶ Email received from Mike McClanahan, outreach section manager, Highway Beautification Office, TDOT, September 17, 2021.

⁸⁷ Interview with Lisa Bryant, executive director, Keep Sevier Beautiful, September 8, 2022.

⁸⁸ Email from Edmond McDavis III, affiliate services & training coordinator, Keep Tennessee Beautiful, September 2, 2022.

⁸⁹ 2022 TACIR surveys of cities and counties; and interviews with Jeff Huffman, county executive, Tipton County, August 19, 2022; and Maurice Gaines, Jr., mayor, Lauderdale County, July 20, 2022.

⁹⁰ Interviews with David Scott, senior director, research, monitoring & evaluation, Keep America Beautiful, July 20, 2022; and Susan Russell, executive director, Keep Louisiana Beautiful, September 15, 2022.

about litter, recycling, waste management, and landfills. Beautification Office staff said they are working on a resource page at the “Nobody Trashes Tennessee” website, and KTnB staff is open to collaborating to make resources more accessible.⁹¹ Examples of resources that could be included in a toolkit are in appendix G.

Other government agencies and nongovernment organizations focus on litter prevention.

Many different entities are working across Tennessee to address litter and illegal dumping. In addition to TDEC and TDOT, other state agencies implement programs and activities to do their part. The Department of Tourist Development has recycling bins, cigarette recycling receptacles, and education programs at the 16 welcome centers it manages.⁹² The department works closely with TDOT and TDEC on litter issues, and a staff member serves on the KTnB advisory council. In 2022, Tennessee State Parks received the President’s Award from the National Association of State Park Directors for its “Go Green with Us” initiative.⁹³ The program aims to protect and preserve the parks through resource conservation, sustainable operations, and recycling, and each state park is responsible for implementing the requirements of the program.⁹⁴ Although it is a federal organization, not a state agency, the Tennessee Valley Authority (TVA) also has programs in Tennessee to help keep the land and water in its jurisdiction clean, such as the Clean Marina and Camp-Right Campgrounds programs.⁹⁵ The Clean Marina Initiative is focused on protecting water quality by recognizing and certifying marinas that help keep water clean, and the Camp-Right Campgrounds program recognizes campgrounds on TVA land that practice environmentally responsible management and encourage good camping practices, like “leave no trace.”

There are many local government agencies and nongovernment organizations across the state working to address litter, often in partnership. Many local governments do many activities to address litter in their communities, and these efforts are often done with funding from outside the litter grant program, such as general funds. For example, Tipton County used revenue from its general fund to hire a new full-time litter coordinator who conducted a community assessment to prioritize where to focus efforts and has initiated new programs focused on community outreach, property cleanup, and collaborating with the sheriff and

In addition to Tennessee Department of Environment and Conservation (TDEC) and TDOT, other government agencies and nongovernment organizations across the state are working to address litter, often in partnership.

⁹¹ Email from Denise Baker, transportation program supervisor, Highway Beautification Office, TDOT, July 13, 2022; and interview with Missy Marshall, executive director, Keep Tennessee Beautiful, May 25, 2022.

⁹² Interview with Pete Rosenboro, assistant commissioner, welcome centers, Tennessee Department of Tourist Development, August 10, 2021.

⁹³ Email from Tennessee Green Government, Catalyst Newsletter, October 5, 2022.

⁹⁴ Tennessee Department of Environment and Conservation “Go Green With Us.”

⁹⁵ Tennessee Valley Authority “Camp-Right Campgrounds” and “Tennessee Valley Clean Marinas.”

Keep the Tennessee River Beautiful hosts river cleanups and other programming not to be custodians of the river, but to show their volunteers the effect litter has on waterways to empower them and show them how they can help.

courts. The coordinator also formed a strong community group to help. The county executive emphasized the benefit of having a staff member dedicated to litter and that both education and cleanup are important.⁹⁶ In response to the 2022 TACIR surveys, some city leaders said they have their own adopt-a-street, roadway, or stream programs, and both county and city leaders mentioned many efforts and initiatives led by groups in their communities including churches, chambers of commerce, service clubs, rotary groups, local nonprofit organizations, schools, scouts, and private individuals organizing cleanup activities.

Nongovernment organizations are engaged with litter and beautification across the state. There are many examples, but Clean Memphis and Keep the Tennessee River Beautiful are just two that are highlighted here. Clean Memphis focuses on engagement, education, and empowerment and tries to connect with people in their communities and understand their struggles.⁹⁷ Through its work to connect residents with businesses, schools, and other groups to come up with solutions and recruit volunteers, the organization has found that hyper-local and targeted messaging at the neighborhood level is much more effective than broader, city-wide messaging. Another initiative, Keep the Tennessee River Beautiful, is a KTnB affiliate with a unique approach because it focuses on the entire length of the Tennessee River and partners with numerous communities, agencies, and groups.⁹⁸ Its two founding partners are the University of Tennessee and TVA. The organization hosts river cleanups and other programming not to be custodians of the river, but to show their volunteers the effect litter has on waterways to empower them and show them how they can help. It has cleaned up 261,994 pounds of trash since 2016.

Tennessee has litter laws that have recently been strengthened, but enforcement is challenging.

State law criminalizes both deliberate and negligent littering. The definition of litter includes garbage, refuse, rubbish, tobacco product waste such as cigarette butts, and all other waste material.⁹⁹ The offense of littering is deliberate, or intentional, when a person knowingly places, drops, or throws litter on public or private property and doesn't immediately remove it. The law defines littering as unintentional when a person negligently places or throws glass or dangerous substances in or near waters where people swim or near a public highway, and it includes discharging sewage, minerals, oils products, or other litter into public waters. Dropping litter

⁹⁶ Interview with Jeff Huffman, county executive, Tipton County, August 19, 2022.

⁹⁷ Interview with Janet Boscarino, executive director, Clean Memphis, September 9, 2021.

⁹⁸ Keep the Tennessee River Beautiful "Your River. Your Impact"; and interview with Kathleen Gibi, executive director, Keep the Tennessee River Beautiful, August 16, 2021.

⁹⁹ Tennessee Code Annotated, Section 39-14-501.

from any type of vehicle or vessel is also considered littering, and fines are doubled for dumping trash on scenic highways.¹⁰⁰

Tennessee's litter laws apply to both deliberate and negligent littering.

The levels of littering offense and fines in state law are based on the amount of litter, either by weight or volume, the number of offenses, and whether the person knowingly or negligently littered.¹⁰¹ Table 5 is a summary of the state's litter laws. The minimum offense is mitigated criminal littering for littering up to five pounds or 7.5 cubic feet in volume, which is a Class B misdemeanor punishable by a \$500 fine, mandatory service picking up litter, and possible service working in a recycling center.¹⁰² Public Chapter 899, Acts of 2022, strengthened this law by changing the offense from a class C misdemeanor to a Class B misdemeanor and increasing the fine from \$50 to \$500, as of July 1, 2022. A person who is charged may pay the fine without going to court and, in that case, would not have to do any service; the judge would have discretion to waive court costs. As the amount of litter increases or if someone is a repeat offender, penalties increase up to \$4,000 and include mandatory community service for first offenses and more for second and third convictions. The court could also require a convicted person to clean up and repair any damage they did to the site where they littered.¹⁰³ Public Chapter 1105, Acts of 2022, added dumping of two or more tires on public or private property without permission as an aggravated criminal littering offense with associated fines of \$2,500 to \$4,000. Additionally, Public Chapter 941, Acts of 2022, allows homeowner associations and neighborhood associations to seek an injunction or restraining order to prevent someone from entering the residential area if they have been convicted of aggravated criminal littering.

The levels of littering offense and fines in state law are based on the amount of litter, either by weight or volume, the number of offenses, and whether the person knowingly or negligently littered.

¹⁰⁰ Tennessee Code Annotated, Section 54-17-111.

¹⁰¹ Tennessee Code Annotated, Sections 39-14-503, 39-14-504, and 39-14-505.

¹⁰² "All proceeds from the fines imposed by this part shall be deposited in the general fund of the county where the offense occurred and designated for county operating costs with preference given to litter prevention programs and education such as those conducted by Keep America Beautiful. . . . The county mayor shall be further empowered to enter into agreements with city mayors or city managers within the mayor's county as to disbursements of moneys for violations of litter control and prevention laws that occur within municipal boundaries." Tennessee Code Annotated, Section 39-14-510.

¹⁰³ Tennessee Code Annotated, Section 39-14-506.

Table 5. Summary of Tennessee's Laws Related to Litter and Illegal Dumping

Tennessee Code Annotated Section		Description
Litter Prevention and Control Law 4-7-301 through 4-7-306		Creates a special unit of eight highway patrol officers to enforce the litter control law and encourage citizens to report violations.
5-1-115		Counties have authority to require property owners and occupants to remove vegetation, debris, or vacant dilapidated buildings or structures that endanger the health, safety, or welfare of other citizens or encourage the infestation of rats and other harmful animals.
5-1-118(c)		Counties have authority to regulate occupations, practices, or uses of property that are detrimental or liable to be detrimental to the health, morals, security and general welfare of the people.
5-1-121		Counties have authority to establish fines up to \$500 for violation of its rules or regulations.
7-51-2002		Local governments are prohibited from restricting use of food and drink containers including bags.
Litter Control	39-14-501	Defines litter.
	39-14-502	Defines the offense of littering.
	39-14-503	Defines the offense of mitigated criminal littering: Class B misdemeanor, \$500 fine, and mandatory litter pickup.
	39-14-504	Defines the offense of criminal littering: Class B misdemeanor, imprisonment not greater than six months or a fine not to exceed \$500, or both, unless otherwise provided by statute (TCA 40-35-111), and mandatory litter pickup.
	39-14-505	Defines the offense of aggravated criminal littering: depending on the amount of litter and number of convictions, either Class A misdemeanor, imprisonment, \$2,500-\$4,000 fine, or both; or Class E felony; and mandatory litter pickup.
	39-14-506	In addition to the penalties established in this part, the court may, in its discretion, require a person convicted under this part to remove any substance listed under § 39-14-501 that was dropped, placed or discharged by the person and restore the property or waters damaged by the littering to its former condition at the person's expense.
	39-14-507	Motor vehicles transporting litter or other materials are required to cover their loads.
	39-14-508	County legislative bodies may, by resolution, impose regulations for litter control, including the placing, dropping, throwing, collection and storage of garbage, litter, refuse and rubbish on public or private property.

Tennessee Code Annotated Section		Description
Litter Control (continued)	39-14-509	All law enforcement agencies, officers, and officials of this state or any political subdivision of this state, or any enforcement agency, officer, or any official of any commission or authority of this state or any political subdivision of this state is authorized, empowered, and directed to enforce compliance with this part.
	39-14-510	Counties are required to use fine revenue for litter prevention programs and offer a reward of \$50 to a person who reports information that leads to a mitigated criminal littering or \$250 for a criminal or aggravated criminal littering conviction.
	39-14-511	In counties with an environmental court designated pursuant to Acts 1991, chapter 426, the courts shall exercise exclusive general sessions jurisdiction, over this part, pursuant to title 40.
41-2-123		Counties are authorized to use litter grants funds for expenses related to inmate litter pickup.
54-1-401 through 54-1-407		In recognition of the exorbitant societal costs associated with littering and in the interest of a cleaner, more beautiful Tennessee, the department of transportation is authorized to establish a litter prevention and control program.
54-17-111 and 54-17-112		Littering fines are doubled on scenic highways, the offense is a Class C misdemeanor, and each day of violation is considered a separate offense.
55-7-109		Loose material transported in motor vehicles is required to be secured so it does not spill, drop off, or blow away from the open bed. A violation is a Class C misdemeanor.

Source: TACIR staff review of Tennessee Code Annotated.

Tennessee also has laws requiring vehicles that are hauling materials or waste to cover or enclose their loads to prevent items from falling or blowing out of the vehicle and creating unintentional litter. A violation of the state’s covered load—or tarping—law is a Class B misdemeanor, and the court may also impose any of the penalties for mitigated criminal littering.¹⁰⁴ There are a few exceptions, such as for vehicles transporting recovered materials to a convenience center or scrap dealer for recycling and vehicles transporting building materials or agricultural products. However, if a law enforcement officer sees materials blowing off a vehicle, the exception does not apply. Vehicles hauling loose material don’t need to be tarped but must be loaded in a way that complies with law, and a violation is a Class C misdemeanor.¹⁰⁵ The laws do not apply to farmers

¹⁰⁴ Tennessee Code Annotated, Section 39-14-507.

¹⁰⁵ Tennessee Code Annotated, Section 55-7-109.

Before the minimum fine for littering in Tennessee was increased from \$50 to \$500 in 2022, many stakeholders said it was not high enough and was viewed as not worth enforcing or prosecuting.

who are transporting farm produce to market, from field to field, or to storage.

The amount of the fine likely matters. Before Public Chapter 899 went into effect on July 1, 2022, raising the fine to \$500, the minimum fine for littering in Tennessee was \$50, which many stakeholders said was not high enough and viewed as not worth enforcing or prosecuting.¹⁰⁶ The Tennessee Constitution Article VI, Section 14, prohibits fines over \$50 without a jury trial, and *City of Chattanooga v. Davis*, 54 S.W.3d 248 (Tenn. 2001), found that fines cannot exceed \$50 per violation if there is no jury trial. As a result of this case, regulations typically define a “violation” on a per day basis.¹⁰⁷ Additionally, defendants can pay litter fines for the minimum offense without going to court. For more serious offenses, they often take plea agreements, avoiding the need for a grand jury or jury trial. This is what often happens with DUI convictions, which have a minimum \$350 fine.¹⁰⁸ Therefore, in most cases for littering offenses, the constitutional right to a jury trial is not an issue.¹⁰⁹

Although details of other states’ litter laws vary, 49 states have statewide laws that impose penalties for littering.¹¹⁰ Montana is the only state that grants this authority exclusively to local governments, and it sets a cap on fees that local governments can charge. Including Tennessee, at least 18 states impose penalties for criminal littering based on the amount of litter,¹¹¹ and 27 states increase the penalty for subsequent convictions.¹¹² The amounts of fines for first offenses of littering or illegal dumping range from \$5 in Vermont for throwing advertising flyers in the street to a maximum of \$50,000 in Mississippi for littering more than 500 pounds, and states often require litter pickup or community service. Some states also have imprisonment as a possible penalty. Fines for dumping are generally higher. Every state has some form of a statute requiring the contents of vehicles to be secured or covered.

¹⁰⁶ Tennessee Code Annotated, Section 39-14-503 (2021 version); and interview with Lisa Eischeid, general sessions judge, Rutherford County, January 13, 2022.

¹⁰⁷ Email from Melisa Kelton, county government consultant, University of Tennessee County Technical Assistance Service, January 14, 2022.

¹⁰⁸ Interview with Lisa Eischeid, general sessions judge, Rutherford County, January 13, 2022.

¹⁰⁹ Tennessee Code Annotated, Section 39-14-503.

¹¹⁰ TACIR staff review of other states’ statutes.

¹¹¹ Alaska, Arizona, Florida, Georgia, Maine, Maryland, Michigan, Mississippi, North Carolina, North Dakota, Oklahoma, South Carolina, South Dakota, Tennessee, Texas, Washington, West Virginia, and Wisconsin.

¹¹² Alabama, Arizona, Arkansas, California, Colorado, Delaware, Georgia, Hawaii, Idaho, Illinois, Kansas, Kentucky, Louisiana, Massachusetts, Michigan, Minnesota, Mississippi, Nebraska, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, South Carolina, Tennessee, Utah, and West Virginia.

Even with strong laws, enforcement of laws is challenging, and several strategies, including more training, could help.

Stakeholders agree that enforcement of litter and dumping laws is challenging, and not many charges lead to convictions. According to the Tennessee Administrative Office of the Courts, in 2021, 82 charges of littering offenses were filed statewide, and of these, 44 were dismissed; only four charges—all for the offense of criminal littering—resulted in guilty pleas.¹¹³ Enforcement is clearly a key part of dealing with litter, creating an anti-litter norm, and building community pride. The KAB 2018 *Enforcement and Prosecution Guide* discusses a few reasons laws aren't enforced including weak laws, resource constraints, lack of information about the crimes, and lack of cooperation or political will.¹¹⁴ It is hard to catch people in the act of littering or dumping, and without clear evidence, developing a strong case to prosecute is difficult.¹¹⁵ Law enforcement officers, prosecutors, and judges might hesitate to build a case, prosecute, or hear a littering case, respectively, if the evidence is questionable. KAB also suggests several strategies for overcoming challenges including strengthening laws, using cameras, educating, and establishing reporting tools.¹¹⁶ Tennessee uses several of the recommended strategies. For example, some jurisdictions in Tennessee are using cameras to gather video footage of people illegally dumping and using the footage as evidence.¹¹⁷ Items with a person's name, such as bills or letters, that are discovered at a littering or dumping site can be used to identify and charge someone with a littering offense.¹¹⁸

Offering rewards to help convict offenders is also an option. Tennessee law says that a person who reports information that leads to the conviction of a person for mitigated criminal littering shall receive a \$50 reward, and if the conviction is for criminal or aggravated criminal littering the reward is \$250.¹¹⁹ The county is responsible for providing the reward money. Several years ago, Loudon County offered a reward for identifying a person who had been illegally dumping, and within a few weeks of offering the reward, someone contacted law enforcement with information that led to that person's conviction. In an interview with TACIR staff, the Loudon County mayor said a clearer and quicker process for offering rewards would help counties use them more often.¹²⁰

Law enforcement is clearly a key part of dealing with litter, creating an anti-litter norm, and building community pride, but it is challenging.

¹¹³ Email from Michelle Consiglio-Young, director and counsel, Intergovernmental Affairs Division, Tennessee Supreme Court, Administrative Office of the Courts, December 19, 2022.

¹¹⁴ Keep America Beautiful 2018b.

¹¹⁵ Interviews with Lisa Eischeid, general sessions judge, Rutherford County, January 13, 2022; and Sarah Lyles, executive director, Palmetto Pride, February 17, 2022.

¹¹⁶ Keep America Beautiful 2018b.

¹¹⁷ Interviews with Jeff Bledsoe, executive director, Tennessee Sheriffs' Association, September 10, 2021; and Maurice Gaines, Jr., mayor, Lauderdale County, July 20, 2022; and 2022 TACIR surveys of cities and counties.

¹¹⁸ Tennessee Code Annotated, Section 39-14-502.

¹¹⁹ Tennessee Code Annotated, Section 39-14-510.

¹²⁰ Interview with Buddy Bradshaw, mayor, Loudon County, May 31, 2022.

Training and education about litter laws is a recommended strategy for addressing the challenge of law enforcement. According to stakeholders, it is critical, and more would help.

One idea discussed by stakeholders and experts is to focus law enforcement efforts in certain areas. Some stakeholders have mentioned roads to landfills and convenience centers as problem areas and suggested that enforcement of covered load laws on these roads is a place to focus.¹²¹ The laws are clear, and catching people in the act of hauling material that is not properly loaded or covered, especially if material is blowing or falling off the vehicle, could help reduce unintentional litter along roadsides. Because litter problems and solutions are local, where to focus enforcement efforts will vary between communities.

One litter prevention gap that could be filled in Tennessee is litter law education. Training and education about litter laws is critical, and more would help, according to stakeholders. Training and education about litter laws is a recommended strategy for addressing the challenge of law enforcement. Law enforcement officers, prosecutors, judges, and community members could all benefit from a better understanding of the state’s current laws and the negative effects of litter on the community, including safety and the connection to other crimes in areas that are littered or blighted.¹²² The Tennessee Highway Patrol has a special unit to enforce litter laws, which is required to have a minimum of eight officers and receive appropriate training to enforce litter laws.¹²³ The unit is also tasked with encouraging the public to help report and prevent littering and developing programs to cooperate with the public, such as litter watch programs.¹²⁴ However, any law enforcement officer in the state has authority to enforce state litter laws.¹²⁵ Stakeholders say state litter law training is not part of the state’s Law Enforcement Training Academy curriculum and not part of the regular training that prosecutors or judges receive, although they might if they work in an environmental court.¹²⁶

To help fill the enforcement and training gap, in 2021, KTnB piloted a litter law enforcement grant program with several law enforcement agencies. Because the COVID-19 pandemic limited programming, KTnB used a resulting budget surplus to better engage law enforcement agencies on litter prevention and enforcement. It partnered with TDOT and the Tennessee Association of Chiefs of Police to provide grants focusing on litter prevention to city police departments across the state.¹²⁷ Eight police departments received a total of \$30,000 as \$2,500 and \$5,000 grants. The

¹²¹ 2022 TACIR surveys of cities and counties; and interview with Missy Marshall, executive director, Keep Tennessee Beautiful, May 25, 2022.

¹²² Interviews with Missy Marshall, executive director, Keep Tennessee Beautiful, July 21, 2021; and Keep America Beautiful 2018b.

¹²³ Tennessee Code Annotated, Sections 4-7-301 et seq.

¹²⁴ Tennessee Code Annotated, Section 4-7-306.

¹²⁵ Tennessee Code Annotated, Section 39-14-509.

¹²⁶ Interview with and email from Missy Marshall, executive director, Keep Tennessee Beautiful, July 21, 2021, and September 1, 2022.

¹²⁷ Emails from Edmond McDavis III, affiliate services & training coordinator, Keep Tennessee Beautiful, April 6, 2022; and Kyle Howard, research & education coordinator, Keep Tennessee Beautiful, December 1, 2022.

departments that received \$5,000 were required to participate in litter law training. Some of the litter prevention activities conducted with the grant funds include purchasing trash cans, equipment for cleanups, and tarps to give away; patrolling in targeted areas; and watching for active littering and uncovered loads in an attempt to catch more people in the act of littering. Some departments used funds to identify the worst dumping sites, purchase trail cameras, and clean them up, and one department is focusing on blighted areas in the community. Measures of success include the number of citations issued as part of the program and progress with stopping illegal dumping, for example by purchasing trail cameras that will continue to be used in the future to catch offenders. KTnB considers the pilot program a success and plans to continue offering law enforcement grants each year; the budget for fiscal year 2022-23 is \$50,000.¹²⁸

Other states have challenges with enforcement and prosecution and are using different strategies to improve their situations. As in Tennessee, roads to landfills and convenience centers are often problem areas, where more enforcement could be beneficial. One strategy is to focus enforcement efforts on priority areas like Pennsylvania does with litter enforcement corridors—areas where enforcement is targeted, such as certain roadways with a lot of litter or dumping. However, some say enforcement zones create unintended consequences and an incentive to litter outside the targeted areas.¹²⁹

Several other states are focusing on their laws and training. In 2018, South Carolina made changes to its litter laws including redefining litter, identifying illegal dumping, and modifying community service requirements by allowing unsupervised community service for probationers. This has all been beneficial, according to a staff member at Palmetto Pride, the state’s nonprofit litter prevention partner.¹³⁰ The organization conducts training, manages an enforcement committee, loans cameras to law enforcement agencies, and helps the state and local governments create community service programs.¹³¹ To identify enforcement solutions, Palmetto Pride partnered with Keep Pennsylvania Beautiful to conduct a study of litter laws and enforcement investigating the connection between fines and adjudication of laws.¹³² Additionally, South Carolina has a Litter Control Association that promotes litter enforcement and public awareness and protects the environment. It works

In Tennessee and other states, roads to landfills and convenience centers are often problem areas, where more enforcement could be beneficial.

¹²⁸ Keep Tennessee Beautiful “Keep Tennessee Beautiful Law Enforcement Grant”; and emails from Kyle Howard, research & education coordinator, Keep Tennessee Beautiful, May 24, and October 6, 2022.

¹²⁹ Interview with Shannon Reiter, president, Keep Pennsylvania Beautiful, February 14, 2022.

¹³⁰ Interview with Sarah Lyles, executive director, Palmetto Pride, February 17, 2022.

¹³¹ Palmetto Pride “Community Service & Support Programs”; and interview with Sarah Lyles, executive director, Palmetto Pride, February 17, 2022.

¹³² Interview with and email from Shannon Reiter, president, Keep Pennsylvania Beautiful, February 14, and November 22, 2022; and Keep Pennsylvania Beautiful, Palmetto Pride, and Carson Consulting 2023.

Although local law enforcement officers have authority to enforce state laws, counties and cities also have authority to adopt local litter regulations, and some do.

with Palmetto Pride to encourage law enforcement officers to enforce litter laws and let people know about fines.¹³³ Georgia enacted new litter laws in 2006 and does litter law enforcement training funded through Keep Georgia Beautiful.¹³⁴ The training is mostly focused on law enforcement officers, but anyone can participate. They have not tracked the effect of the program but receive positive feedback from participants and agency leaders.

Local governments can pass their own resolutions and ordinances and establish fines.

Although local law enforcement officers have authority to enforce state laws, counties and cities also have authority to adopt local litter regulations.¹³⁵ By resolution, their legislative bodies may establish a fine up to \$500 for each violation of a rule or regulation they adopt, and all collected fines must go into the general fund of the county where the offense occurred and be designated for litter prevention programs.¹³⁶ Therefore, even if the offense occurred within city boundaries, the fine money goes to the county, and the county can enter into agreements with cities in their jurisdictions to share the fine revenue.

Some cities and counties have local ordinances to address litter and illegal dumping. See figures 7 and 8. Out of 52 responses to the 2022 TACIR survey, 18 counties said they do have county litter ordinances (35%), and 25 said they have illegal dumping ordinances (48%). They have not been updated in the last five years. Out of 109 responses to the city survey, 78 cities said they have litter ordinances (72%), and 65 said they have illegal dumping ordinances (60%). Four (4%) said litter or illegal dumping ordinances have been updated in the last five years. Survey respondents also said they enforce state litter laws and that a template for local ordinances would be helpful. KAB has a model illegal dumping and litter control ordinance that is accessible at its website,¹³⁷ and CTAS and MTAS both assist local governments with developing ordinances and policies.¹³⁸

¹³³ SC Litter Control Association "Enforcement + Education."

¹³⁴ 2006 Ga. Act 538, 2005 Ga. HB1320; and interview with Natalie Johnston-Russell, executive director, Keep Georgia Beautiful Foundation, January 27, 2022.

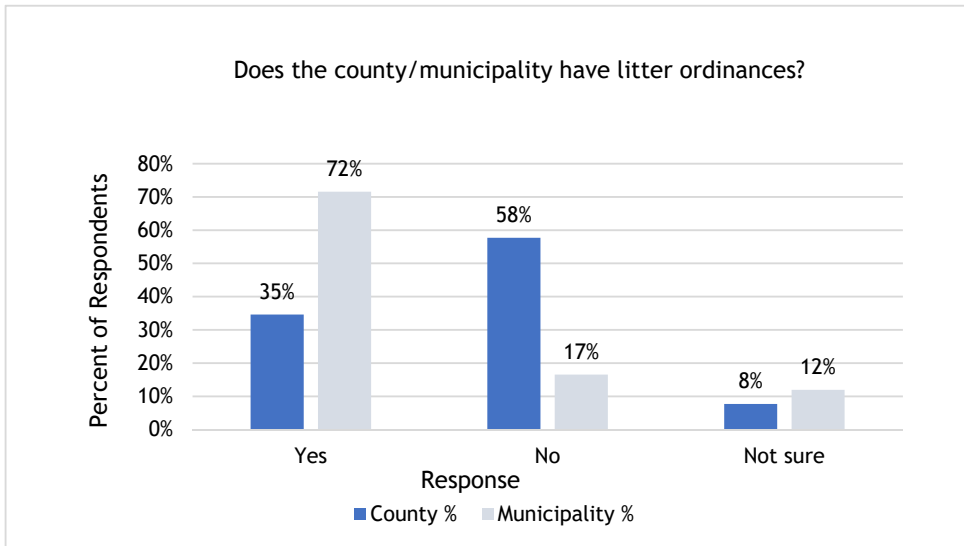
¹³⁵ Tennessee Code Annotated, Sections 5-1-115, 5-1-118, and 39-14-508.

¹³⁶ Tennessee Code Annotated, Sections 5-1-121 and 39-14-510.

¹³⁷ Keep America Beautiful 2018c.

¹³⁸ Interview with Chuck Downham, municipal management consultant, University of Tennessee Municipal Technical Advisory Service, September 9, 2022; and email from Kim Raia, environmental consultant, University of Tennessee County Technical Assistance Service, September 8, 2022.

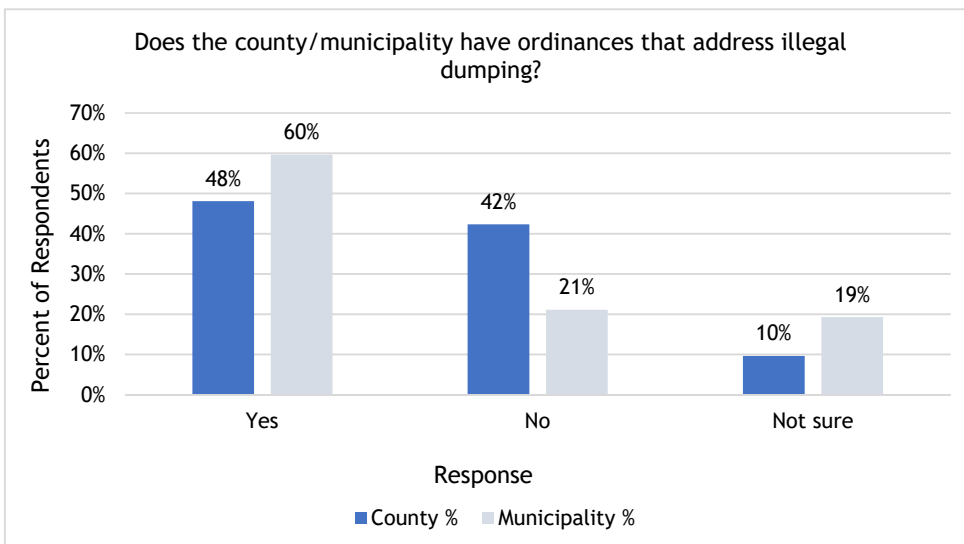
Figure 7. Local Governments with Litter Ordinances



Note: 52 counties and 109 cities responded to the question.

Source: 2022 TACIR surveys of cities and counties.

Figure 8. Local Governments with Illegal Dumping Ordinances



Note: 52 counties and 109 cities responded to the question.

Source: 2022 TACIR surveys of cities and counties.

The state’s solid waste management system addresses waste tire management, but local governments could use more help.

The Solid Waste Management Act of 1991 established a policy to reduce and minimize the need for solid waste treatment and disposal “through source reduction, reuse, composting, recycling, and other methods” and to “promote markets for and engage in the purchase of goods made from recovered materials and goods which are recyclable.”¹³⁹ To help implement the policy, the Act established the solid waste management fund (SWMF), managed by TDEC, to support programs and activities that help implement the policy including “technical and solid waste planning assistance for local governments, grants to improve recycling facilities and equipment, collection of household hazardous waste, landfill cleanup,” and the waste tire program.¹⁴⁰ The fund’s two main revenue sources are the tire pre-disposal fee—\$0.25 per new tire—and the tipping surcharge at Class I landfills for everyday trash discarded by the public—\$0.90 per ton—the majority of the fund. For fiscal years 2017-18 through 2020-21, the average annual combined revenue from these sources into the fund was \$8 million.¹⁴¹ See table 6.

**Table 6. Sources of Revenue for the Solid Waste Management Fund (SWMF)
Fiscal Years 2016-17 through 2020-21**

Revenue Source	Fiscal Year				
	2016-17	2017-18	2018-19	2019-20	2020-21
Tire Pre-Disposal Fee (\$0.25 per new tire sold)	\$ 1,371,649	\$ 1,528,557	\$ 1,390,931	\$ 1,571,629	\$ 1,540,158
Municipal Solid Waste Surcharge (\$0.90 per ton)	6,257,736	6,474,468	6,731,513	6,704,106	6,563,698
Combined Revenue into SWMF	\$ 7,629,385	\$ 8,003,025	\$ 8,122,444	\$ 8,275,735	\$ 8,103,856

Source: Tennessee Advisory Commission on Intergovernmental Relations 2020; and email from Cavene McHayle, program administrator, Division of Solid Waste Management, TDEC, February 10, 2022.

The Solid Waste Management Act requires TDEC to use SWMF funds to help local governments meet the state’s waste reduction, diversion, and recycling goals through certain required programs. Some of those are household hazardous waste collection, recycling centers and equipment, and planning assistance. TDEC did not offer any materials management grants for two years because of the COVID-19 pandemic and funding limitations; it began offering them again in fiscal year 2022-23.¹⁴²

Counties are responsible for managing solid waste. The 1991 Act required counties to create single-county or multi-county solid waste regions, each

¹³⁹ Public Chapter 451, Acts of 1991; and Tennessee Code Annotated, Sections 68-211-801 et seq.

¹⁴⁰ Tennessee Advisory Commission on Intergovernmental Relations 2020.

¹⁴¹ Tennessee Advisory Commission on Intergovernmental Relations 2020; and email from Cavene McHayle, program administrator, Division of Solid Waste Management, TDEC, February 10, 2022.

¹⁴² Tennessee Department of Environment and Conservation 2022a.

with a board and advisory committee, to plan and comply with the state’s solid waste reduction and recycling goals. Currently, there are 57 single-county solid waste regions and nine multi-county regions; combined, these single- and multi-county regions cover all 95 counties.¹⁴³ Counties and solid waste regions manage solid waste differently, but each county is required to provide at least one convenience center where residents can bring their waste and recycling or can provide a higher level of service such as curbside collection.¹⁴⁴ In addition, counties are responsible for providing a location to dispose of waste tires, which could be at the convenience center or another designated site in the county. Some counties also have landfills, transfer stations, or materials recovery facilities (MRF), and cities have authority to manage solid waste within their jurisdictions. Figure 9 describes the Chester County recycling hub where 13 cities and counties bring their single-stream recycling for processing. TDEC’s website provides maps showing the locations of solid waste facilities in each county,¹⁴⁵ and appendix H shows the number of landfills, convenience centers, transfer stations, household hazardous waste facilities, MRFs, and baling facilities in each county.

Each county is required to provide at least one convenience center where residents can bring their waste and recycling or can provide a higher level of service such as curbside collection.

Figure 9. West Tennessee Regional Recycling Hub

The Chester County Solid Waste Department operates the West Tennessee Regional Recycling Hub, a materials recovery facility (MRF) where surrounding cities and counties bring their single-stream recycling to be processed, including plastic (PET 1 & 2), paper, cardboard, aluminum, and tin cans. Using \$6.5 million in grant funds from TDEC’s Division of Solid Waste and Materials Management, the hub began in 2010 as a pilot project with the goal to promote and increase recycling and divert waste from landfills through partnerships with local governments, schools, and businesses. The facility currently serves over 350,000 residents and partners with 13 cities and counties, 25 schools and colleges, and over 300 businesses, collecting approximately 6,500 tons of material per year. According to Lisa Hughey, TDEC Director for the Division of Solid Waste Management, “Chester County models how a true Hub and Spoke system can operate. . . . The Hub has proven that an innovative TDEC grant, when used efficiently, can become a catalyst for big changes across an entire region.”

Source: Interview with Amber Greene, solid waste director, Chester County Solid Waste and Recycling Department, September 1, 2021; Chester County, Tennessee “West Tennessee Regional Recycling Hub”; and Waste Advantage Magazine 2022.

¹⁴³ Tennessee Department of Environment and Conservation 2020.

¹⁴⁴ Tennessee Code Annotated, Section 68-211-851; and University of Tennessee County Technical Assistance Service “Solid Waste Management, Collection and Disposal.”

¹⁴⁵ Tennessee Department of Environment and Conservation “Maps.”

Although the state has a waste tire disposal program, dealing with disposal and illegal tire dumping is still a big challenge for local governments.

Waste tire dumping is a problem that is particularly challenging for counties and cities.¹⁴⁶ Tire dumps are expensive to clean up, and local governments often don't have enough resources to clean up large dumps. Because litter is improperly disposed waste, how solid waste—including waste tires—is managed has a direct effect on litter and illegal dumping. The Solid Waste Management Act took steps to better manage waste tires, although the waste tire program does not specifically deal with preventing dumping or cleaning up existing dumping.¹⁴⁷

Counties are responsible for managing waste tires that are generated in their jurisdictions, and the Solid Waste Management Act of 1991 required each county to provide a location to receive and store waste tires.

Counties are responsible for managing waste tires that are generated in their jurisdictions, and the Act required each county to provide a location to receive and store waste tires. As of 1995, whole tires are banned from landfills, and as of 2002, counties must dispose of waste tires in a way that creates a beneficial end use, unless it is cheaper to shred and take them to a landfill.¹⁴⁸ The state collects a pre-disposal fee of \$1.35 per new tire sold, and from the fees collected counties receive \$1.00 per new tire sold by retailers within their jurisdiction to help manage waste tires in the county. Twenty-five cents per new tire goes to the state's solid waste management fund as mentioned above, and \$0.10 goes to the dealer that sold the tire. County audit data shows that counties are receiving the funds, but they account for the funds differently. For example, a few of the categories for the fees are "surcharge – waste tire disposal," "other state revenues," "solid waste grants," "state tire tax," "other statutory local taxes," and "other public works grants."¹⁴⁹

In 2020, TACIR studied the issue of illegal tire dumping, and its report *Closing Gaps in Tennessee's Waste Tire Program and Giving Local Governments More Flexibility to Prevent Illegal Tire Dumping* had several findings and made several recommendations to the state (see appendix I):

- To reduce tire dumping, TACIR suggests closing regulatory gaps with regards to dealers selling used tires and the contractors that haul waste tires for disposal.
- To provide funding for counties and the state to manage waste tires, Tennessee, like many other states, charges a fee—currently \$1.35—on the sale of new tires. The report recommends expanding the state's existing fee on new tire sales to include sales of used

¹⁴⁶ Interview with Mike Harrison, former executive director, Association of County Mayors, November 9, 2021.

¹⁴⁷ Tennessee Advisory Commission on Intergovernmental Relations 2020.

¹⁴⁸ Public Chapter 587, Acts of 1998; and Tennessee Code Annotated, Section 68-211-867. Before the passage of Public Chapter, Acts of 2022, counties could only use pre-disposal tire fee revenue for beneficial end use and not for shredding and disposing of waste tires in landfills.

¹⁴⁹ TACIR staff review of county audit reports for fiscal year 2018-19.

tires, in order to better identify all sources of scrap tires and treat all businesses responsible for scrap tires equally.

- Given the notable hazards associated with illegally dumping tires, most states require tire haulers to obtain permits and require tire businesses to use only permitted waste tire haulers. This report recommends that Tennessee do the same, including proof of financial assurance as a condition of permit approval.
- Most of the revenue from tire pre-disposal fees returns to the counties where the tires were sold, and county governments are each responsible for their own waste tire management. The report recommends amending the law that currently restricts how counties can use that money, which could help counties fund more efforts to proactively target illegal dumping, like increased business inspections, community outreach, or purchasing surveillance equipment.

In 2022, Senate Bill 2344 by Yager and House Bill 2381 by Parkinson would have implemented the report's recommendations; the bills didn't pass. The Senate bill was assigned to the General Subcommittee of the Senate Energy, Agriculture, and Natural Resources Committee, and the House bill failed in the House Agriculture and Natural Resources Subcommittee. However, Public Chapter 746, Acts of 2022, did implement one of TACIR's recommendations by clarifying that counties can use pre-disposal fee revenue for beneficial end use or disposing of shredded waste tires in landfills if the beneficial end use costs more than shredding and disposal. Since 2002 the law had required the revenue be used for beneficial end use and could "not be used for any other purposes,"¹⁵⁰ such as shredding tires and disposing of them in landfills.

Counties must spend tire pre-disposal fee money on beneficial end uses or shredding, transporting, and disposing of waste tires in landfills but are not allowed to spend it on preventing dumpsites. However, TDEC can help them with cleanup. If there are funds remaining after TDEC has budgeted for required programs such as providing technical, solid waste planning, and recycling grants, the agency can use money from the solid waste management fund to investigate and clean up illegal dumpsites and help counties with waste tire collection and disposal.¹⁵¹ Tire dumps are expensive to clean up. One hillside location in Knox County where more than 4,000 illegally dumped tires and other trash were found would cost approximately \$120,000 to clean up. But according to the 2020 TACIR waste tire report, "only one cleanup grant has been awarded since 2017,

Counties must spend tire pre-disposal fee money on beneficial end uses or shredding, transporting, and disposing of waste tires in landfills but are not allowed to spend it on preventing dumpsites. However, TDEC can help them with cleanup.

¹⁵⁰ Tennessee Code Annotated, Section 67-4-1610 (2021 version); and Tennessee Advisory Commission on Intergovernmental Relations 2020.

¹⁵¹ Tennessee Code Annotated, Section 68-211-867.

In the TACIR county survey and interviews, counties say they need more funding and technical assistance for solid waste management.

and there is no existing grant program designed to help local governments prevent illegal dumping before it starts.”¹⁵²

In 2015, the Tire Environmental Act Program (TEAP) was implemented to help create and support beneficial end uses for waste tires.¹⁵³ A separate fee was established—the environmental fee—that is \$5 per each new vehicle sold with four tires and more for vehicles with more tires. The fee revenue goes to the TEAP fund to provide grants for projects such as recycling, product development, and research focused on developing beneficial end uses for waste tires. Examples of beneficial end uses resulting from the program are rubberized asphalt, tire derived aggregate, tire derived fuel, and granulated rubber porous flexible pavement. Local governments, for-profit, and nonprofit entities can apply for grant funds. Since the program began, approximately \$4.5 million has been awarded, and 3.6 million tires—over 42,000 tons—have been diverted from landfills.

In the TACIR county survey and interviews, counties say they need more funding and technical assistance for solid waste management. They need funding for equipment, upgrades, hauling, and increasing costs in general. They mentioned the TDEC grants that are starting back up this fiscal year, after a couple years of no grant distribution. They also say the planning grants are helpful and in general would like more assistance with planning and implementation. TDEC has a waste and scrap tire management toolkit available to anyone on its website.¹⁵⁴ The agency has also created a waste tire working group that is conducting a survey of county and solid waste representatives to better understand their issues related to waste tire management and how the agency can assist them.¹⁵⁵ Other organizations can also provide assistance to local governments including the Tennessee Recycling Coalition, Tennessee Solid Waste Directors Association, and Tennessee Association of County Mayors.

Public-private partnerships and the circular economy are a key part of solid waste management and litter prevention.

The private sector also plays a key role in solid waste management through technology development and innovation and often through partnerships with local governments. According to stakeholders, the economics of solid waste and recycling are challenging, and markets fluctuate over time.¹⁵⁶ It can be more cost effective to take recyclable materials to the landfill

¹⁵² Tennessee Advisory Commission on Intergovernmental Relations 2020.

¹⁵³ Tennessee Code Annotated, Sections 68-211-301 et seq.; Tennessee Department of Environment and Conservation 2022c; and Tennessee Department of Environment and Conservation 2021b.

¹⁵⁴ Tennessee Department of Environment and Conservation 2022d.

¹⁵⁵ Email from Chris Pianta, environmental program manager, Tennessee Department of Environment and Conservation, December 14, 2022.

¹⁵⁶ Interviews with Lincoln Young, president, Tennessee Recycling Coalition, October 4, and October 26, 2021.

rather than recycling them or finding another end use for them, if they have low market value. Many solid waste and recycling contracts include a transportation charge in addition to the base fee per ton for waste and recycling. Because transporting materials is a large cost, the distance to the recycling center or end-use facility matters.

Because most local governments don't have the resources or capability to transport or process recyclable materials, they commonly partner with private companies.¹⁵⁷ There are many examples of public-private partnerships. Rockwood Sustainable Solutions is a company in Middle Tennessee that takes all of Wilson and Smith counties' waste tires and charges a fee that is less than the tire disposal fee the counties receive from the state.¹⁵⁸ Rockwood grinds the tires and makes tire-derived aggregate that is used for septic tank fills, which is a beneficial end use. Another company, Eastman Chemical Company, is investing approximately \$250 million in its Kingsport, Tennessee facility "to make specialty products from plastic waste using its innovative polyester renewal technology."¹⁵⁹ Further, the Southeast Recycling Development Council (SERDC) says on its website that "the Southeast is unique in its access to robust recycling markets. . . . In a 2010 study, SERDC determined that over 200 key Southeastern manufacturers look to recycled feedstock to develop new consumer goods."¹⁶⁰

Along with partnerships, stakeholders agree that the circular economy is a key part of the solution. The idea of a circular economy is based on three principles: eliminating waste and pollution, reusing products and materials, and making compost.¹⁶¹ The goal is to make products using materials that will have value and can be used to make new products, rather than materials that will become waste. There is focus on supporting a circular economy in Tennessee. For example, TDEC created the Tennessee Materials Marketplace to help support the circular economy in the state.¹⁶² TDOT plans to partner with a university to conduct research on how other states are messaging about the circular economy and how the messaging has affected behavior change and cost savings.¹⁶³ Clean Memphis is leading a project called Memphis Transformed that aims to

Because most local governments don't have the resources or capability to transport or process recyclable materials, they commonly partner with private companies.

¹⁵⁷ Interviews with Amber Greene, solid waste director, Chester County Solid Waste and Recycling Department, September 1, 2021; and Nancy Zion, co-chair advisor, Tennessee Solid Waste Directors Association, September 29, 2021.

¹⁵⁸ Interviews with Lincoln Young, president, Tennessee Recycling Coalition, October 4, and October 26, 2021.

¹⁵⁹ Eastman 2021.

¹⁶⁰ Southeast Recycling Development Council "SERDC Resources."

¹⁶¹ Ellen MacArthur Foundation "What is a Circular Economy?"

¹⁶² Interview with Vaughn Cassidy, Office of Policy and Sustainable Practices, September 30, 2021; and Tennessee Department of Environment and Conservation 2021a.

¹⁶³ Email from Mike McClanahan, outreach section manager, Highway Beautification Office, TDOT, October 7, 2022.

Continued and consistent statewide coordination and a strategic plan are two best practices that a few other states are working on.

make the city zero waste and develop a circular economy.¹⁶⁴ And several companies in Tennessee are working on technologies that will support a circular economy, including Eastman, Domtar, and Rockwood Sustainable Solutions.¹⁶⁵

Extended producer responsibility (EPR) laws are another strategy that states can use for reducing waste and supporting a circular economy. EPR laws aim to reduce the amount of consumer product materials and packaging by putting the responsibility for dealing with product and packaging waste on manufacturers and the companies selling the products, rather than local governments and consumers.¹⁶⁶ Thirty-three states have some type of EPR law affecting different types of products,¹⁶⁷ and since 2020, four states—California, Colorado, Maine, and Oregon—have passed EPR laws. A few, including Tennessee, have considered legislation but not yet passed any.¹⁶⁸ California’s 2022 law could have a national effect because to comply with the law, companies will create new packaging for use in many states, not just in California.¹⁶⁹

Other states have established a permanent litter task force or committee that coordinates efforts, and some are developing state plans.

Continued and consistent statewide coordination and a strategic plan are two best practices that a few other states are working on. In Tennessee, there are many state agencies, local governments, and nongovernment organizations that are doing a lot to address litter and illegal dumping. However, stakeholders, including representatives of TDOT, the Tennessee Chamber of Commerce and Industry, Keep Tennessee Beautiful, and the Tennessee Wildlife Federation, have said that the many entities’ efforts are not coordinated, and a permanent statewide group would be helpful.¹⁷⁰ A diverse group could support and improve the efficacy of the various entities, share ideas, and be a place for local governments to seek assistance and connect with resources. Both CTAS and MTAS help local governments with specific issues, including litter and dumping, and leaders of both

¹⁶⁴ Interview with Janet Boscarino, executive director, Clean Memphis, September 9, 2021; and Memphis Transformed “Cleanest City in the World?”

¹⁶⁵ Interviews with Bradley Jackson, president & chief executive officer, Tennessee Chamber of Commerce & Industry, August 31, 2021; and Lincoln Young, president, Tennessee Recycling Coalition, October 4, and October 26, 2021.

¹⁶⁶ Ehisen 2022; and National Caucus of Environmental Legislators “Extended Producer Responsibility (EPR).”

¹⁶⁷ Product Stewardship Institute “U.S. EPR Laws.”

¹⁶⁸ Elliott 2022; and Tennessee Department of Environment and Conservation 2015.

¹⁶⁹ Ehisen 2022.

¹⁷⁰ Interviews with Shawn Bible, office manager, Highway Beautification Office, TDOT, July 12, 2021, and May 20, 2022; Bradley Jackson, president & chief executive officer, Tennessee Chamber of Commerce & Industry, August 31, 2021; Missy Marshall, executive director, Keep Tennessee Beautiful, July 21, 2021; and Mike Butler, chief executive officer, Tennessee Wildlife Federation, July 6, 2021.

organizations also support and would like to participate in an ongoing statewide group.¹⁷¹ They said it would be beneficial for finding solutions involving multiple jurisdictions and entities.

A statewide litter group has been recently proposed in Tennessee. In 2022, Senate Bill 2693 by Senator Briggs and House Bill 2759 by Representative Faison—the CLEAN Act—proposed a statewide, systemic approach led by a statewide litter commission that would, in addition to several other directives, “develop and implement a statewide litter program to comprehensively address litter prevention and reduction.”¹⁷² The legislation proposed 13 members that would serve on the commission, which would have had rule-making authority, including representatives of county governments; the agriculture and solid waste industries; conservation community; manufacturers or distributors of and retailers who sell or give away beverage containers or carryout bags; businesses that use recycled glass, aluminum, or plastic in their manufacturing operations; and the departments of environment and conservation, transportation, and agriculture. The bills didn’t pass.

Other states have created or are in the process of creating a litter task force or a state strategic action plan to address litter. Pennsylvania completed its litter action plan in 2021.¹⁷³ Before beginning work on the plan, the state conducted research on litter, its cost, and people’s attitudes towards it and used that data to inform the development of the plan. The state Department of Environmental Protection (DEP) and Department of Transportation partnered with Keep Pennsylvania Beautiful to lead the effort, involving state agencies, local governments, community groups, legislators, and businesses, and through four diverse workgroups, focused on litter education and outreach, infrastructure, litter laws and enforcement, and partnerships. The resulting litter action plan emphasizes the role that each member of society plays to reduce and prevent litter and recommends many actions that state government, the legislature, local governments, businesses, and the general public can take. While the actions are not mandated, the DEP is leading an inter-agency state group that is beginning to implement actions at the state-level.¹⁷⁴

Other states have created or are in the process of creating a litter task force or a state strategic action plan to address litter.

¹⁷¹ Emails from Jon Walden, executive director, University of Tennessee County Technical Assistance Service, October 13, 2022; and Kim Raia, environmental consultant, University of Tennessee County Technical Assistance Service, September 8, 2022; and interviews with Margaret Norris, executive director, University of Tennessee, Municipal Technical Advisory Service, December 21, 2022; and Chuck Downham, municipal management consultant, University of Tennessee, Municipal Technical Advisory Service, September 9, 2022.

¹⁷² Interview with Mike Butler, chief executive officer, Tennessee Wildlife Federation, July 6, 2021.

¹⁷³ Pennsylvania Department of Environmental Protection and Department of Transportation 2021; interview with Kate Cole, policy director, Pennsylvania Department of Environmental Protection, September 15, 2022; and email from Shannon Reiter, president, Keep Pennsylvania Beautiful, September 6, 2022.

¹⁷⁴ Interview with Kate Cole, policy director, Pennsylvania Department of Environmental Protection, September 15, 2022.

The South Carolina litter commission approved a statewide strategic plan, and it has been focusing on specific goal areas, such as community service and illegal dumping, and reports to the state legislature every two years.

Louisiana is also moving forward with a statewide effort. By executive order, the state created the Governor’s Task Force on Statewide Litter Abatement and Beautification to work on policy solutions, education, and abatement activities to address litter.¹⁷⁵ The 26-member temporary group, led by Keep Louisiana Beautiful, held a statewide litter summit and identified recommendations and priorities for the state. The recommendations include actions in several broad categories covering education, enforcement, recycling, cleanup, and beautification.¹⁷⁶ Keep Louisiana Beautiful is beginning to implement some of the initiatives such as a visible litter study, online toolkit, and state action plan.¹⁷⁷ However, the state does not have a permanent, formal structure to address litter.

In 2015, South Carolina passed a law that created a permanent statewide litter commission to establish and implement a strategic plan to reduce litter, educate, and evaluate effectiveness of programs.¹⁷⁸ Commission members include several state departments, court administration, Palmetto Pride, Keep South Carolina Beautiful, and representatives of the trucking industry, sheriffs, counties, and municipalities. In 2016, the commission approved a statewide strategic plan,¹⁷⁹ and it has been focusing on specific goal areas, such as community service and illegal dumping, and reports to the state legislature every two years. An initial accomplishment is the publication of a best practices guide in 2020 to help local communities direct more individuals sentenced to community service for littering into roadside cleanup programs.¹⁸⁰

¹⁷⁵ State of Louisiana Executive Department, Executive Order Number JBE 2022-3; and interview with Cecile Carson, chief executive officer, Carson Consulting, February 2, 2022.

¹⁷⁶ Governor’s Task Force on Statewide Litter Abatement and Beautification 2022.

¹⁷⁷ Interview with Susan Russell, executive director, Keep Louisiana Beautiful, September 15, 2022.

¹⁷⁸ South Carolina General Assembly 121st Session, 2015-2016, A8, R18, H3035; and South Carolina Litter Commission 2018.

¹⁷⁹ South Carolina Litter Commission 2016.

¹⁸⁰ South Carolina Litter Commission 2020.

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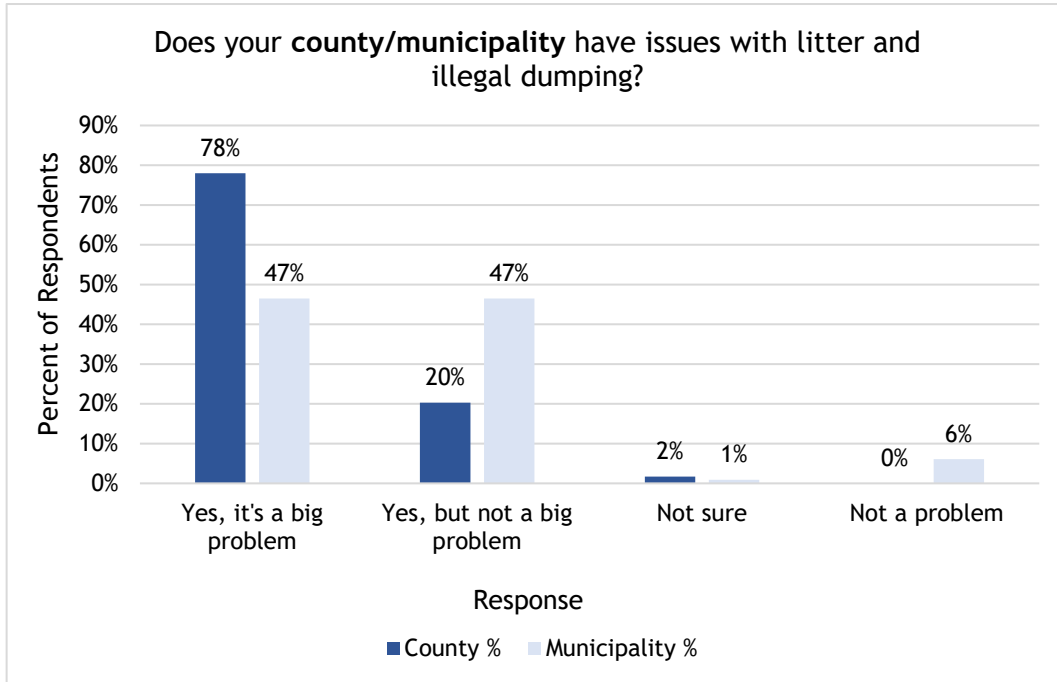
Pamela Willingham, Assistant Director
Keep Tennessee Beautiful

Ken Yager, State Senator
District 12, Tennessee

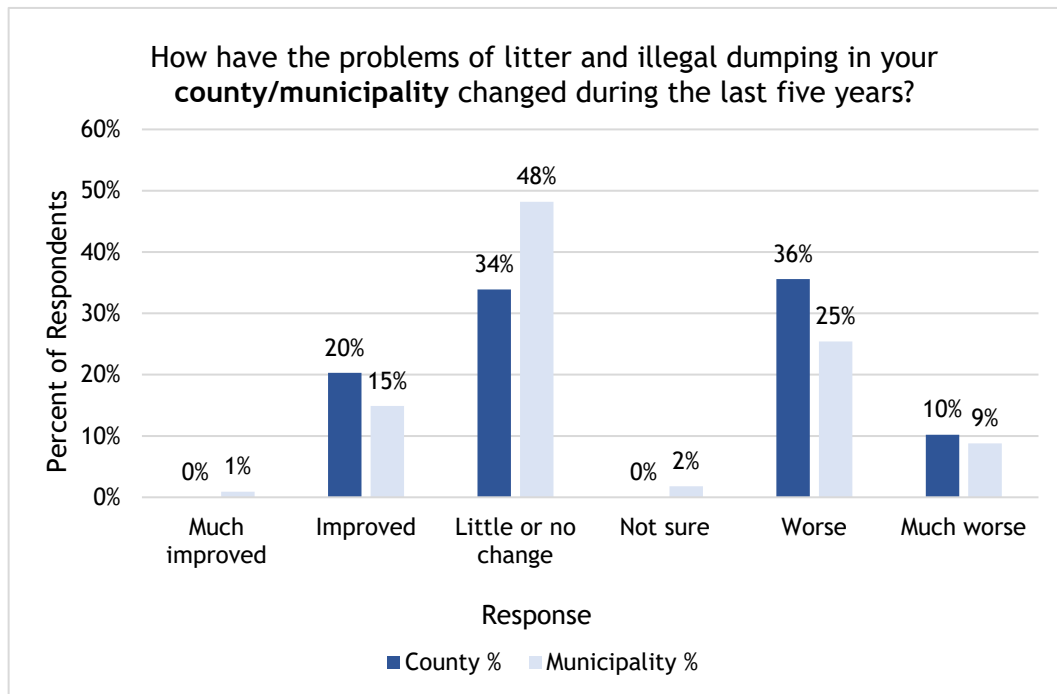
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President, Rockwood Sustainable Solutions

Nancy Zion, Co-Chair Advisor
Tennessee Solid Waste Directors Association
Former Director, Williamson County Solid Waste
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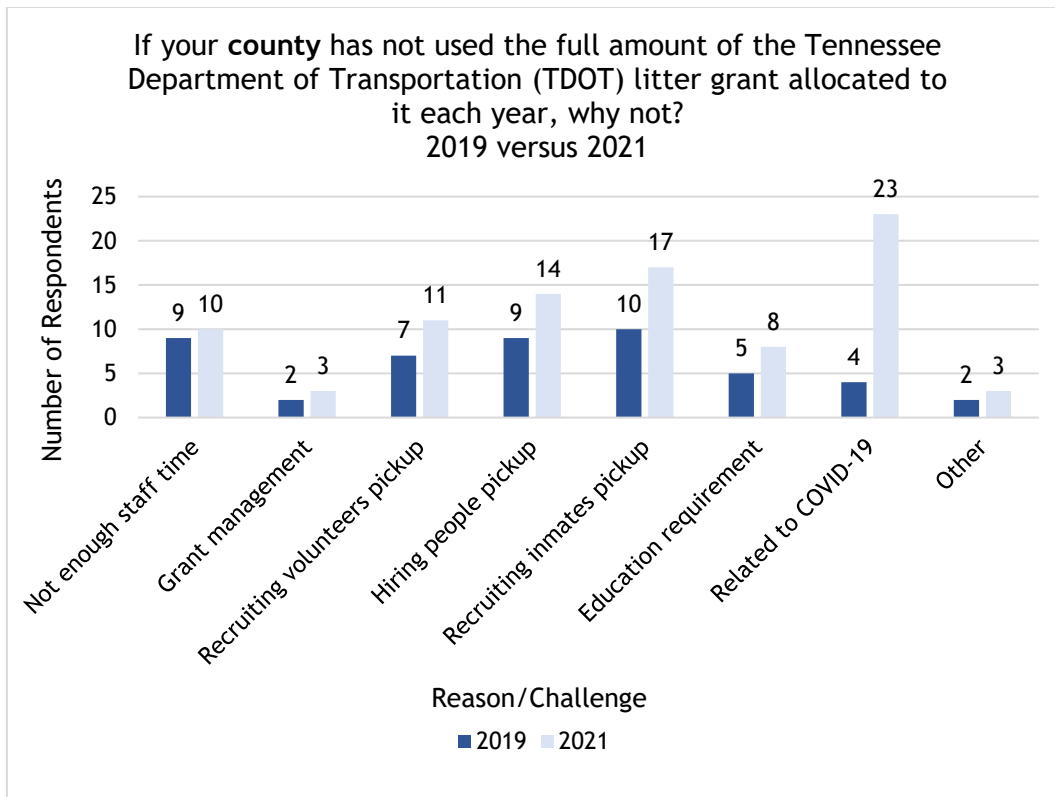
Appendix A: County and City Litter and Illegal Dumping Survey Results



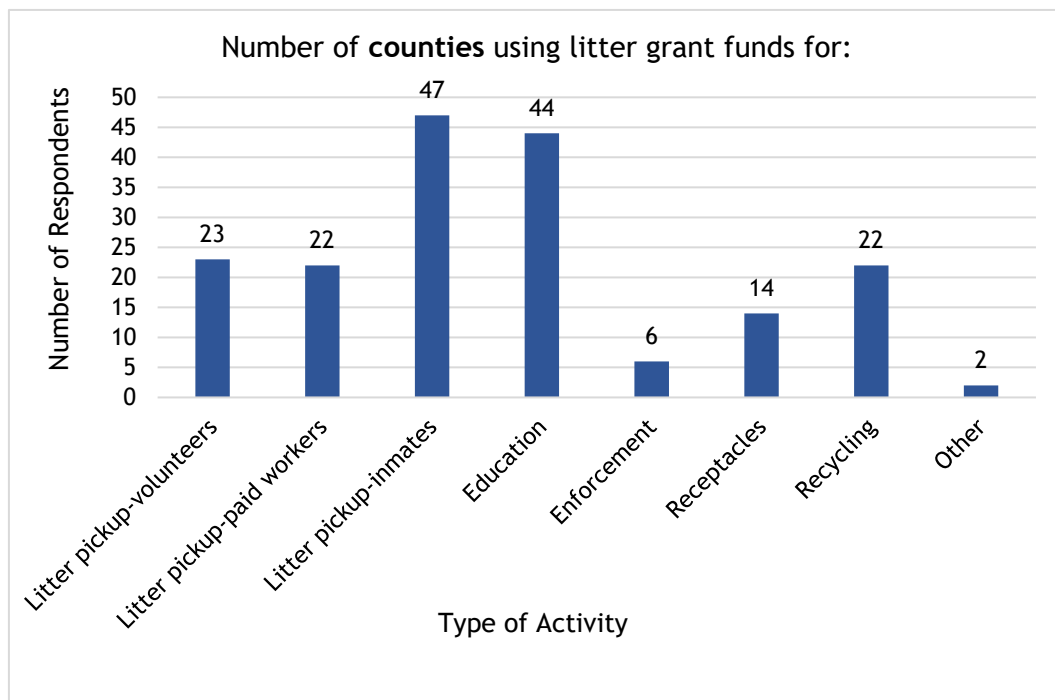
Note: 59 counties and 114 cities responded to the question.



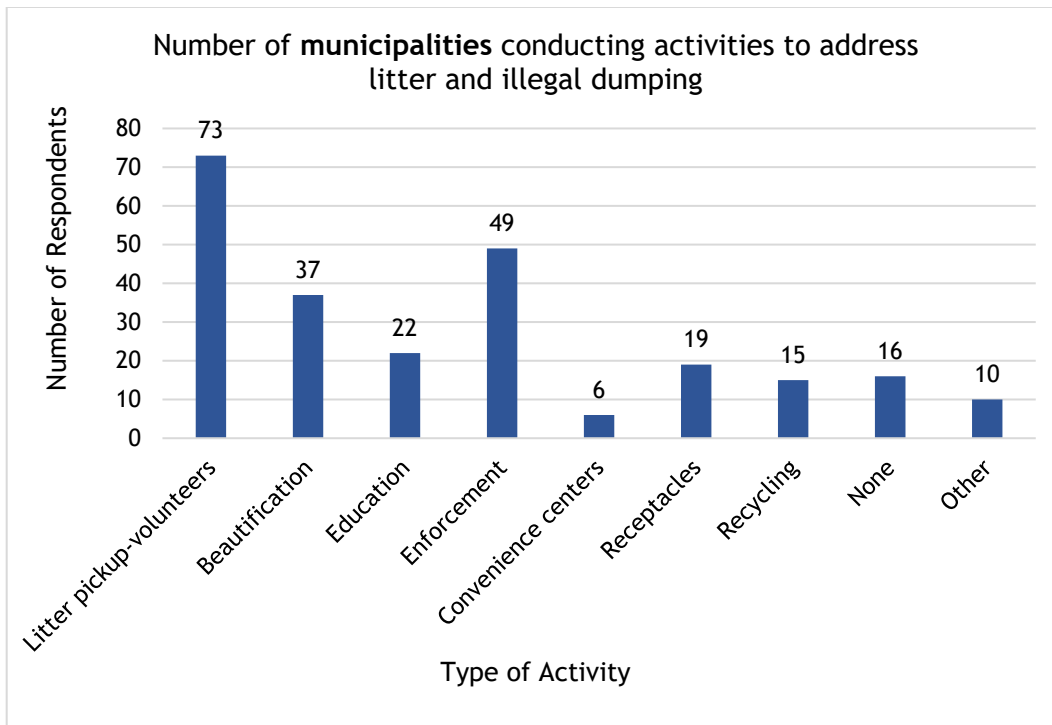
Note: 59 counties and 114 cities responded to the question.



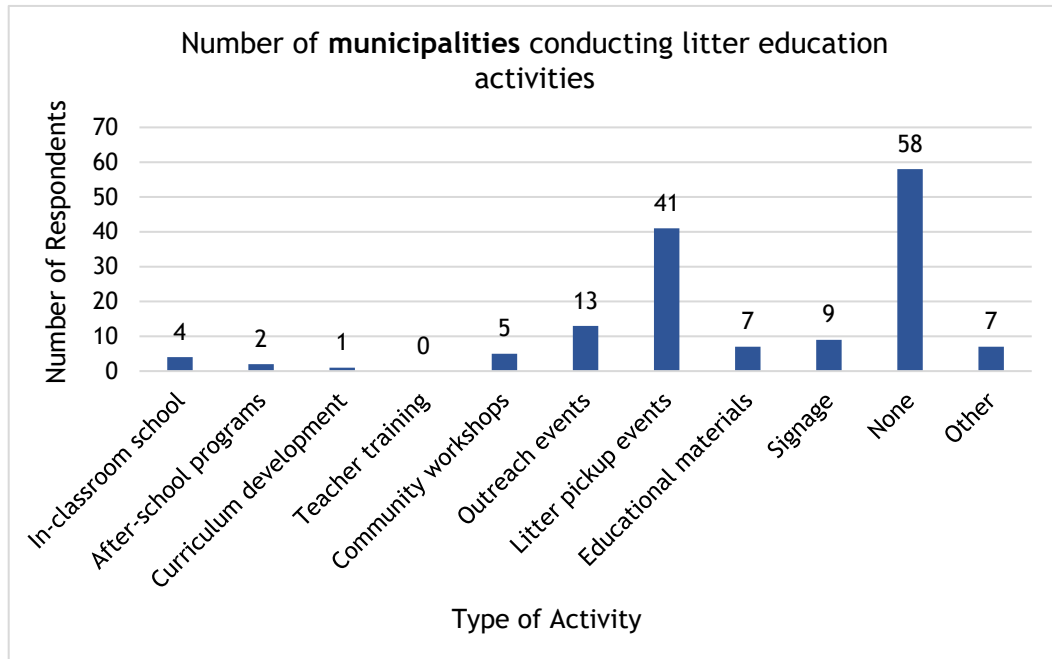
Note: More than one response was allowed, and 35 counties responded to the question.



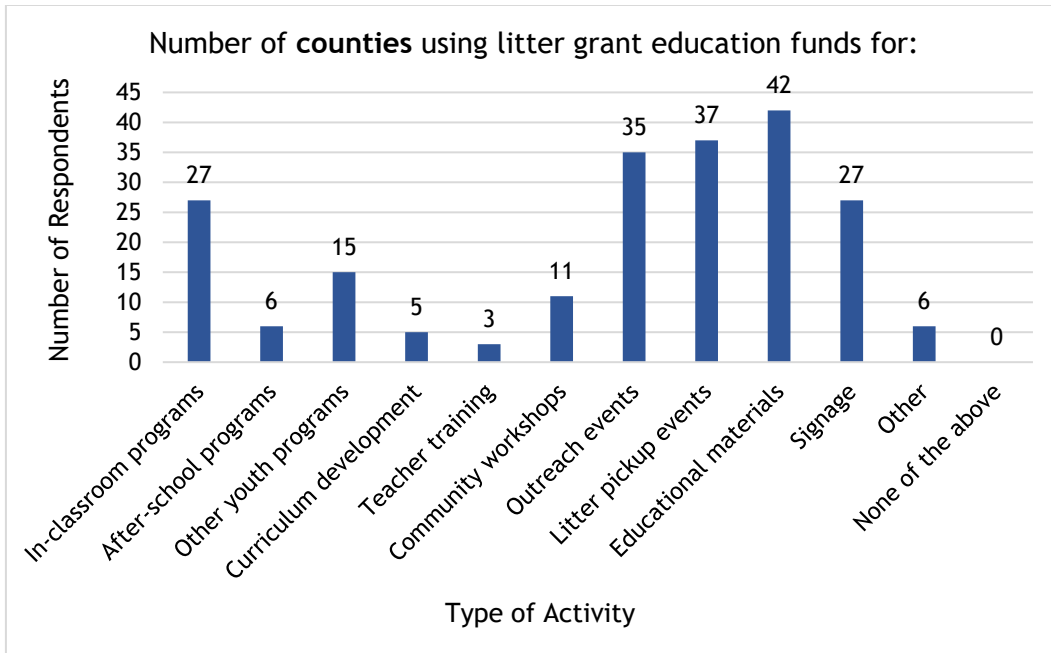
Note: More than one response was allowed, and 53 counties responded to the question.



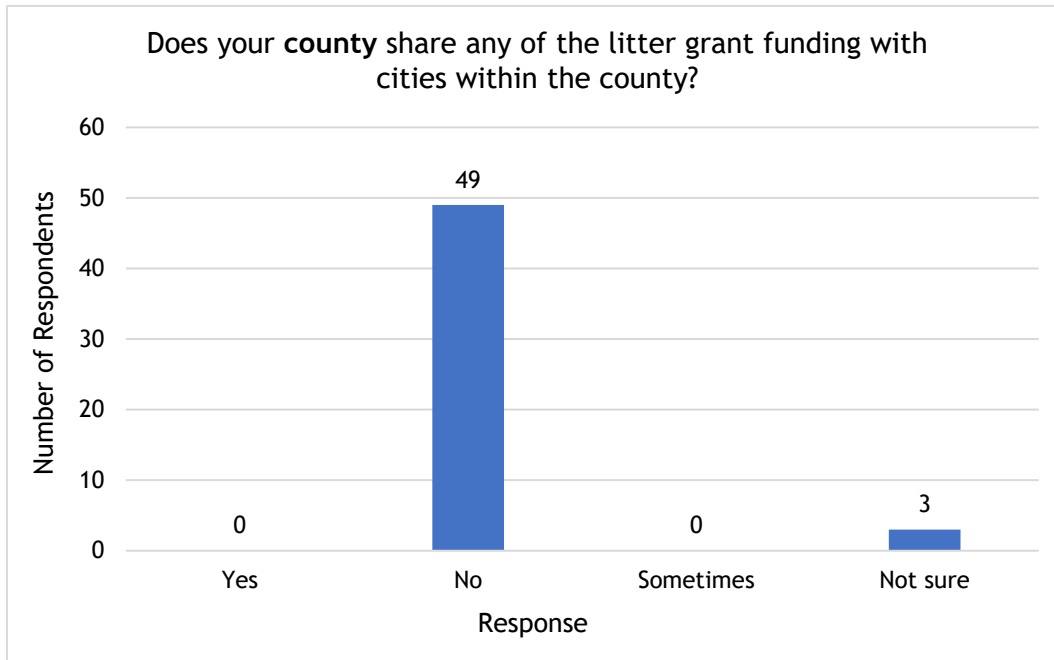
Note: More than one response was allowed, and 107 cities responded to the question.



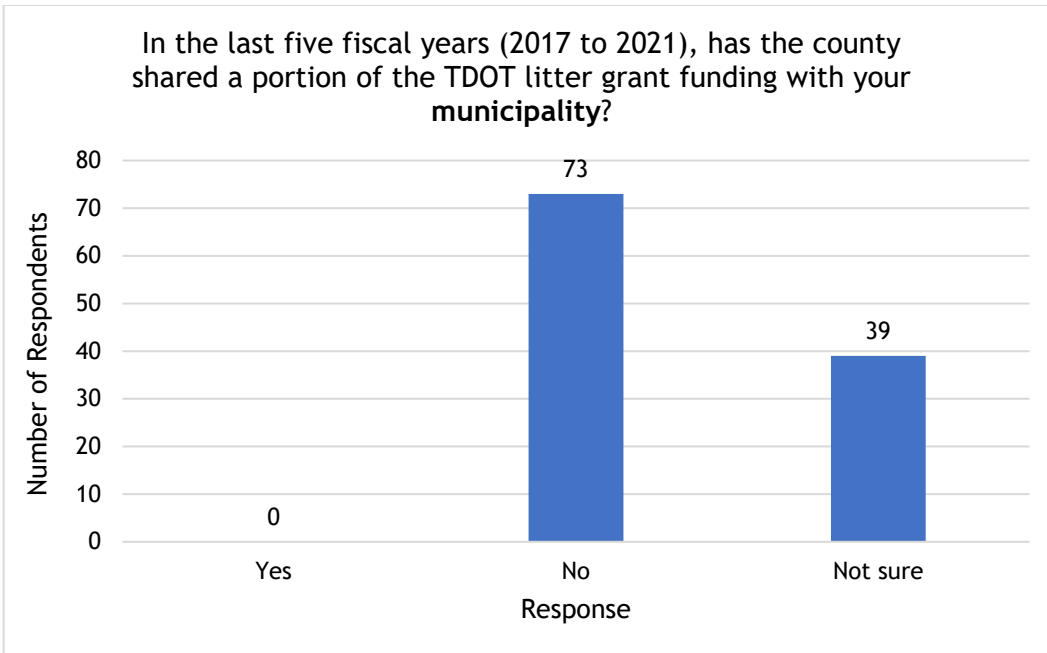
Note: More than one response was allowed, and 105 cities responded to the question.



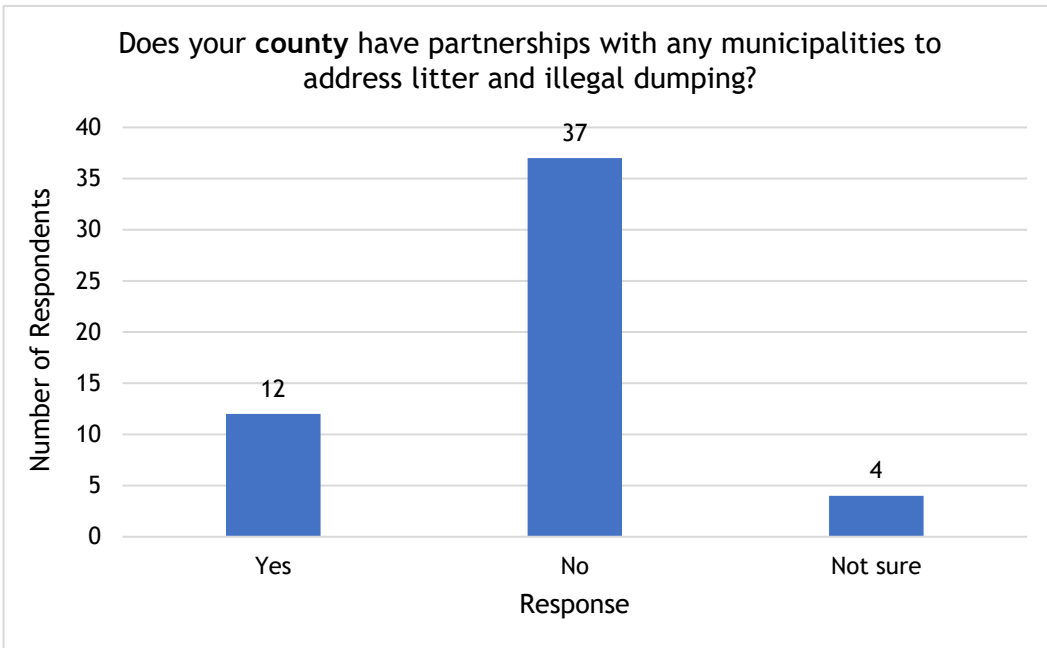
Note: More than one response was allowed, and 53 counties responded to the question.



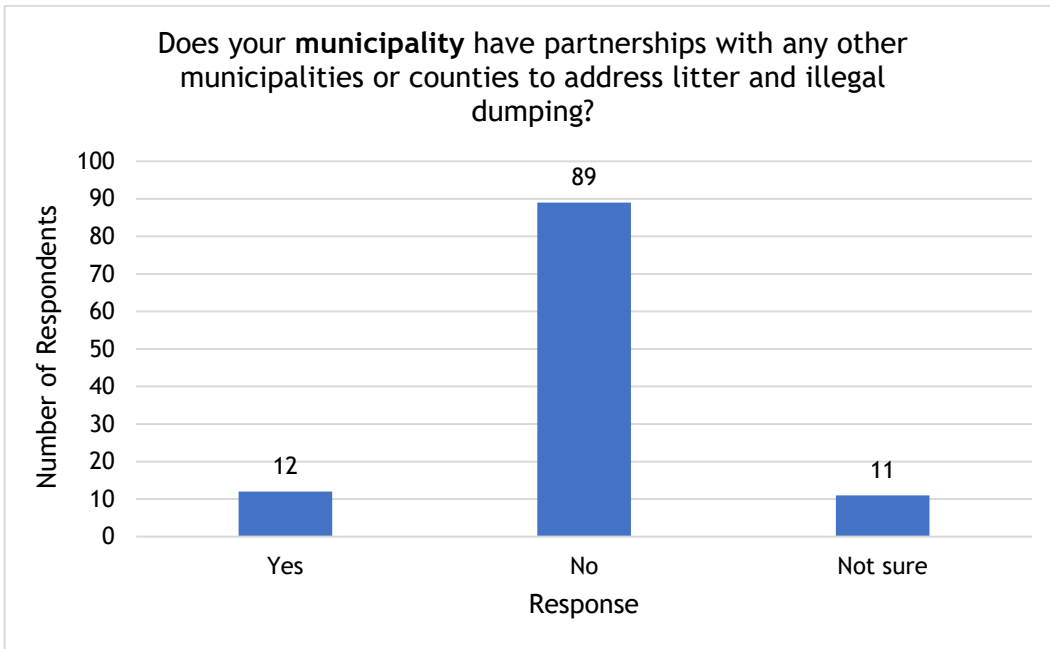
Note: 52 counties responded to the question.



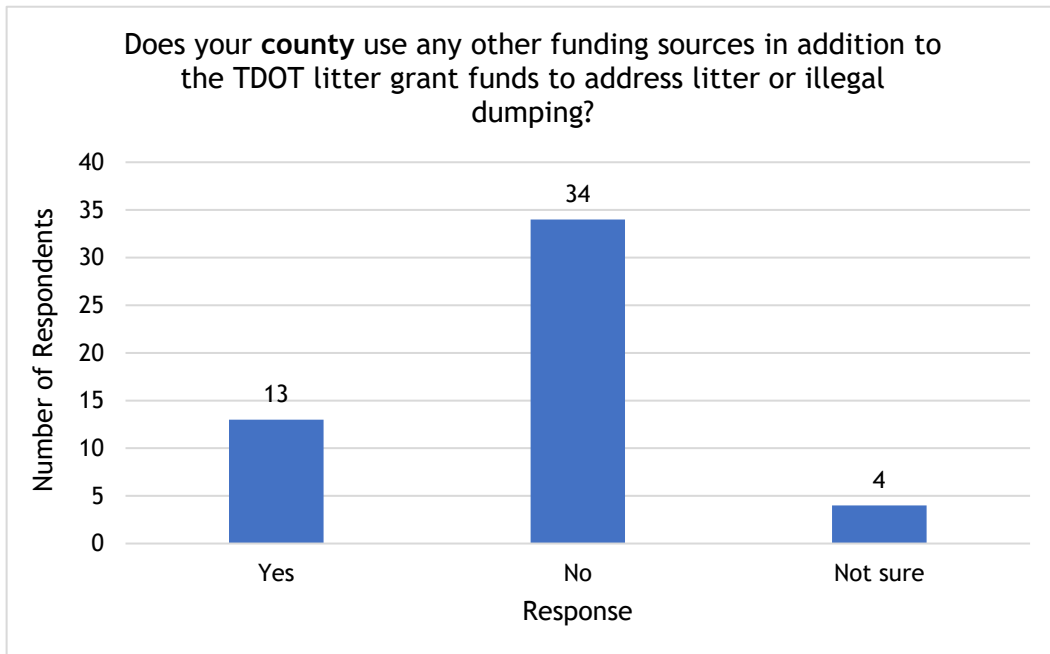
Note: 112 cities responded to the question.



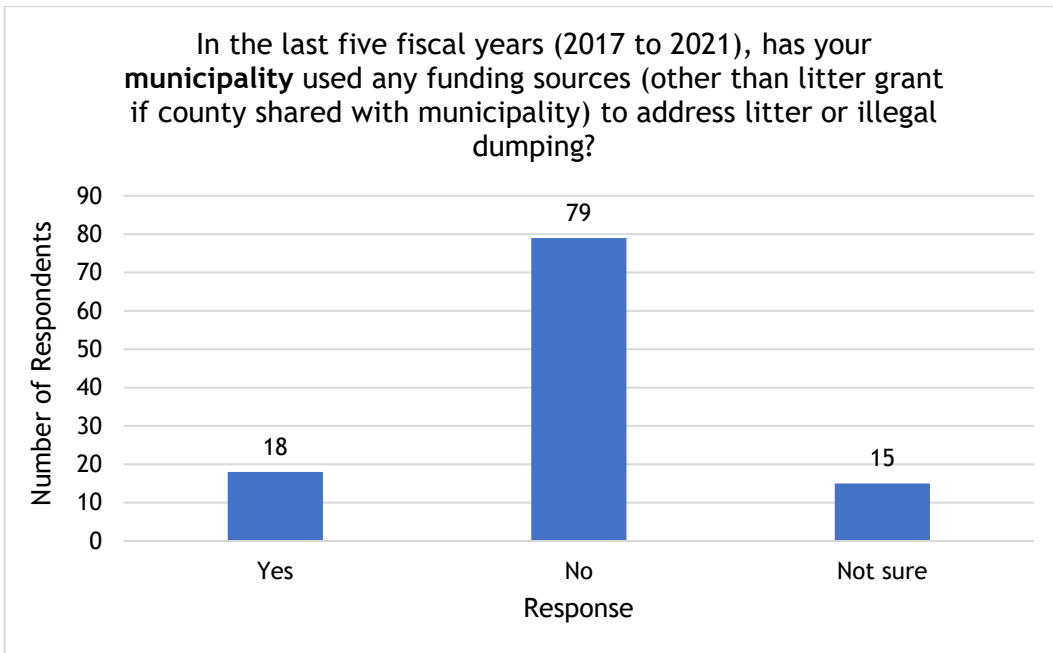
Note: 53 counties responded to the question.



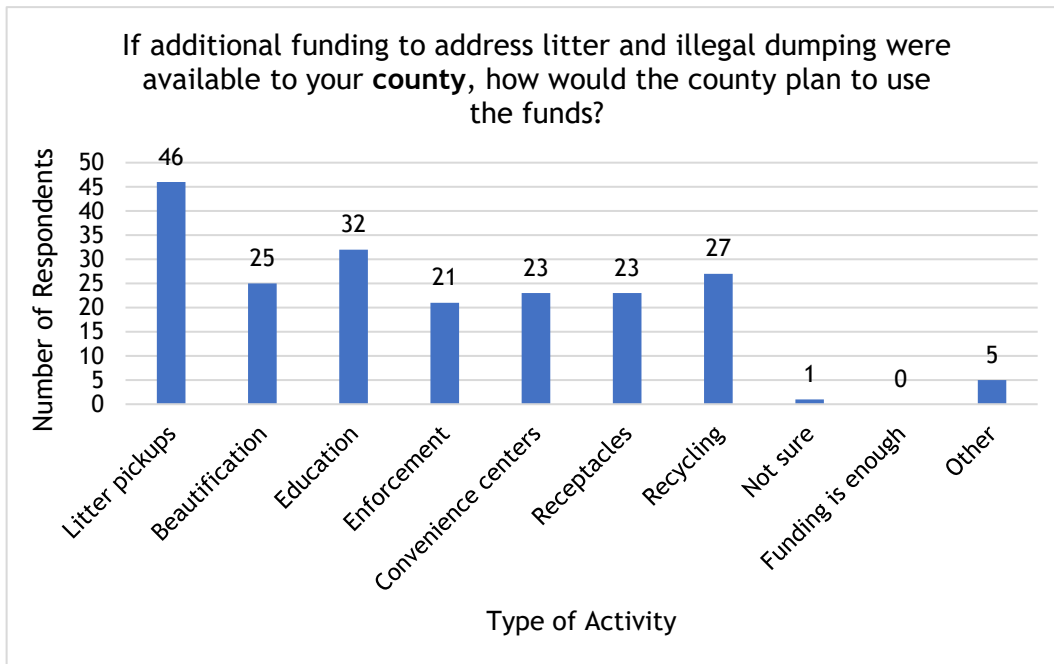
Note: 112 cities responded to the question.



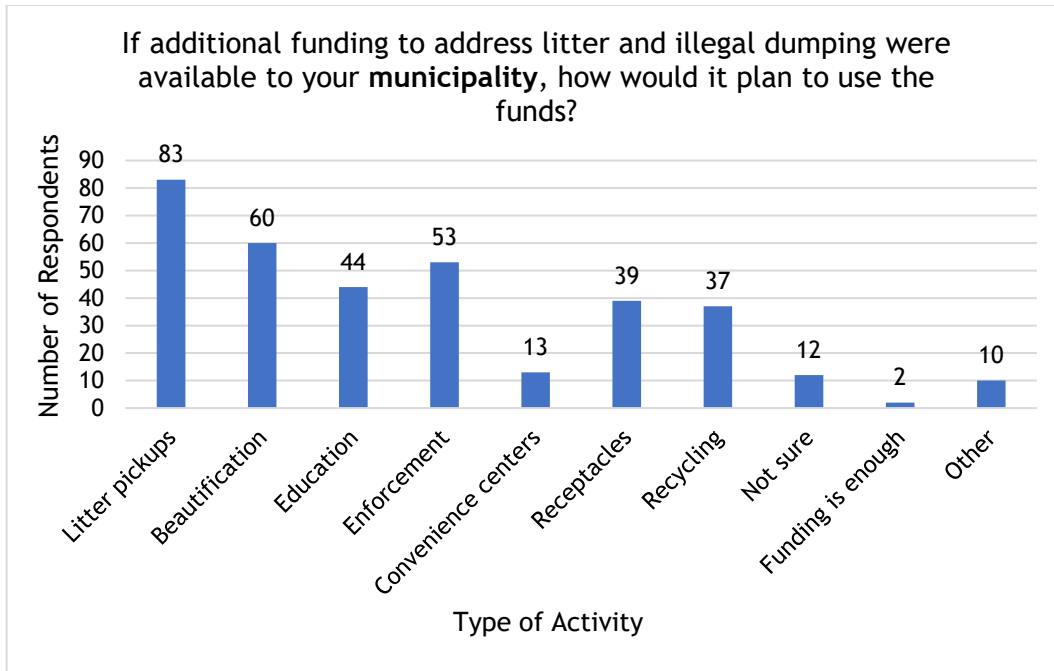
Note: 51 counties responded to the question.



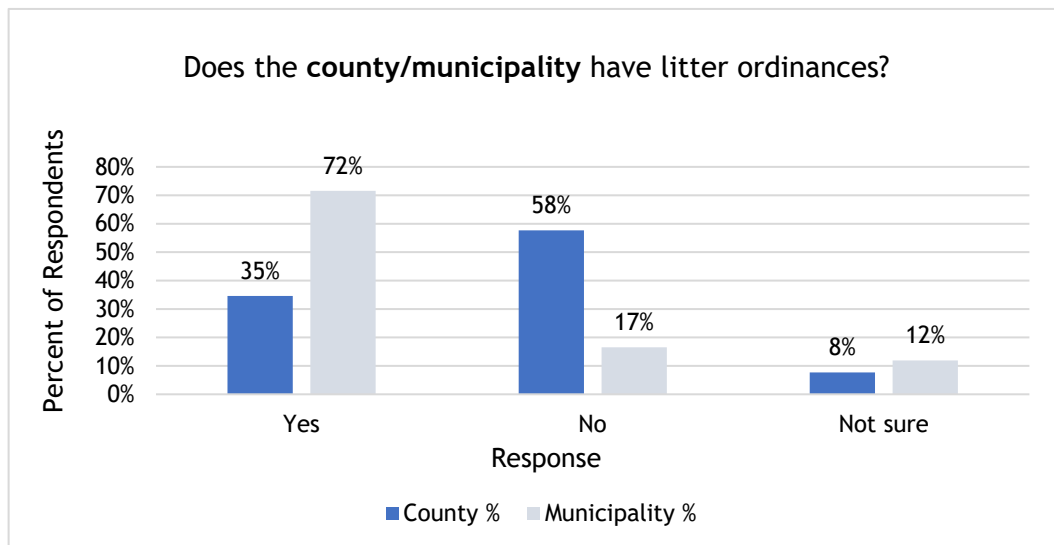
Note: 112 cities responded to the question.



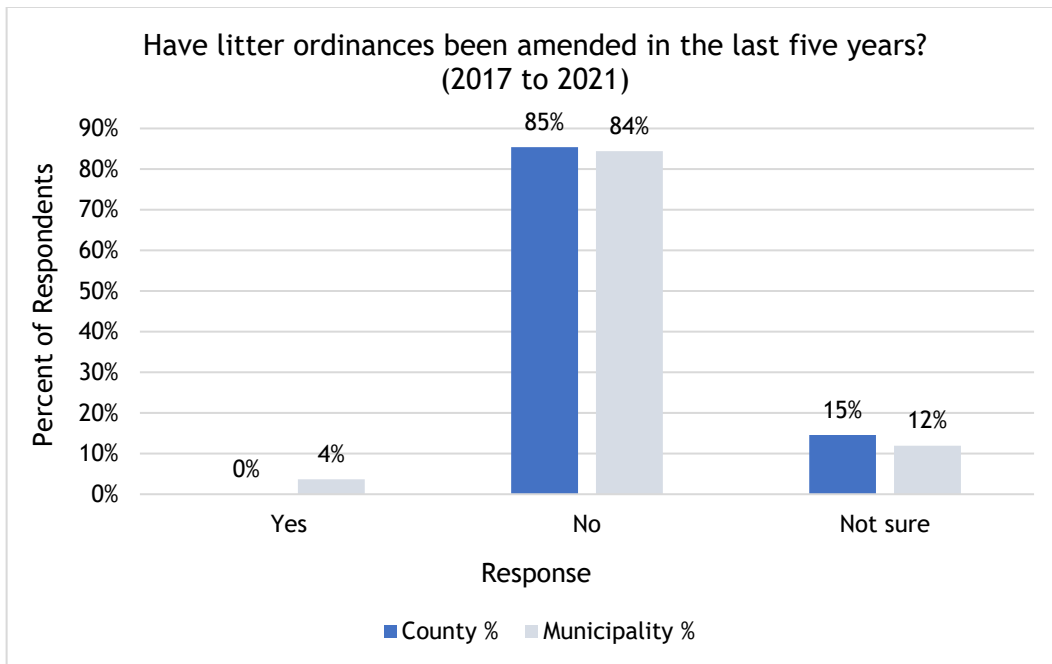
Note: More than one response was allowed, and 52 counties responded to the question.



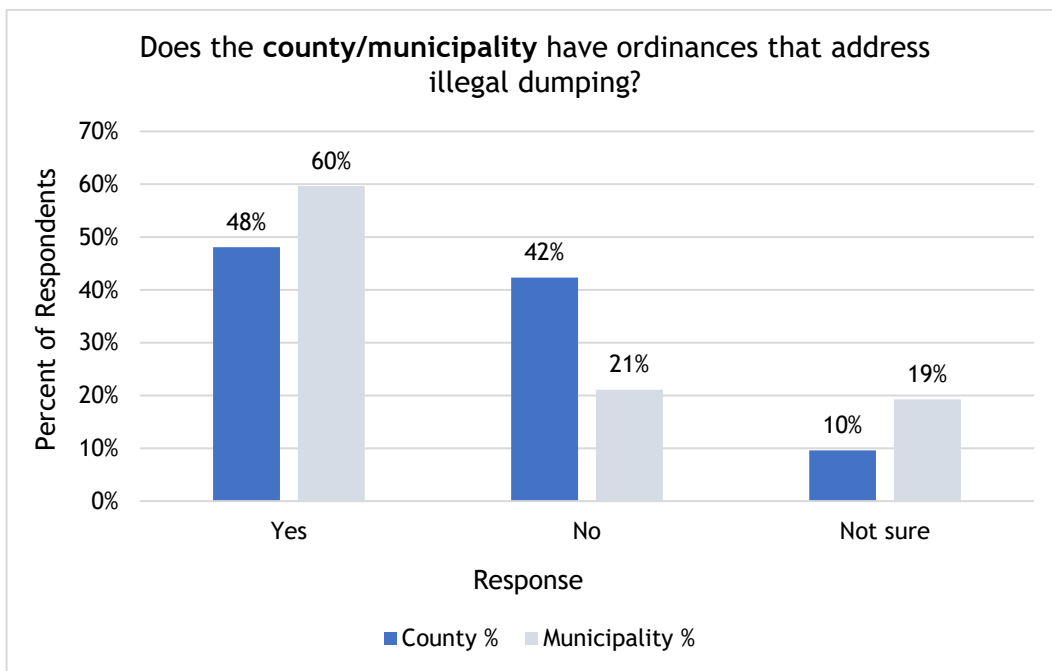
Note: More than one response was allowed, and 110 cities responded to the question.



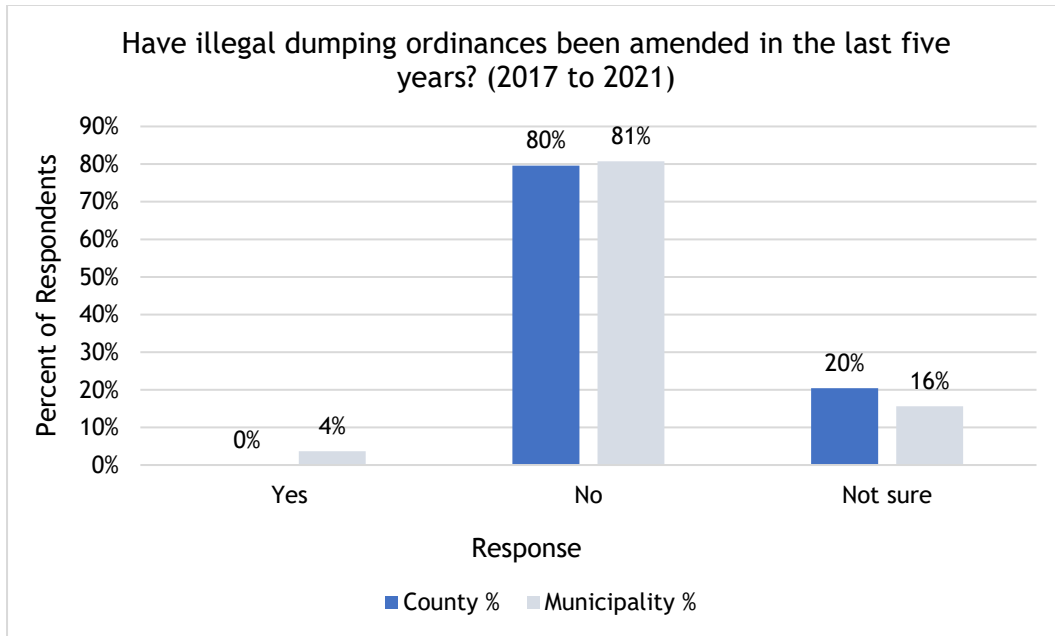
Note: 52 counties and 109 cities responded to the question.



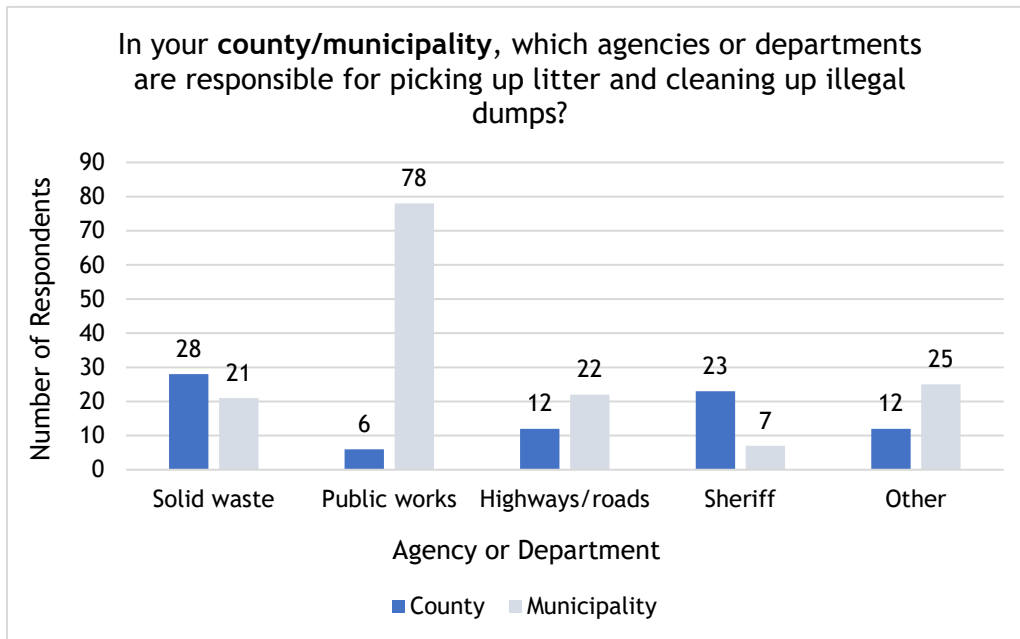
Note: 48 counties and 109 cities responded to the question.



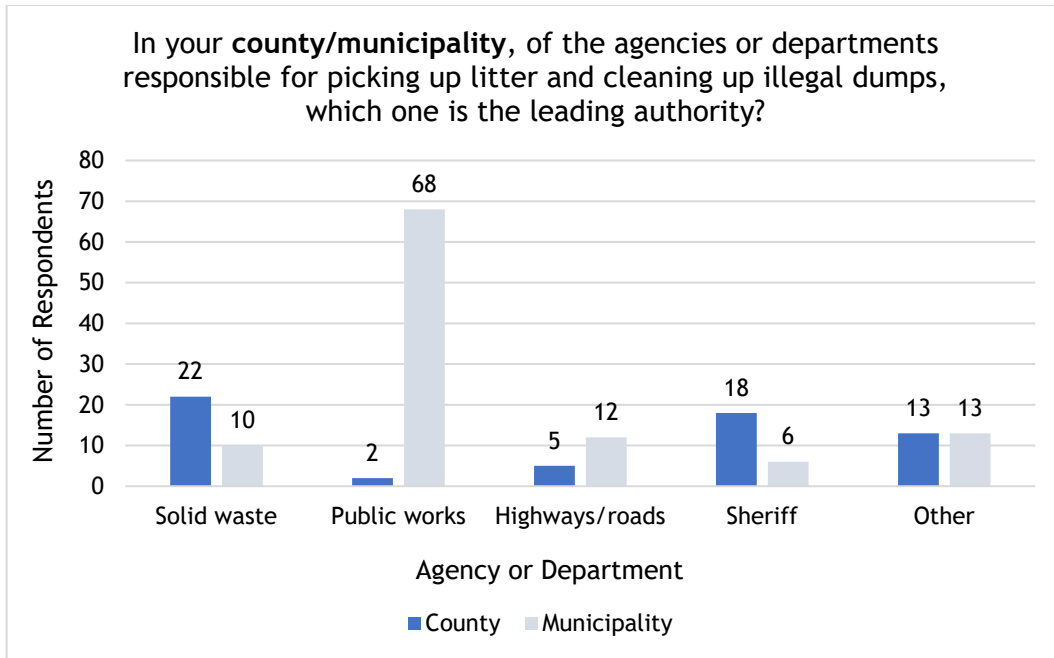
Note: 52 counties and 109 cities responded to the question.



Note: 49 counties and 109 cities responded to the question.



Note: More than one response was allowed, and 52 counties and 107 cities responded to the question.



Note: More than one response was allowed, and 52 counties and 103 cities responded to the question.

Appendix B: Policy Suggestions from the 2016 Tennessee Statewide Litter Study

Prepared for the Tennessee Department of Transportation
by nFront Consulting LLC

Abatement Policies & Tactics

Leveraging the full extent of basic study results, as well as the detailed econometric modeling results tables presented earlier in this Report, this section provides a series of detailed suggestions for abatement, messaging, and tactics. First, a series of prevailing themes that captures the overarching relationships suggested by the range of analysis are provided. This is followed by a more detailed listing of strategies and tactics that reflect implications across all samples collected, which feeds into specific areas of focus for individual roadway classifications. *As noted elsewhere in this Report, the conclusions and suggested tactics represented herein are directly driven by the analysis conducted over the course of this Study, and do not reflect nor endorse any preconceived notions regarding the efficacy of a given policy.* Furthermore, the Econometric Analysis section contains quantification of each individual variable resulting from the various models, which should be cross-referenced to the suggested strategies and tactics below. nFront has focused on “low hanging fruit,” top-priority items in this section that represent factors and activities that TDOT is believed to have control over. There may be additional variables or factors represented in the econometric modeling results section that could warrant effort as a function of TDOT’s long-term resource constraints.

Prevailing Themes

- **Abatement messaging and policy should take a compartmentalized, prioritized approach.**

Based on the range of analysis conducted, it is clear that factors that impact litter are different in magnitude and makeup by roadway classification. While litter per mile on Interstates far outpaces the same metrics on other roadways, the same tactics and messaging cannot unilaterally be applied to mitigate long-term litter accumulation on Interstates as on other roads. Additionally, the econometric analysis can be used to prioritize the types of messaging and resource allocations afforded a particular roadway classification.

- **The most prevailing meta-theme is ownership.**

Across all of the analysis conducted, there is a strong relationship between variables that define a sense of personal ownership (or lack thereof) and the amount of litter found on a given roadway.

- **Socioeconomics matters, but primarily closer to home.**

The econometric results suggest that as you move down from Interstates to Local Roads, socioeconomic factors are far more influential in determining differences between one sample and another. In contrast, contextual variables that provide an opportunity for litter to accumulate have a significant impact irrespective of socioeconomic or demographic makeup as you move away from localities. This is a critical distinction, in that the analysis conducted in this Study suggests that opportunities for litter to accrue that reflect primary conditions associated with a roadway outweigh economic distinctions surrounding the roadway for the majority of samples evaluated. Demographics, in general, also reflected limited significance, and the impact of younger cohorts was mixed to insignificant.

Policy Implications - All Roadway Types & Samples

- Advertising and messaging should solicit the same sense of respect/ownership for Interstates as the street you live on. Ownership related variables can help solicit a sense of pride in surrounding roadways and a higher overall aesthetic standard. Areas where building distance from roads is smaller, and which are predominantly residential in nature have dramatically less litter, which could serve as the messaging benchmark.
- Interstate litter per mile far outpaces other roadway classifications. Interstate litter should be a top abatement and messaging priority.
- Low-Income and public housing neighborhoods should be targeted for strategies. These areas correspond to the overall theme that limited feelings of ownership are related to higher litter per mile, all else equal.
- The econometric analysis suggests that TDOT and supportive partners can target certain types of businesses in messaging to engage in ways to improve ownership of areas. These businesses may also have specific ideas regarding how to better contain litter that can be gleaned through more direct interaction.
- Proximity to rest stops was found to significantly impact litter per mile (as applicable). Tactics to better address this contextual variable include the following:
 - Littering Signage (littering fine notice, checking truck beds for loose trash, etc.)

- Adequate and maintained trash/recycling receptacles (among parking lots and not just by restrooms/indoor facilities)
- Improved overall rest stop maintenance
- Proximity to interstate and highway on-ramps and exit ramps and proximity to traffic lights and stop sign intersections heading into and out of higher density commercial areas were another major contextual variable that related strongly to increased litter prevalence. These situations provide an excellent target for signage, advertising and messaging in terms of location/context.
- General aesthetic variables and conditions were strongly related to litter prevalence, which supports the notion that community condition does beget litter. Improved roadside maintenance, fines for derelict buildings, and providing incentives for re-development of brownfield sites can help reduce the impact of environmental conditions on litter per mile.
- Consistent with the Premise Document, designated truck routes were found to have higher litter per mile, all else equal. There may not be any direct control of such routes as it relates to TDOT activities, but TDOT should investigate ways to target messaging on such routes.
- Proximity to littered material sources, such as fast food restaurants, and their significant impact on litter per mile, suggest the following tactics.
 - Creation and enforcement of rules associated with trash receptacles at fast food/convenience stores (e.g. outdoor receptacles must be available by building egress points and in parking lot and maintained).
 - Targeted campaigns regarding littering in concert with fast food providers (e.g., drive-through packaging with anti-littering messaging).
- The TDOT should consider re-evaluating the efficacy of anti-litter signage. The econometric analysis indicates that anti-litter signage has limited to no impact on litter, and in the case of US Highways, may be serving the converse purpose relative to its intent.
- Negligent vehicle debris and packaging was the single most contributory component of litter per mile across all of the roadway types. The following tactics may help mitigate this class of litter.
 - Improve vehicle cleanups after wrecks in order to reduce negligent litter.
 - Utilize abatement crews to regularly drive the Tennessee Interstate system to pick up vehicle debris on the edge of roadways.
 - Consider a mobile reporting system (e.g. information derived from Waze or a similar application) where drivers can report the location of their

- wrecks/blowouts, in order to support more comprehensive cleanup of such events.
 - Improve road surface transitions for paving/lane closures.
 - Re-evaluate efficacy of anti-litter signage around work zones, as the signage may in fact be serving the converse purpose relative to its intent.
- Increase policing and partnerships to reduce negligent litter. Negligent litter constitutes 72% of total litter across all of the roadway types (and between 56% and 80% for specific roadway types).
 - Increase secure loads enforcement by state highway patrol.
 - Partner with the waste collection industry to reduce unsecured waste in hauling vehicles.
- Target Adapt a Highway (“AAH”) and maintenance efforts to high traffic volume roadway stretches (e.g., inside and heading into/out of high-density areas).
 - AAH activity at the county level corresponds with measurements of higher litter per mile, which supports the notion that AAH efforts are being strategically targeted towards areas that are known to be more littered.
 - Investigations of AAH activity suggest that TDOT should look to enforce actual cleanups, as feedback from representatives suggested that certain clean-ups were not being performed.
 - TDOT has indicated that there may be a possibility that AAH activity could be extended to Interstates.

Tactics & Key Issues - Interstates

- Negligence from Open-Bed Vehicles should be one of the top priorities of any litter messaging and abatement campaign focused on Interstates.
- Expansion of AAH to Interstates may help contain further litter accumulation, and TDOT should engage in a thorough examination of accountabilities for AAH activity within counties, as even though there are no AAH activities currently on Interstates, the results of the nFront team’s interaction with representatives suggests that some clean-ups on other roadways are not being done.
- Steps should be taken to better manage backups/traffic during road expansion. Examples of tactics in this realm include:
 - Anti-littering ads during rush hour
 - Strategic messaging in known traffic backup areas

- The “usual suspects” (i.e. proximity to fast food & convenience stores) are documented as drivers of litter accumulation in prior studies. This Study has quantified those impacts on a per-store basis over a 3-mile radius. TDOT should partner with these stores to generate new ideas regarding messaging and how best to help these businesses get involved in the solution.
- No one group is immune from opportunities to litter with respect to Interstates. Consequently, in lieu of focusing on a particular group from a socioeconomic standpoint, efforts should focus on conditions (primary factors for a given site) that provide opportunities to litter on both a negligent and deliberate basis.

Tactics & Key Issues - State and U.S. Highways

- High persons per household areas may support locational messaging. The Woods and Poole and Census data provided to TDOT can serve as a platform for isolating these areas.
- As is the case with Interstates, convenience stores/fast food establishments provide context/opportunities to litter on State and US Highways, which should be the focus of both messaging and enforcement. Specific examples of tactics include:
 - Teaming with stores on anti-litter messaging such as messaging on take-out packaging
 - Providing a volunteer litter prevention plan (e.g. City of Laredo, TX) template for convenience stores/commercial establishments; The City of Laredo, TX requires commercial establishment operators to have two 55 gallon trash receptacles per 5,000 ft. of parking lot area, and an additional receptacle for every additional 2,500 feet of parking lot area; one highly visible anti-littering sign (in English and Spanish); and submittal of a litter prevention plan with site layouts and other information to certify that the plan will be followed (including location of receptacles and frequency of trash collection). This represents a publicly available example of how to approach such requirements.
 - Improve roadside maintenance (e.g. mow the grass), notably in lower-tier income areas.
 - Control blight (or mitigate negative externalities associated with poor site aesthetics).
 - Engage manufacturing establishments for ideas on how to better engender a sense of ownership for nearby roadways.

Tactics & Key Issues - Local Roads

- Local road initiatives should be prioritized in relative terms as a function of current litter prevalence. This is not to suggest that TDOT should “forget” about local roads, but that TDOT should recognize the imbalance of the abatement problem in light of the basic and detailed results presented herein.
- Low income & public housing areas, as identified by HUD at the tract level, should be a high priority target within the local road universe. These tracts are clearly distinct from other areas, but the results of the econometrics are consistent with the ownership differential theme. Tract-level information can help optimize resources as TDOT contemplates policy initiatives.
- Recognize the much broader issue of poverty and blight and the teaming that is required with other community organizations to achieve community improvement. In particular, damaged buildings and/or graffiti should be mitigated as part of targeted blight removal efforts. Examples of tactics in this realm include:
- Offer competitive funding for beautification projects (e.g., Governor’s Community Achievement Awards in Texas, which provides \$2,000,000 in grants for highway landscaping initiatives); TDOT should consider outreach to Keep Texas Beautiful for template and grant program development support.
- Promote competitive grants as part of AAH reengineering.

Tactics & Key Issues - Cigarette Butts

- Cigarette butt prevalence was found to be associated with lower levels of income and lifestyle characteristics (excessive drinking). These findings provide contextual opportunities for strategic ads/messaging.
- Blight and proximity to hardware stores/self-storage facilities were also significant drivers of cigarette butt prevalence. Similar tactics to those suggested above should be carried out to address the disproportionate number of cigarette butts found for samples with such characteristics. Prioritizing anti-cigarette butt litter messaging near hardware stores/self-storage facilities should be considered.
- Behavior of open-bed vehicle drivers should be subjected to additional monitoring and enforcement. Additionally, targeted ads should be developed in a manner that doesn’t profile open bed vehicles, but still relays some distinction and defines the problem in the context of specific behaviors.
- As noted in the basic results section of this Report, Marlboro is the third highest brand found as litter on Tennessee roadways. Additionally, Swisher Sweets

(flavored cigars) represent a significant portion of cigarette litter on a revenue adjusted basis. These findings suggest the following tactics:

- Prioritize anti-litter messaging on the Swisher and Marlboro demographics.
- Based on high-level research conducted by nFront in an effort to better understand the revenue-adjusted results for the Swisher brand, Swisher Sweets are individually packaged or come in packs of two as opposed to a pack of cigarettes, resulting in more litter opportunities. The tobacco wrap around a Swisher Sweet may also be used for other consumptive purposes, leaving the plastic tip to be discarded before use. These related activities may be a good opportunity for contextual ads.

As previously noted, the prevailing themes, global policy suggestions, and roadway specific tactics presented herein reflect a prioritized and compartmentalized approach that is directly informed by the results of the econometric modeling performed for the Study. TDOT should carefully review all available intelligence gathered during the Study, as well as the results of the parallel focus groups and attitudinal survey, to determine if additional or alternative approaches may be warranted in due consideration of TDOT's long term resource constraints.

Source: nFront Consulting LLC 2016.

Appendix C: Litter Grant Education Requirement by County Fiscal Year 2022-23

County	Total Allocation	Salaries plus Direct Cost	Required to be Spent on Education	Percent of Total Allocation Required to be Spent on Education
Anderson	\$ 52,100	\$ 36,470	\$ 15,630	30%
Bedford	51,900	38,925	12,975	25%
Benton	44,200	33,150	11,050	25%
Bledsoe	44,200	35,360	8,840	20%
Blount	74,000	51,800	22,200	30%
Bradley	65,300	45,710	19,590	30%
Campbell	47,700	35,775	11,925	25%
Cannon	44,200	35,360	8,840	20%
Carroll	48,800	34,160	14,640	30%
Carter	49,700	34,790	14,910	30%
Cheatham	44,200	33,150	11,050	25%
Chester	44,200	35,360	8,840	20%
Claiborne	48,500	36,375	12,125	25%
Clay	44,200	35,360	8,840	20%
Cocke	48,800	36,600	12,200	25%
Coffee	52,600	36,820	15,780	30%
Crockett	44,200	35,360	8,840	20%
Cumberland	63,000	44,100	18,900	30%
Davidson	188,600	122,590	66,010	35%
Decatur	44,200	35,360	8,840	20%
Dekalb	44,200	35,360	8,840	20%
Dickson	54,400	38,080	16,320	30%
Dyer	47,300	35,475	11,825	25%
Fayette	51,600	38,700	12,900	25%
Fentress	44,200	35,360	8,840	20%
Franklin	50,300	37,725	12,575	25%
Gibson	57,500	40,250	17,250	30%
Giles	52,200	36,540	15,660	30%
Grainger	44,200	33,150	11,050	25%
Greene	67,400	47,180	20,220	30%
Grundy	44,200	35,360	8,840	20%
Hamblen	47,700	33,390	14,310	30%
Hamilton	127,500	82,875	44,625	35%

County	Total Allocation	Salaries plus Direct Cost	Required to be Spent on Education	Percent of Total Allocation Required to be Spent on Education
Hancock	44,200	35,360	8,840	20%
Hardeman	45,700	34,275	11,425	25%
Hardin	48,200	36,150	12,050	25%
Hawkins	55,500	41,625	13,875	25%
Haywood	44,200	33,150	11,050	25%
Henderson	48,800	36,600	12,200	25%
Henry	51,400	35,980	15,420	30%
Hickman	48,900	36,675	12,225	25%
Houston	44,200	35,360	8,840	20%
Humphreys	44,200	33,150	11,050	25%
Jackson	44,200	35,360	8,840	20%
Jefferson	52,700	39,525	13,175	25%
Johnson	44,200	35,360	8,840	20%
Knox	171,400	111,410	59,990	35%
Lake	44,200	35,360	8,840	20%
Lauderdale	44,200	33,150	11,050	25%
Lawrence	58,500	40,950	17,550	30%
Lewis	44,200	35,360	8,840	20%
Lincoln	52,100	36,470	15,630	30%
Loudon	49,200	36,900	12,300	25%
Macon	44,200	33,150	11,050	25%
Madison	63,200	44,240	18,960	30%
Marion	44,200	33,150	11,050	25%
Marshall	45,100	33,825	11,275	25%
Maury	67,600	47,320	20,280	30%
McMinn	55,100	38,570	16,530	30%
McNairy	47,400	35,550	11,850	25%
Meigs	44,200	35,360	8,840	20%
Monroe	53,200	37,240	15,960	30%
Montgomery	91,300	63,910	27,390	30%
Moore	44,200	35,360	8,840	20%
Morgan	44,200	35,360	8,840	20%
Obion	48,800	34,160	14,640	30%
Overton	44,600	33,450	11,150	25%
Perry	44,200	35,360	8,840	20%
Pickett	44,200	35,360	8,840	20%
Polk	44,200	33,150	11,050	25%
Putnam	59,300	41,510	17,790	30%

County	Total Allocation	Salaries plus Direct Cost	Required to be Spent on Education	Percent of Total Allocation Required to be Spent on Education
Rhea	44,200	33,150	11,050	25%
Roane	51,800	36,260	15,540	30%
Robertson	56,600	39,620	16,980	30%
Rutherford	124,100	86,870	37,230	30%
Scott	44,200	35,360	8,840	20%
Sequatchie	44,200	35,360	8,840	20%
Sevier	69,600	48,720	20,880	30%
Shelby	251,200	163,280	87,920	35%
Smith	44,200	35,360	8,840	20%
Stewart	44,200	35,360	8,840	20%
Sullivan	81,300	56,910	24,390	30%
Sumner	87,800	61,460	26,340	30%
Tipton	52,200	39,150	13,050	25%
Trousdale	44,200	35,360	8,840	20%
Unicoi	44,200	35,360	8,840	20%
Union	44,200	35,360	8,840	20%
Van Buren	44,200	35,360	8,840	20%
Warren	49,900	37,425	12,475	25%
Washington	72,100	50,470	21,630	30%
Wayne	45,500	34,125	11,375	25%
Weakley	52,800	36,960	15,840	30%
White	44,200	33,150	11,050	25%
Williamson	98,400	68,880	29,520	30%
Wilson	78,000	54,600	23,400	30%
Total	\$ 5,500,000	\$ 4,010,125	\$ 1,489,875	

Source: Email received from Mike McClanahan, outreach section manager, Highway Beautification Office, TDOT, April 12, 2022.

Appendix D: County Departments and Agencies that Administer the Litter Grant

County	Primary Grant Administrator	Litter Pickup Coordinator	Education Coordinator
Anderson	Solid Waste	Sheriff's Office	Solid Waste
Bedford	Solid Waste	Highway Department	Solid Waste
Benton	Solid Waste	Solid Waste	Solid Waste
Bledsoe	Mayor's Office	Sheriff's Office	Mayor's Office
Blount	Mayor's Office	Sheriff's Office	KAB Affiliate
Bradley	Sheriff's Office	Sheriff's Office	Sheriff's Office
Campbell	Sheriff's Office	Sheriff's Office	Sheriff's Office
Cannon	Mayor's Office	Sheriff's Office	Mayor's Office
Carroll	Solid Waste	Solid Waste	Solid Waste
Carter	Sheriff's Office	Sheriff's Office	Sheriff's Office
Cheatham	Sheriff's Office	Sheriff's Office	Sheriff's Office
Chester	Solid Waste	Solid Waste	KAB Affiliate
Claiborne	Mayor's Office	Sheriff's Office	Sheriff's Office
Clay	Mayor's Office	Solid Waste	Mayor's Office
Cocke	Sheriff's Office	Sheriff's Office	KAB Affiliate
Coffee	Solid Waste	Sheriff's Office	Solid Waste
Crockett	Mayor's Office	Sheriff's Office	Mayor's Office
Cumberland	Mayor's Office	Sheriff's Office	Development District
Davidson	Sheriff's Office	Public Works	KAB Affiliate
Decatur	Mayor's Office	Sheriff's Office	Sheriff's Office
DeKalb	Finance Department	Sheriff's Office	Sheriff's Office
Dickson	Sheriff's Office	Sheriff's Office	Sheriff's Office
Dyer	Mayor's Office	Sheriff's Office	Sheriff's Office
Fayette	Solid Waste	Solid Waste	Solid Waste
Fentress	Solid Waste	Solid Waste	Solid Waste
Franklin	Sheriff's Office	Sheriff's Office	Development District
Gibson	Solid Waste	Solid Waste	Solid Waste
Giles	Solid Waste	Solid Waste	Solid Waste
Grainger	Sheriff's Office	Sheriff's Office	Sheriff's Office
Greene	Mayor's Office	Mayor's Office	KAB Affiliate
Grundy	Mayor's Office	Sheriff's Office	Mayor's Office
Hamblen	Finance Department	KAB Affiliate	Finance Department
Hamilton	Sheriff's Office	Sheriff's Office	KAB Affiliate
Hancock	Sheriff's Office	Sheriff's Office	Sheriff's Office
Hardeman	Mayor's Office	Solid Waste	Solid Waste
Hardin	Solid Waste	Solid Waste	Solid Waste

County	Primary Grant Administrator	Litter Pickup Coordinator	Education Coordinator
Hawkins	Finance Department	Finance Department	Finance Department
Haywood	Solid Waste	Sheriff's Office	Solid Waste
Henderson	Emergency Management Agency	Emergency Management Agency	Emergency Management Agency
Henry	Solid Waste	Solid Waste	Solid Waste
Hickman	Solid Waste	Sheriff's Office	Solid Waste
Houston	Sheriff's Office	Sheriff's Office	Sheriff's Office
Humphreys	Sheriff's Office	Sheriff's Office	Solid Waste
Jackson	Sheriff's Office	Sheriff's Office	Sheriff's Office
Jefferson	Mayor's Office	Sheriff's Office	KAB Affiliate
Johnson	Solid Waste	Solid Waste	Solid Waste
Knox	Solid Waste	Solid Waste	KAB Affiliate
Lake	Mayor's Office	Sheriff's Office	Mayor's Office
Lauderdale	Finance Department	Mayor's Office	Mayor's Office
Lawrence	Finance Department	Sheriff's Office	Finance Department
Lewis	Finance Department	Sheriff's Office	Finance Department
Lincoln	Mayor's Office	Sheriff's Office	Development District
Loudon	Mayor's Office	Sheriff's Office	Solid Waste
Macon	Sheriff's Office	Sheriff's Office	Sheriff's Office
Madison	Mayor's Office	Sheriff's Office	Mayor's Office
Marion	Mayor's Office	Solid Waste	Solid Waste
Marshall	Solid Waste	Sheriff's Office	Solid Waste
Maury	Solid Waste	Sheriff's Office	KAB Affiliate
McMinn	KAB Affiliate	Sheriff's Office	KAB Affiliate
McNairy	Solid Waste	Solid Waste	Solid Waste
Meigs	Sheriff's Office	Sheriff's Office	Sheriff's Office
Monroe	Mayor's Office	Solid Waste	KAB Affiliate
Montgomery	Sheriff's Office	Sheriff's Office	Solid Waste
Moore	Mayor's Office	Solid Waste	Mayor's Office
Morgan	Mayor's Office	Sheriff's Office	Sheriff's Office
Obion	Solid Waste	Solid Waste	Solid Waste
Overton	Mayor's Office	Sheriff's Office	Mayor's Office
Perry	Mayor's Office	Sheriff's Office	Mayor's Office
Pickett	Mayor's Office	Sheriff's Office	Mayor's Office
Polk	Emergency Management Agency	Emergency Management Agency	Emergency Management Agency
Putnam	Finance Department	Sheriff's Office	Development District
Rhea	Mayor's Office	Sheriff's Office	Mayor's Office
Roane	Highway Department	Highway Department	Highway Department
Robertson	Sheriff's Office	Sheriff's Office	Sheriff's Office

County	Primary Grant Administrator	Litter Pickup Coordinator	Education Coordinator
Rutherford	Solid Waste	Sheriff's Office	Administration / Public Information Office
Scott	Mayor's Office	Mayor's Office	Mayor's Office
Sequatchie	Mayor's Office	Mayor's Office	Mayor's Office
Sevier	Mayor's Office	Sheriff's Office	KAB Affiliate
Shelby	Public Works	Public Works	Public Works
Smith	Mayor's Office	Sheriff's Office	Solid Waste
Stewart	Mayor's Office	Sheriff's Office	Mayor's Office
Sullivan	Mayor's Office	Sheriff's Office	Sheriff's Office
Sumner	Highway Department	Sheriff's Office	Highway Department
Tipton	KAB Affiliate	Sheriff's Office	KAB Affiliate
Trousdale	Finance Department	Sheriff's Office	Finance Department
Unicoi	Sheriff's Office	Sheriff's Office	Sheriff's Office
Union	Finance Department	Sheriff's Office	KAB Affiliate
Van Buren	Finance Department	Finance Department	Finance Department
Warren	Finance Department	Sheriff's Office	Finance Department
Washington	Sheriff's Office	Sheriff's Office	Sheriff's Office
Wayne	Mayor's Office	Solid Waste	Solid Waste
Weakley	Highway Department	Highway Department	Highway Department
White	Mayor's Office	Mayor's Office	Mayor's Office
Williamson	Sheriff's Office	Sheriff's Office	Sheriff's Office
Wilson	Sheriff's Office	Sheriff's Office	Sheriff's Office

Source: Email from Mike McClanahan, outreach section manager, Highway Beautification Office, TDOT, September 17, 2021.

Appendix E: Litter Grant Allocation and Spending by County Fiscal Years 2016-17 through 2020-21

County	Fiscal Year	Total Allocation	Amount Spent	Amount Unspent	Percent of Total Allocation Unspent
Anderson	2016-17	\$ 44,200	\$ 41,813	\$ 2,387	5.4%
	2017-18	53,000	45,245	7,755	14.6%
	2018-19	53,000	48,494	4,506	8.5%
	2019-20	53,000	43,850	9,150	17.3%
	2020-21	53,000	38,894	14,106	26.6%
	Five-Year Total	\$ 256,200	\$ 218,296	\$ 37,904	14.8%
Bedford	2016-17	\$ 43,200	\$ 43,200	\$ 0	0.0%
	2017-18	51,700	51,700	0	0.0%
	2018-19	51,700	51,700	0	0.0%
	2019-20	51,600	51,600	0	0.0%
	2020-21	51,500	51,458	42	0.1%
	Five-Year Total	\$ 249,700	\$ 249,658	\$ 42	0.0%
Benton	2016-17	\$ 34,900	\$ 23,882	\$ 11,018	31.6%
	2017-18	44,200	17,770	26,430	59.8%
	2018-19	44,200	18,704	25,496	57.7%
	2019-20	44,200	11,761	32,439	73.4%
	2020-21	44,200	12,472	31,728	71.8%
	Five-Year Total	\$ 211,700	\$ 84,589	\$ 127,111	60.0%
Bledsoe	2016-17	\$ 33,700	\$ 33,700	\$ 0	0.0%
	2017-18	44,200	43,555	645	1.5%
	2018-19	44,200	44,200	0	0.0%
	2019-20	44,200	44,200	0	0.0%
	2020-21	44,200	44,160	40	0.1%
	Five-Year Total	\$ 210,500	\$ 209,815	\$ 685	0.3%
Blount	2016-17	\$ 62,400	\$ 62,400	\$ 0	0.0%
	2017-18	74,600	74,600	0	0.0%
	2018-19	74,600	74,600	0	0.0%
	2019-20	74,300	74,300	0	0.0%
	2020-21	74,300	74,300	0	0.0%
	Five-Year Total	\$ 360,200	\$ 360,200	\$ 0	0.0%
Bradley	2016-17	\$ 55,000	\$ 34,949	\$ 20,051	36.5%
	2017-18	65,100	41,487	23,613	36.3%
	2018-19	65,100	56,007	9,093	14.0%
	2019-20	64,900	48,201	16,699	25.7%
	2020-21	64,900	64,894	6	0.0%
	Five-Year Total	\$ 315,000	\$ 245,538	\$ 69,462	22.1%

County	Fiscal Year	Total Allocation	Amount Spent	Amount Unspent	Percent of Total Allocation Unspent
Campbell	2016-17	\$ 40,700	\$ 40,700	\$ 0	0.0%
	2017-18	48,800	47,571	1,229	2.5%
	2018-19	48,800	40,645	8,155	16.7%
	2019-20	48,700	45,689	3,011	6.2%
	2020-21	48,700	16,307	32,393	66.5%
	Five-Year Total	\$ 235,700	\$ 190,912	\$ 44,788	19.0%
Cannon	2016-17	\$ 33,700	\$ 32,058	\$ 1,642	4.9%
	2017-18	44,200	44,185	15	0.0%
	2018-19	44,200	40,320	3,880	8.8%
	2019-20	44,200	39,062	5,138	11.6%
	2020-21	44,200	39,656	4,544	10.3%
	Five-Year Total	\$ 210,500	\$ 195,281	\$ 15,219	7.2%
Carroll	2016-17	\$ 41,100	\$ 40,275	\$ 825	2.0%
	2017-18	49,200	30,064	19,136	38.9%
	2018-19	49,200	30,503	18,697	38.0%
	2019-20	49,300	28,413	20,887	42.4%
	2020-21	49,300	31,174	18,126	36.8%
	Five-Year Total	\$ 238,100	\$ 160,430	\$ 77,670	32.6%
Carter	2016-17	\$ 42,500	\$ 39,624	\$ 2,876	6.8%
	2017-18	50,900	26,440	24,460	48.1%
	2018-19	50,900	45,505	5,395	10.6%
	2019-20	50,800	37,010	13,790	27.1%
	2020-21	50,800	31,168	19,632	38.6%
	Five-Year Total	\$ 245,900	\$ 179,747	\$ 66,153	26.9%
Cheatham	2016-17	\$ 36,400	\$ 21,094	\$ 15,306	42.1%
	2017-18	44,200	29,098	15,102	34.2%
	2018-19	44,200	36,407	7,793	17.6%
	2019-20	44,200	41,471	2,729	6.2%
	2020-21	44,200	39,991	4,209	9.5%
	Five-Year Total	\$ 213,200	\$ 168,060	\$ 45,140	21.2%
Chester	2016-17	\$ 33,700	\$ 33,700	\$ 0	0.0%
	2017-18	44,200	44,185	15	0.0%
	2018-19	44,200	42,350	1,850	4.2%
	2019-20	44,200	43,598	602	1.4%
	2020-21	44,200	37,525	6,675	15.1%
	Five-Year Total	\$ 210,500	\$ 201,358	\$ 9,142	4.3%

County	Fiscal Year	Total Allocation	Amount Spent	Amount Unspent	Percent of Total Allocation Unspent
Claiborne	2016-17	\$ 41,300	\$ 38,442	\$ 2,858	6.9%
	2017-18	49,200	43,111	6,089	12.4%
	2018-19	49,200	44,833	4,367	8.9%
	2019-20	49,100	44,673	4,427	9.0%
	2020-21	49,100	40,604	8,496	17.3%
	Five-Year Total	\$ 237,900	\$ 211,663	\$ 26,237	11.0%
Clay	2016-17	\$ 43,800	\$ 33,700	\$ 10,100	23.1%
	2017-18	44,200	43,129	1,071	2.4%
	2018-19	44,200	44,200	0	0.0%
	2019-20	44,200	44,200	0	0.0%
	2020-21	44,200	44,200	0	0.0%
	Five-Year Total	\$ 220,600	\$ 209,429	\$ 11,171	5.1%
Cocke	2016-17	\$ 41,100	\$ 41,100	\$ 0	0.0%
	2017-18	49,500	48,862	638	1.3%
	2018-19	49,500	49,199	301	0.6%
	2019-20	49,400	41,171	8,229	16.7%
	2020-21	49,300	46,014	3,286	6.7%
	Five-Year Total	\$ 238,800	\$ 226,345	\$ 12,455	5.2%
Coffee	2016-17	\$ 43,800	\$ 42,604	\$ 1,196	2.7%
	2017-18	52,400	44,221	8,179	15.6%
	2018-19	52,400	51,455	945	1.8%
	2019-20	52,300	46,129	6,171	11.8%
	2020-21	52,300	51,056	1,244	2.4%
	Five-Year Total	\$ 253,200	\$ 235,465	\$ 17,735	7.0%
Crockett	2016-17	\$ 33,700	\$ 33,697	\$ 3	0.0%
	2017-18	44,200	43,770	430	1.0%
	2018-19	44,200	44,147	53	0.1%
	2019-20	44,200	44,164	36	0.1%
	2020-21	44,200	43,117	1,083	2.5%
	Five-Year Total	\$ 210,500	\$ 208,896	\$ 1,604	0.8%
Cumberland	2016-17	\$ 52,500	\$ 52,491	\$ 9	0.0%
	2017-18	62,300	57,835	4,465	7.2%
	2018-19	62,300	62,204	96	0.2%
	2019-20	63,000	44,854	18,146	28.8%
	2020-21	63,100	46,993	16,107	25.5%
	Five-Year Total	\$ 303,200	\$ 264,377	\$ 38,823	12.8%

County	Fiscal Year	Total Allocation	Amount Spent	Amount Unspent	Percent of Total Allocation Unspent
Davidson	2016-17	\$ 154,600	\$ 154,600	\$ 0	0.0%
	2017-18	180,300	169,405	10,895	6.0%
	2018-19	180,300	180,300	0	0.0%
	2019-20	179,800	165,453	14,347	8.0%
	2020-21	179,800	179,800	0	0.0%
	Five-Year Total	\$ 874,800	\$ 849,559	\$ 25,241	2.9%
Decatur	2016-17	\$ 33,700	\$ 23,633	\$ 10,067	29.9%
	2017-18	44,200	23,790	20,410	46.2%
	2018-19	44,200	18,678	25,522	57.7%
	2019-20	44,200	32,172	12,028	27.2%
	2020-21	44,200	20,668	23,532	53.2%
	Five-Year Total	\$ 210,500	\$ 118,941	\$ 91,559	43.5%
DeKalb	2016-17	\$ 33,700	\$ 30,347	\$ 3,353	10.0%
	2017-18	44,200	37,182	7,018	15.9%
	2018-19	44,200	41,635	2,565	5.8%
	2019-20	44,200	36,515	7,685	17.4%
	2020-21	44,200	42,295	1,905	4.3%
	Five-Year Total	\$ 210,500	\$ 187,974	\$ 22,526	10.7%
Dickson	2016-17	\$ 45,400	\$ 43,435	\$ 1,965	4.3%
	2017-18	54,200	49,212	4,988	9.2%
	2018-19	54,200	48,958	5,242	9.7%
	2019-20	54,300	44,335	9,965	18.4%
	2020-21	54,200	45,171	9,029	16.7%
	Five-Year Total	\$ 262,300	\$ 231,112	\$ 31,188	11.9%
Dyer	2016-17	\$ 40,400	\$ 40,266	\$ 134	0.3%
	2017-18	48,300	44,502	3,798	7.9%
	2018-19	48,300	44,764	3,536	7.3%
	2019-20	48,300	39,358	8,942	18.5%
	2020-21	48,200	41,047	7,153	14.8%
	Five-Year Total	\$ 233,500	\$ 209,937	\$ 23,563	10.1%
Fayette	2016-17	\$ 43,100	\$ 39,317	\$ 3,783	8.8%
	2017-18	51,700	43,264	8,436	16.3%
	2018-19	51,700	45,499	6,201	12.0%
	2019-20	51,600	46,180	5,420	10.5%
	2020-21	51,600	51,556	44	0.1%
	Five-Year Total	\$ 249,700	\$ 225,816	\$ 23,884	9.6%

County	Fiscal Year	Total Allocation	Amount Spent	Amount Unspent	Percent of Total Allocation Unspent
Fentress	2016-17	\$ 34,000	\$ 34,000	\$ 0	0.0%
	2017-18	44,200	40,675	3,525	8.0%
	2018-19	44,200	43,829	371	0.8%
	2019-20	44,200	33,980	10,220	23.1%
	2020-21	44,200	33,522	10,678	24.2%
	Five-Year Total	\$ 210,800	\$ 186,006	\$ 24,794	11.8%
Franklin	2016-17	\$ 42,300	\$ 24,620	\$ 17,680	41.8%
	2017-18	50,600	24,550	26,050	51.5%
	2018-19	50,600	18,808	31,792	62.8%
	2019-20	50,500	19,745	30,755	60.9%
	2020-21	50,600	17,269	33,331	65.9%
	Five-Year Total	\$ 244,600	\$ 104,992	\$ 139,608	57.1%
Gibson	2016-17	\$ 49,100	\$ 48,240	\$ 860	1.8%
	2017-18	58,800	57,476	1,324	2.3%
	2018-19	58,800	45,206	13,594	23.1%
	2019-20	58,800	41,092	17,708	30.1%
	2020-21	58,700	44,040	14,660	25.0%
	Five-Year Total	\$ 284,200	\$ 236,054	\$ 48,146	16.9%
Giles	2016-17	\$ 44,100	\$ 41,978	\$ 2,122	4.8%
	2017-18	52,700	46,939	5,761	10.9%
	2018-19	52,700	52,657	43	0.1%
	2019-20	52,600	52,339	261	0.5%
	2020-21	52,500	46,054	6,446	12.3%
	Five-Year Total	\$ 254,600	\$ 239,967	\$ 14,633	5.7%
Grainger	2016-17	\$ 34,500	\$ 26,500	\$ 8,000	23.2%
	2017-18	44,200	37,926	6,274	14.2%
	2018-19	44,200	42,049	2,151	4.9%
	2019-20	44,200	22,241	21,959	49.7%
	2020-21	44,200	16,282	27,918	63.2%
	Five-Year Total	\$ 211,300	\$ 144,997	\$ 66,303	31.4%
Greene	2016-17	\$ 57,800	\$ 54,072	\$ 3,728	6.5%
	2017-18	68,600	68,525	75	0.1%
	2018-19	68,600	67,155	1,445	2.1%
	2019-20	68,400	68,400	0	0.0%
	2020-21	68,400	68,400	0	0.0%
	Five-Year Total	\$ 331,800	\$ 326,551	\$ 5,249	1.6%

County	Fiscal Year	Total Allocation	Amount Spent	Amount Unspent	Percent of Total Allocation Unspent
Grundy	2016-17	\$ 33,700	\$ 33,564	\$ 136	0.4%
	2017-18	44,200	43,604	596	1.3%
	2018-19	44,200	43,244	956	2.2%
	2019-20	44,200	43,562	638	1.4%
	2020-21	44,200	43,446	754	1.7%
	Five-Year Total	\$ 210,500	\$ 207,420	\$ 3,080	1.5%
Hamblen	2016-17	\$ 40,300	\$ 40,300	\$ 0	0.0%
	2017-18	48,200	48,048	152	0.3%
	2018-19	48,200	48,200	0	0.0%
	2019-20	48,200	48,200	0	0.0%
	2020-21	48,300	48,276	25	0.1%
	Five-Year Total	\$ 233,200	\$ 233,023	\$ 177	0.1%
Hamilton	2016-17	\$ 108,900	\$ 108,900	\$ 0	0.0%
	2017-18	127,100	127,100	0	0.0%
	2018-19	127,100	127,100	0	0.0%
	2019-20	127,000	127,000	0	0.0%
	2020-21	127,000	127,000	0	0.0%
	Five-Year Total	\$ 617,100	\$ 617,100	\$ 0	0.0%
Hancock	2016-17	\$ 33,700	\$ 27,959	\$ 5,741	17.0%
	2017-18	44,200	44,200	0	0.0%
	2018-19	44,200	42,164	2,036	4.6%
	2019-20	44,200	39,630	4,570	10.3%
	2020-21	44,200	38,658	5,542	12.5%
	Five-Year Total	\$ 210,500	\$ 192,611	\$ 17,889	8.5%
Hardeman	2016-17	\$ 38,600	\$ 35,990	\$ 2,610	6.8%
	2017-18	46,400	29,928	16,472	35.5%
	2018-19	46,400	20,888	25,512	55.0%
	2019-20	46,600	19,616	26,984	57.9%
	2020-21	46,500	10,149	36,351	78.2%
	Five-Year Total	\$ 224,500	\$ 116,570	\$ 107,930	48.1%
Hardin	2016-17	\$ 40,500	\$ 40,382	\$ 118	0.3%
	2017-18	48,600	46,284	2,316	4.8%
	2018-19	48,600	48,325	275	0.6%
	2019-20	48,600	46,505	2,095	4.3%
	2020-21	48,600	39,827	8,773	18.1%
	Five-Year Total	\$ 234,900	\$ 221,322	\$ 13,578	5.8%

County	Fiscal Year	Total Allocation	Amount Spent	Amount Unspent	Percent of Total Allocation Unspent
Hawkins	2016-17	\$ 47,500	\$ 43,251	\$ 4,249	8.9%
	2017-18	56,900	32,289	24,611	43.3%
	2018-19	56,900	43,952	12,948	22.8%
	2019-20	56,700	42,984	13,716	24.2%
	2020-21	56,700	41,736	14,964	26.4%
	Five-Year Total	\$ 274,700	\$ 204,212	\$ 70,488	25.7%
Haywood	2016-17	\$ 35,200	\$ 35,064	\$ 136	0.4%
	2017-18	44,200	44,162	38	0.1%
	2018-19	44,200	44,024	176	0.4%
	2019-20	44,200	43,990	210	0.5%
	2020-21	44,200	43,723	478	1.1%
	Five-Year Total	\$ 212,000	\$ 210,962	\$ 1,038	0.5%
Henderson	2016-17	\$ 40,600	\$ 40,600	\$ 0	0.0%
	2017-18	48,700	47,174	1,526	3.1%
	2018-19	48,700	48,700	0	0.0%
	2019-20	49,200	49,200	0	0.0%
	2020-21	49,200	49,200	0	0.0%
	Five-Year Total	\$ 236,400	\$ 234,874	\$ 1,526	0.6%
Henry	2016-17	\$ 43,500	\$ 43,441	\$ 59	0.1%
	2017-18	52,100	52,100	0	0.0%
	2018-19	52,100	52,100	0	0.0%
	2019-20	52,100	51,618	482	0.9%
	2020-21	52,000	50,920	1,080	2.1%
	Five-Year Total	\$ 251,800	\$ 250,178	\$ 1,622	0.6%
Hickman	2016-17	\$ 41,300	\$ 36,291	\$ 5,009	12.1%
	2017-18	49,400	42,030	7,370	14.9%
	2018-19	49,400	46,183	3,217	6.5%
	2019-20	49,300	43,862	5,438	11.0%
	2020-21	49,300	20,640	28,660	58.1%
	Five-Year Total	\$ 238,700	\$ 189,006	\$ 49,694	20.8%
Houston	2016-17	\$ 33,700	\$ 31,654	\$ 2,046	6.1%
	2017-18	44,200	41,617	2,583	5.8%
	2018-19	44,200	39,685	4,515	10.2%
	2019-20	44,200	28,219	15,981	36.2%
	2020-21	44,200	41,436	2,764	6.3%
	Five-Year Total	\$ 210,500	\$ 182,611	\$ 27,889	13.2%

County	Fiscal Year	Total Allocation	Amount Spent	Amount Unspent	Percent of Total Allocation Unspent
Humphreys	2016-17	\$ 35,000	\$ 34,772	\$ 228	0.7%
	2017-18	44,200	35,838	8,362	18.9%
	2018-19	44,200	23,518	20,682	46.8%
	2019-20	44,200	6,782	37,418	84.7%
	2020-21	44,200	9,147	35,053	79.3%
	Five-Year Total	\$ 211,800	\$ 110,056	\$ 101,744	48.0%
Jackson	2016-17	\$ 33,700	\$ 20,825	\$ 12,875	38.2%
	2017-18	44,200	35,007	9,193	20.8%
	2018-19	44,200	33,673	10,527	23.8%
	2019-20	44,200	28,762	15,438	34.9%
	2020-21	44,200	15,645	28,555	64.6%
	Five-Year Total	\$ 210,500	\$ 133,911	\$ 76,589	36.4%
Jefferson	2016-17	\$ 44,300	\$ 42,370	\$ 1,930	4.4%
	2017-18	53,000	52,116	884	1.7%
	2018-19	53,000	52,185	815	1.5%
	2019-20	52,900	48,773	4,127	7.8%
	2020-21	53,000	42,498	10,502	19.8%
	Five-Year Total	\$ 256,200	\$ 237,943	\$ 18,257	7.1%
Johnson	2016-17	\$ 33,700	\$ 33,156	\$ 544	1.6%
	2017-18	44,200	36,188	8,012	18.1%
	2018-19	44,200	39,399	4,801	10.9%
	2019-20	44,200	44,114	86	0.2%
	2020-21	44,200	26,542	17,658	40.0%
	Five-Year Total	\$ 210,500	\$ 179,399	\$ 31,101	14.8%
Knox	2016-17	\$ 144,600	\$ 144,600	\$ 0	0.0%
	2017-18	169,000	169,000	0	0.0%
	2018-19	169,000	169,000	0	0.0%
	2019-20	168,600	168,472	128	0.1%
	2020-21	168,600	168,600	0	0.0%
	Five-Year Total	\$ 819,800	\$ 819,672	\$ 128	0.0%
Lake	2016-17	\$ 33,700	\$ 12,813	\$ 20,887	62.0%
	2017-18	44,200	21,056	23,144	52.4%
	2018-19	44,200	15,878	28,322	64.1%
	2019-20	44,200	15,241	28,959	65.5%
	2020-21	44,200	7,896	36,304	82.1%
	Five-Year Total	\$ 210,500	\$ 72,884	\$ 137,616	65.4%

County	Fiscal Year	Total Allocation	Amount Spent	Amount Unspent	Percent of Total Allocation Unspent
Lauderdale	2016-17	\$ 35,300	\$ 35,300	\$ 0	0.0%
	2017-18	44,200	44,083	117	0.3%
	2018-19	44,200	43,686	514	1.2%
	2019-20	44,200	42,826	1,374	3.1%
	2020-21	44,200	40,452	3,748	8.5%
	Five-Year Total	\$ 212,100	\$ 206,347	\$ 5,753	2.7%
Lawrence	2016-17	\$ 49,200	\$ 49,196	\$ 4	0.0%
	2017-18	58,600	57,957	643	1.1%
	2018-19	58,500	58,174	326	0.6%
	2019-20	58,600	58,367	233	0.4%
	2020-21	58,500	58,371	129	0.2%
	Five-Year Total	\$ 283,400	\$ 282,066	\$ 1,334	0.5%
Lewis	2016-17	\$ 33,700	\$ 27,359	\$ 6,341	18.8%
	2017-18	44,200	34,931	9,269	21.0%
	2018-19	44,200	36,924	7,276	16.5%
	2019-20	44,200	40,976	3,224	7.3%
	2020-21	44,200	38,535	5,665	12.8%
	Five-Year Total	\$ 210,500	\$ 178,725	\$ 31,775	15.1%
Lincoln	2016-17	\$ 43,800	\$ 23,600	\$ 20,200	46.1%
	2017-18	52,400	45,528	6,872	13.1%
	2018-19	52,200	31,418	20,782	39.8%
	2019-20	52,200	23,675	28,525	54.6%
	2020-21	52,200	15,695	36,505	69.9%
	Five-Year Total	\$ 252,800	\$ 139,916	\$ 112,884	44.7%
Loudon	2016-17	\$ 40,700	\$ 39,237	\$ 1,463	3.6%
	2017-18	49,200	45,507	3,693	7.5%
	2018-19	49,200	42,086	7,114	14.5%
	2019-20	49,100	41,155	7,945	16.2%
	2020-21	49,100	47,791	1,309	2.7%
	Five-Year Total	\$ 237,300	\$ 215,776	\$ 21,524	9.1%
Macon	2016-17	\$ 35,700	\$ 35,600	\$ 100	0.3%
	2017-18	48,800	44,865	3,935	8.1%
	2018-19	48,800	48,532	268	0.5%
	2019-20	44,200	36,734	7,466	16.9%
	2020-21	44,200	37,395	6,805	15.4%
	Five-Year Total	\$ 221,700	\$ 203,126	\$ 18,574	8.4%

County	Fiscal Year	Total Allocation	Amount Spent	Amount Unspent	Percent of Total Allocation Unspent
Madison	2016-17	\$ 54,700	\$ 47,361	\$ 7,339	13.4%
	2017-18	65,100	35,865	29,235	44.9%
	2018-19	64,800	40,816	23,984	37.0%
	2019-20	64,800	51,312	13,488	20.8%
	2020-21	64,800	47,428	17,372	26.8%
	Five-Year Total	\$ 314,200	\$ 222,782	\$ 91,418	29.1%
Marion	2016-17	\$ 34,100	\$ 34,100	\$ 0	0.0%
	2017-18	44,300	44,300	0	0.0%
	2018-19	44,300	44,276	24	0.1%
	2019-20	44,200	43,358	842	1.9%
	2020-21	44,200	44,170	30	0.1%
	Five-Year Total	\$ 211,100	\$ 210,205	\$ 895	0.4%
Marshall	2016-17	\$ 37,200	\$ 37,200	\$ 0	0.0%
	2017-18	48,900	48,900	0	0.0%
	2018-19	48,900	45,228	3,672	7.5%
	2019-20	44,800	39,012	5,788	12.9%
	2020-21	44,700	39,543	5,157	11.5%
	Five-Year Total	\$ 224,500	\$ 209,883	\$ 14,617	6.5%
Maury	2016-17	\$ 55,000	\$ 50,521	\$ 4,479	8.1%
	2017-18	56,100	56,039	61	0.1%
	2018-19	56,100	56,003	97	0.2%
	2019-20	67,200	64,869	2,331	3.5%
	2020-21	67,100	62,127	4,973	7.4%
	Five-Year Total	\$ 301,500	\$ 289,559	\$ 11,941	4.0%
McMinn	2016-17	\$ 46,900	\$ 25,229	\$ 21,671	46.2%
	2017-18	49,800	26,402	23,398	47.0%
	2018-19	49,800	33,880	15,920	32.0%
	2019-20	55,800	27,418	28,382	50.9%
	2020-21	55,700	30,875	24,825	44.6%
	Five-Year Total	\$ 258,000	\$ 143,803	\$ 114,197	44.3%
McNairy	2016-17	\$ 39,900	\$ 38,738	\$ 1,162	2.9%
	2017-18	51,600	36,127	15,473	30.0%
	2018-19	51,600	49,824	1,776	3.4%
	2019-20	47,900	29,958	17,942	37.5%
	2020-21	47,900	44,412	3,488	7.3%
	Five-Year Total	\$ 238,900	\$ 199,059	\$ 39,841	16.7%

County	Fiscal Year	Total Allocation	Amount Spent	Amount Unspent	Percent of Total Allocation Unspent
Meigs	2016-17	\$ 33,700	\$ 32,087	\$ 1,613	4.8%
	2017-18	44,200	26,247	17,953	40.6%
	2018-19	44,200	31,887	12,313	27.9%
	2019-20	44,200	30,715	13,485	30.5%
	2020-21	44,200	38,862	5,338	12.1%
	Five-Year Total	\$ 210,500	\$ 159,799	\$ 50,701	24.1%
Monroe	2016-17	\$ 44,900	\$ 44,900	\$ 0	0.0%
	2017-18	53,700	53,700	0	0.0%
	2018-19	53,700	53,700	0	0.0%
	2019-20	53,600	53,600	0	0.0%
	2020-21	53,600	48,300	5,300	9.9%
	Five-Year Total	\$ 259,500	\$ 254,200	\$ 5,300	2.0%
Montgomery	2016-17	\$ 70,600	\$ 70,600	\$ 0	0.0%
	2017-18	83,500	24,896	58,604	70.2%
	2018-19	83,500	83,500	0	0.0%
	2019-20	83,700	83,527	173	0.2%
	2020-21	83,700	82,475	1,226	1.5%
	Five-Year Total	\$ 405,000	\$ 344,998	\$ 60,002	14.8%
Moore	2016-17	\$ 33,700	\$ 32,858	\$ 842	2.5%
	2017-18	44,200	40,115	4,085	9.2%
	2018-19	44,200	41,773	2,427	5.5%
	2019-20	44,200	42,568	1,632	3.7%
	2020-21	44,200	36,813	7,387	16.7%
	Five-Year Total	\$ 210,500	\$ 194,127	\$ 16,373	7.8%
Morgan	2016-17	\$ 33,700	\$ 33,523	\$ 177	0.5%
	2017-18	44,200	42,856	1,344	3.0%
	2018-19	44,200	41,107	3,093	7.0%
	2019-20	44,200	39,541	4,659	10.5%
	2020-21	44,200	35,178	9,022	20.4%
	Five-Year Total	\$ 210,500	\$ 192,204	\$ 18,296	8.7%
Obion	2016-17	\$ 41,500	\$ 27,162	\$ 14,338	34.6%
	2017-18	49,800	29,871	19,929	40.0%
	2018-19	49,800	23,996	25,804	51.8%
	2019-20	49,700	28,312	21,388	43.0%
	2020-21	50,200	23,319	26,881	53.5%
	Five-Year Total	\$ 241,000	\$ 132,660	\$ 108,340	45.0%

County	Fiscal Year	Total Allocation	Amount Spent	Amount Unspent	Percent of Total Allocation Unspent
Overton	2016-17	\$ 37,100	\$ 36,857	\$ 243	0.7%
	2017-18	44,600	38,805	5,795	13.0%
	2018-19	44,600	39,482	5,118	11.5%
	2019-20	44,800	42,306	2,494	5.6%
	2020-21	44,800	42,364	2,436	5.4%
	Five-Year Total	\$ 215,900	\$ 199,814	\$ 16,086	7.5%
Perry	2016-17	\$ 33,700	\$ 27,585	\$ 6,115	18.1%
	2017-18	44,200	31,026	13,174	29.8%
	2018-19	44,200	38,322	5,878	13.3%
	2019-20	44,200	29,078	15,122	34.2%
	2020-21	44,200	32,646	11,554	26.1%
	Five-Year Total	\$ 210,500	\$ 158,657	\$ 51,843	24.6%
Pickett	2016-17	\$ 33,700	\$ 32,188	\$ 1,512	4.5%
	2017-18	44,200	38,748	5,452	12.3%
	2018-19	44,200	36,697	7,503	17.0%
	2019-20	44,200	38,596	5,604	12.7%
	2020-21	44,200	41,516	2,684	6.1%
	Five-Year Total	\$ 210,500	\$ 187,744	\$ 22,756	10.8%
Polk	2016-17	\$ 33,700	\$ 27,000	\$ 6,700	19.9%
	2017-18	44,200	37,309	6,891	15.6%
	2018-19	44,200	41,825	2,375	5.4%
	2019-20	44,200	33,362	10,838	24.5%
	2020-21	44,200	29,280	14,920	33.8%
	Five-Year Total	\$ 210,500	\$ 168,776	\$ 41,724	19.8%
Putnam	2016-17	\$ 49,700	\$ 49,695	\$ 5	0.0%
	2017-18	59,300	59,300	0	0.0%
	2018-19	59,300	59,027	273	0.5%
	2019-20	59,200	59,200	0	0.0%
	2020-21	59,300	59,144	156	0.3%
	Five-Year Total	\$ 286,800	\$ 286,365	\$ 435	0.2%
Rhea	2016-17	\$ 35,100	\$ 34,825	\$ 275	0.8%
	2017-18	44,200	36,840	7,360	16.7%
	2018-19	44,200	36,780	7,420	16.8%
	2019-20	44,200	34,667	9,533	21.6%
	2020-21	44,200	36,446	7,754	17.5%
	Five-Year Total	\$ 211,900	\$ 179,557	\$ 32,343	15.3%

County	Fiscal Year	Total Allocation	Amount Spent	Amount Unspent	Percent of Total Allocation Unspent
Roane	2016-17	\$ 44,300	\$ 40,184	\$ 4,116	9.3%
	2017-18	53,000	53,000	0	0.0%
	2018-19	53,000	53,000	0	0.0%
	2019-20	52,900	39,996	12,904	24.4%
	2020-21	52,900	26,444	26,456	50.0%
	Five-Year Total	\$ 256,100	\$ 212,624	\$ 43,476	17.0%
Robertson	2016-17	\$ 47,300	\$ 27,603	\$ 19,697	41.6%
	2017-18	56,500	37,228	19,272	34.1%
	2018-19	56,500	28,758	27,742	49.1%
	2019-20	56,400	31,419	24,981	44.3%
	2020-21	56,300	16,555	39,745	70.6%
	Five-Year Total	\$ 273,000	\$ 141,563	\$ 131,437	48.1%
Rutherford	2016-17	\$ 95,100	\$ 95,100	\$ 0	0.0%
	2017-18	113,200	113,200	0	0.0%
	2018-19	113,200	111,799	1,401	1.2%
	2019-20	112,900	81,183	31,717	28.1%
	2020-21	113,200	81,929	31,271	27.6%
	Five-Year Total	\$ 547,600	\$ 483,211	\$ 64,389	11.8%
Scott	2016-17	\$ 33,700	\$ 33,700	\$ 0	0.0%
	2017-18	44,200	44,200	0	0.0%
	2018-19	44,200	28,590	15,610	35.3%
	2019-20	44,200	31,377	12,823	29.0%
	2020-21	44,200	28,987	15,213	34.4%
	Five-Year Total	\$ 210,500	\$ 166,855	\$ 43,645	20.7%
Sequatchie	2016-17	\$ 33,700	\$ 33,091	\$ 609	1.8%
	2017-18	44,200	43,677	523	1.2%
	2018-19	44,200	42,986	1,214	2.7%
	2019-20	44,200	37,943	6,257	14.2%
	2020-21	44,200	42,759	1,441	3.3%
	Five-Year Total	\$ 210,500	\$ 200,455	\$ 10,045	4.8%
Sevier	2016-17	\$ 58,300	\$ 58,300	\$ 0	0.0%
	2017-18	69,200	69,200	0	0.0%
	2018-19	69,200	69,200	0	0.0%
	2019-20	69,300	69,300	0	0.0%
	2020-21	69,200	69,200	0	0.0%
	Five-Year Total	\$ 335,200	\$ 335,200	\$ 0	0.0%

County	Fiscal Year	Total Allocation	Amount Spent	Amount Unspent	Percent of Total Allocation Unspent
Shelby	2016-17	\$ 230,200	\$ 164,626	\$ 65,574	28.5%
	2017-18	269,700	196,680	73,020	27.1%
	2018-19	268,900	223,185	45,715	17.0%
	2019-20	269,200	175,375	93,825	34.9%
	2020-21	269,400	188,757	80,643	29.9%
	Five-Year Total	\$ 1,307,400	\$ 948,622	\$ 358,778	27.4%
Smith	2016-17	\$ 33,700	\$ 32,360	\$ 1,340	4.0%
	2017-18	44,200	42,878	1,322	3.0%
	2018-19	44,200	35,963	8,237	18.6%
	2019-20	44,200	35,396	8,804	19.9%
	2020-21	44,200	38,697	5,503	12.5%
	Five-Year Total	\$ 210,500	\$ 185,294	\$ 25,206	12.0%
Stewart	2016-17	\$ 33,700	\$ 30,582	\$ 3,118	9.3%
	2017-18	44,200	39,739	4,461	10.1%
	2018-19	44,200	40,995	3,205	7.3%
	2019-20	44,200	28,596	15,604	35.3%
	2020-21	44,200	37,631	6,569	14.9%
	Five-Year Total	\$ 210,500	\$ 177,544	\$ 32,956	15.7%
Sullivan	2016-17	\$ 71,900	\$ 71,900	\$ 0	0.0%
	2017-18	85,100	82,543	2,557	3.0%
	2018-19	85,100	85,100	0	0.0%
	2019-20	84,900	84,900	0	0.0%
	2020-21	84,900	84,900	0	0.0%
	Five-Year Total	\$ 411,900	\$ 409,343	\$ 2,557	0.6%
Sumner	2016-17	\$ 70,100	\$ 65,518	\$ 4,582	6.5%
	2017-18	83,900	73,999	9,901	11.8%
	2018-19	83,900	83,039	862	1.0%
	2019-20	84,000	83,551	449	0.5%
	2020-21	84,000	74,421	9,579	11.4%
	Five-Year Total	\$ 405,900	\$ 380,527	\$ 25,373	6.3%
Tipton	2016-17	\$ 44,700	\$ 44,524	\$ 176	0.4%
	2017-18	53,400	40,888	12,512	23.4%
	2018-19	53,400	48,887	4,513	8.5%
	2019-20	53,600	53,034	566	1.1%
	2020-21	53,600	52,818	782	1.5%
	Five-Year Total	\$ 258,700	\$ 240,152	\$ 18,548	7.2%

County	Fiscal Year	Total Allocation	Amount Spent	Amount Unspent	Percent of Total Allocation Unspent
Trousdale	2016-17	\$ 33,700	\$ 33,392	\$ 308	0.9%
	2017-18	44,200	43,766	434	1.0%
	2018-19	44,200	44,020	180	0.4%
	2019-20	44,200	42,924	1,276	2.9%
	2020-21	44,200	43,561	639	1.4%
	Five-Year Total	\$ 210,500	\$ 207,664	\$ 2,836	1.3%
Unicoi	2016-17	\$ 33,700	\$ 33,080	\$ 620	1.8%
	2017-18	44,200	31,070	13,130	29.7%
	2018-19	44,200	39,764	4,436	10.0%
	2019-20	44,200	31,447	12,753	28.9%
	2020-21	44,200	22,498	21,702	49.1%
	Five-Year Total	\$ 210,500	\$ 157,859	\$ 52,641	25.0%
Union	2016-17	\$ 33,700	\$ 31,611	\$ 2,089	6.2%
	2017-18	44,200	37,828	6,372	14.4%
	2018-19	44,200	37,906	6,294	14.2%
	2019-20	44,200	39,668	4,532	10.3%
	2020-21	44,200	34,692	9,508	21.5%
	Five-Year Total	\$ 210,500	\$ 181,705	\$ 28,795	13.7%
Van Buren	2016-17	\$ 33,700	\$ 33,700	\$ 0	0.0%
	2017-18	44,200	40,393	3,807	8.6%
	2018-19	44,200	36,181	8,019	18.1%
	2019-20	44,200	32,475	11,725	26.5%
	2020-21	44,200	21,805	22,395	50.7%
	Five-Year Total	\$ 210,500	\$ 164,554	\$ 45,946	21.8%
Warren	2016-17	\$ 41,900	\$ 38,548	\$ 3,352	8.0%
	2017-18	50,300	48,157	2,143	4.3%
	2018-19	50,300	49,755	545	1.1%
	2019-20	50,300	49,288	1,012	2.0%
	2020-21	50,300	41,949	8,351	16.6%
	Five-Year Total	\$ 243,100	\$ 227,698	\$ 15,402	6.3%
Washington	2016-17	\$ 61,000	\$ 20,660	\$ 40,340	66.1%
	2017-18	72,300	51,064	21,236	29.4%
	2018-19	72,300	60,483	11,817	16.3%
	2019-20	72,100	58,020	14,080	19.5%
	2020-21	72,000	67,788	4,212	5.8%
	Five-Year Total	\$ 349,700	\$ 258,015	\$ 91,685	26.2%

County	Fiscal Year	Total Allocation	Amount Spent	Amount Unspent	Percent of Total Allocation Unspent
Wayne	2016-17	\$ 38,400	\$ 38,060	\$ 340	0.9%
	2017-18	46,100	38,055	8,045	17.5%
	2018-19	46,100	38,831	7,269	15.8%
	2019-20	46,000	40,339	5,661	12.3%
	2020-21	46,000	35,191	10,809	23.5%
	Five-Year Total	\$ 222,600	\$ 190,475	\$ 32,125	14.4%
Weakley	2016-17	\$ 45,200	\$ 44,703	\$ 497	1.1%
	2017-18	54,000	50,927	3,073	5.7%
	2018-19	54,000	50,474	3,526	6.5%
	2019-20	53,900	50,749	3,151	5.8%
	2020-21	53,900	47,785	6,115	11.3%
	Five-Year Total	\$ 261,000	\$ 244,638	\$ 16,362	6.3%
White	2016-17	\$ 36,800	\$ 24,171	\$ 12,629	34.3%
	2017-18	44,300	35,930	8,370	18.9%
	2018-19	44,300	42,093	2,207	5.0%
	2019-20	44,200	42,889	1,311	3.0%
	2020-21	44,200	44,200	0	0.0%
	Five-Year Total	\$ 213,800	\$ 189,283	\$ 24,517	11.5%
Williamson	2016-17	\$ 74,100	\$ 64,597	\$ 9,503	12.8%
	2017-18	92,000	83,762	8,238	9.0%
	2018-19	92,000	92,000	0	0.0%
	2019-20	93,500	75,946	17,554	18.8%
	2020-21	93,400	56,142	37,258	39.9%
	Five-Year Total	\$ 445,000	\$ 372,447	\$ 72,553	16.3%
Wilson	2016-17	\$ 60,900	\$ 60,900	\$ 0	0.0%
	2017-18	75,800	70,209	5,591	7.4%
	2018-19	75,800	66,321	9,479	12.5%
	2019-20	75,900	71,603	4,297	5.7%
	2020-21	76,000	75,996	4	0.0%
	Five-Year Total	\$ 364,400	\$ 345,029	\$ 19,371	5.3%
State Five-Year Total		\$ 26,502,600	\$ 22,676,626	\$ 3,825,974	14.4%

Note: Fiscal years 2019-20 and 2020-21 are shaded gray because those years were affected by the COVID-19 pandemic.

Source: Email received from Mike McClanahan, outreach section manager, Highway Beautification Office, TDOT, April 12, 2022.

Appendix F: Adopt-A-Highway Groups and Miles by County as of November 2022

Counties with Adopt-A-Highway Groups			Counties without Adopt-A-Highway Groups (29)
County (66)	Number of Groups	Total Miles	
Anderson	3	6	Bledsoe
Bedford	1	2	Campbell
Benton	2	4	Cannon
Blount	4	8	Chester
Bradley	2	4	Cocke
Carroll	1	2	Crockett
Carter	3	6	Fentress
Cheatham	2	4	Franklin
Claiborne	2	4	Grainger
Clay	1	2	Grundy
Coffee	4	8	Jackson
Cumberland	5	10	Jefferson
Davidson	50	100	Lake
Decatur	1	2	Lauderdale
DeKalb	2	4	Lawrence
Dickson	1	2	Lewis
Dyer	2	4	Macon
Fayette	3	6	Meigs
Gibson	1	2	Morgan
Giles	1	2	Overton
Greene	2	4	Perry
Hamblen	6	12	Pickett
Hamilton	9	18	Scott
Hancock	1	2	Smith
Hardeman	3	6	Trousdale
Hardin	7	14	Union
Hawkins	1	2	Van Buren
Haywood	4	8	Warren
Henderson	1	2	White
Henry	2	4	
Hickman	1	2	
Houston	1	2	

Counties with Adopt-A-Highway Groups		
County (66)	Number of Groups	Total Miles
Humphreys	1	2
Johnson	3	6
Knox	3	6
Lincoln	1	2
Loudon	1	2
McMinn	2	4
McNairy	2	4
Madison	2	4
Marion	1	2
Marshall	1	2
Maury	7	14
Monroe	2	4
Montgomery	37	74
Moore	2	4
Obion	1	2
Polk	3	6
Putnam	6	12
Rhea	2	4
Roane	3	6
Robertson	1	2
Rutherford	13	26
Sequatchie	1	2
Sevier	6	12
Shelby	22	44
Stewart	2	4
Sullivan	4	8
Sumner	4	8
Tipton	3	6
Unicoi	1	2
Washington	5	10
Wayne	2	4
Weakley	1	2
Williamson	13	26
Wilson	5	10
Total	292	584

Source: Email from Mike McClanahan, outreach section manager, Highway Beautification Office, TDOT, December 5, 2022.

Appendix G: Examples of Litter Prevention Toolkit Resources

This is not intended to be a comprehensive list.

EPA Litter Prevention Kit Part 3: Local Litter Check Guidelines, 2019 (Australia)

- This is a free, online tool that helps gather evidence to understand litter behavior in communities and tackle litter problems at the local level. It is a planning, communication, and evaluation tool.
- <https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/litter/epa-local-litter-check.pdf>

Great Lakes Circular Economy Strategy & Action Plan for Plastics, 2022

- The Council of the Great Lakes Region formed Circular Great Lakes to connect diverse stakeholders to work towards a zero-plastic future. The strategy and action plan provides a framework for eliminating plastic packaging waste and litter in the region.
- https://static1.squarespace.com/static/604fb702fe7a5e5180587522/t/62cec1adf0b61872b1703f0b/1657717168801/CGL-Strategy-and-Action-Plan_FINAL.pdf

Keep America Beautiful

- Many resources are accessible at the Keep America Beautiful website including webinars, publications, research, tools, and COVID-19 resources.
<https://kab.org/happenings/resources/>
- **2020 National Litter Study, 2021**
The study includes four major components, which provide a comprehensive view of litter in the US: a survey examining public attitudes about litter, a visible litter survey that provides an estimate of the litter on the ground across the country, behavioral observations that shed light on littering behavior in public, and a survey that estimates the public costs of litter in the US.
<https://kab.org/litter-study/>

- **Collaboration Guide, 2018**

This guide provides Keep America Beautiful affiliates, local governments, and other stakeholders with ideas for collaborating to achieve their litter prevention goals.

https://kab.org/wp-content/uploads/2019/11/Collaboration_Guide_Final-2.28.18.pdf

- **Defining and Measuring Outcomes, 2019**

This document provides guidance and tips for organizations when measuring program results.

https://kab.org/wp-content/uploads/2019/05/Measuring-Outcomes-Tip-Sheet_0.pdf

- **Enforcement and Prosecution Guide, 2018**

This guide provides local governments, code and law enforcement officers, Keep America Beautiful affiliates, and other stakeholders with ideas and resources to enhance their litter and illegal dumping enforcement programs.

https://kab.org/wp-content/uploads/2019/11/Enforcement_and_Prosecution_Guide_Final.pdf

- **A Guide to Reducing Litter, Managing Trash and Encouraging Recycling, 2017**

This guide focuses on proper management of waste in convenience stores and how operators can prevent and reduce litter.

https://kab.org/wp-content/uploads/2017/10/BeingaGoodNeighbor_AGuidetoReducingLitterManagingTrashandEncouragingRecycling.pdf

- **A Guide to Reducing and Managing Litter, 2015**

This guide focuses on proper management of waste in restaurant and food service establishments and how food service operators can prevent and reduce litter.

https://kab.org/wp-content/uploads/2019/08/BeingaGoodNeighbor_AGuidetoReducingandManagingLitter_0-1.pdf

- **Litter Abatement Curriculum, 2017**

This document provides KAB affiliates, law and code enforcement officers, concerned citizens, and other stakeholders with knowledge and tools to become informed about litter-related crime and ways in which it can be combatted.

https://keeplouisianabeautiful.org/wp-content/uploads/2020/06/Litter-Curriculum-Final_0.pdf

- **Model Ordinance, 2018**
This document provides information and an ordinance template to help cities and counties adapt and create their own litter ordinances.
https://kab.org/wp-content/uploads/2019/11/2018_Model_Ordinance-.pdf
- **Planning for Success: Ten Tips for Designing Public Space Recycling Programs, 2013**
This guide includes practices and program design elements for planning and creating recycling programs in public spaces.
https://kab.org/wp-content/uploads/2019/08/Planning_for_Success_Ten_Tips_for_Designing_Public_Space_Recycling_Programs_Guide_2018_0.pdf
- **Waste in Place Leader Service and Project-Based Learning, 2018**
This guide includes information, tools, and tips for developing and implementing projects and engaging and working with young people to prevent litter.
https://kab.org/wp-content/uploads/2019/10/LeaderGuide_2018-Final_1.pdf

Louisiana Local Government Litter Ordinance Template and Handbook, 2015

- The Louisiana Aquatic Litter Alliance created this how-to guide to help local governments develop and implement litter control programs.
- <https://keeplouisianabeautiful.org/wp-content/uploads/2015/09/Louisiana-Local-Government-Litter-Ordinance-Template-and-Handbook.pdf>

Pennsylvania's Litter Action Plan, 2021

- Based on research conducted by the Department of Environmental Protection, Department of Transportation, and Keep Pennsylvania Beautiful, the state of Pennsylvania developed the state's first litter action plan. The plan recommends actions that state government, the state legislature, local governments, businesses, and individuals can take to help prevent litter.
- <http://www.depgreenport.state.pa.us/elibrary/GetDocument?docId=4019447&DocName=2021%20PENNSYLVANIA%26%2339%3bS%20LITTER%20ACTION%20PLAN.PDF%20%20%3cspan%20style%3D%22color:green%3b%22%3e%3c/span%3e%20%3cspan%20style%3D%22color:blue%3b%22%3e%28NEW%29%3c/span%3e>

South Carolina Best Practices Guide for Community Service

- The South Carolina Litter Commission developed this guide to help cities, counties, and state agencies use the available resources, specifically community service workers, available within the judicial system for litter removal. It includes template forms.
- <https://www.dnr.sc.gov/pubs/BestPracticesGuide.pdf>

Tennessee Department of Transportation Highway Beautification Office Litter Grant Program Handbook, 2022

- This handbook provides information about the litter grant program for counties to apply and participate in the program.
- <https://www.tn.gov/content/dam/tn/tdot/environmental/Litter%20Grant%20Manual.pdf>

Tennessee Department of Transportation Scenic Roadway Handbook, 2021

- This handbook describes TDOT's scenic roadway programs, including the Scenic Highway, Tennessee Parkway, and Scenic Byway programs, and how communities can participate. It also includes information about the nomination process and resources available for routes designated as part of the Federal Highway Administration's National Scenic Byway Program.
- <https://www.tn.gov/content/dam/tn/tdot/environmental/Scenic%20Handbook%201.29.21.pdf>

Tennessee Litter Hotline

- The litter hotline (1-877-8LITTER) is an incident reporting system managed by the state that gives people a way to anonymously report the Tennessee license plate number of the vehicle from which a person was littering. TDOT sends educational materials about litter prevention to the reported litterers.
- <https://www.tn.gov/tdot/environmental-home/environmental-highway-beautification-office/litter.html>

Texas Illegal Dumping Resource Center

- This website has enforcement training resources for cities and counties in Texas, such as in-person and online classes and an illegal dumping enforcement officer's guide.
- <https://www.tidrc.com/>

Trash Cleanup BINGO

- This guide was created by a nonprofit organization called “because I said I would” to help communities organize volunteer service projects. It includes information, tools, and checklists.
- https://becauseisaidiwould.org/wp-content/uploads/2019/03/Trash-Bingo_Public_Update_1.24.19.pdf

Appendix H: Solid Waste Facilities in Tennessee by County as Reported to Tennessee Department of Environment and Conservation

Summary of County-Level Infrastructure

Table B-1 provides a summary of the solid waste and materials management infrastructure in place in Tennessee's counties as reported to TDEC on annual Progress Reports and facility reports. More detailed information about individual facilities is available on TDEC's Website.

Table B-1
Summary of Solid Waste and Materials Management Infrastructure by County

County	Class I LF	Class III/IV LF	Conv. Center	Transfer Station	HHW Facility	MRF	Baling
Anderson	1	1	6	0	0	0	0
Bedford	0	0	8	0	0	0	0
Benton	1	0	1	0	0	0	0
Bledsoe	0	0	5	0	0	0	1
Blount	1	1	1	0	0	0	0
Bradley	1	1	1	0	0	0	0
Campbell	0	0	9	1	0	0	1
Cannon	0	0	1	1	0	0	1
Carroll	0	0	1	1	0	0	1
Carter	0	1	3	1	0	0	1
Cheatham	0	0	5	0	0	0	1
Chester	0	0	5	1	0	1	0
Claiborne	0	1	8	0	0	0	1
Clay	1	0	1	0	0	0	1
Cocke	0	1	10	1	0	0	1
Coffee	0	1	10	0	0	0	1
Crockett	0	0	4	0	0	0	0
Cumberland	0	0	15	2	0	1	0
Davidson	0	2	3	3	1	0	0
Decatur	1	0	5	0	0	0	1
DeKalb	1	0	7	0	0	0	1
Dickson	0	1	10	0	0	0	1
Dyer	1	3	3	0	0	0	0
Fayette	0	1	1	0	0	0	1

Solid Waste and Materials Management Plan

County	Class I LF	Class III/IV LF	Conv. Center	Transfer Station	HHW Facility	MRF	Baling
Fentress	0	0	8	1	0	0	1
Franklin	0	0	16	1	0	0	1
Gibson	0	1	1	0	0	0	0
Giles	0	1	1	1	0	0	0
Grainger	0	0	8	0	0	0	0
Greene	0	2	17	1	0	0	1
Grundy	0	0	9	0	0	0	0
Hamblen	2	1	1	0	0	1	0
Hamilton	1	2	6	6	1	0	0
Hancock	0	0	1	0	0	0	0
Hardeman	1	0	12	0	0	0	1
Hardin	0	0	13	0	0	0	1
Hawkins	1	0	9	0	0	0	1
Haywood	0	2	1	0	0	0	1
Henderson	0	1	8	0	0	0	1
Henry	0	1	1	1	0	0	1
Hickman	0	1	4	1	0	0	1
Houston	0	0	1	0	0	0	1
Humphreys	0	1	7	0	0	0	0
Jackson	0	0	7	2	0	0	1
Jefferson	1	1	9	0	0	0	1
Johnson	0	0	1	1	0	0	0
Knox	0	3	7	3	1	0	0
Lake	0	0	1	0	0	0	0
Lauderdale	0	1	1	1	0	0	1
Lawrence	0	1	1	1	0	1	0
Lewis	0	1	1	1	0	0	1
Lincoln	0	0	3	1	0	0	1
Loudon	1	0	3	1	0	0	1
McMinn	2	2	1	0	0	0	0
McNairy	0	1	1	1	0	0	0
Macon	0	0	1	1	0	0	0
Madison	1	2	11	0	0	0	0

Comprehensive Litter Review: Strengthening and Coordinating Efforts to Reduce Litter and Illegal Dumping

County	Class I LF	Class III/IV LF	Conv. Center	Transfer Station	HHW Facility	MRF	Baling
Marion	1	0	10	0	0	0	0
Marshall	1	0	4	0	0	1	0
Maury	0	1	9	3	0	0	1
Meigs	0	0	3	0	0	0	0
Monroe	0	0	4	1	0	0	0
Montgomery	1	4	10	0	0	0	1
Moore	0	0	1	0	0	0	1
Morgan	0	1	3	1	0	0	1
Obion	2	0	0	0	0	0	1
Overton	0	0	9	1	0	0	1
Perry	0	1	1	1	0	0	1
Pickett	1	0	2	0	0	0	1
Polk	0	0	6	0	0	0	0
Putnam	0	1	8	3	0	0	1
Rhea	1	1	7	0	0	0	0
Roane	0	0	13	0	0	0	1
Robertson	0	1	9	1	0	0	1
Rutherford	1	1	15	0	0	0	0
Scott	1	0	1	0	0	0	1
Sequatchie	0	0	5	0	0	0	0
Sevier	1	2	10	1	0	0	1
Shelby	2	5	1	7	1	0	0
Smith	1	1	6	0	0	0	1
Stewart	0	0	7	0	0	0	0
Sullivan	1	2	2	2	0	0	1
Sumner	0	0	2	1	0	0	0
Tipton	0	1	1	0	0	0	1
Trousdale	0	0	1	0	0	0	0
Unicoi	0	0	3	0	0	0	0
Union	0	0	6	0	0	0	1
Van Buren	0	0	3	0	0	0	1
Warren	0	1	13	0	0	0	1
Washington	1	0	6	0	0	0	1

Solid Waste and Materials Management Plan

County	Class I LF	Class III/IV LF	Conv. Center	Transfer Station	HHW Facility	MRF	Baling
Wayne	0	0	1	1	0	0	1
Weakley	0	1	1	0	0	0	0
White	1	1	11	1	0	0	0
Williamson	0	1	9	2	0	0	1
Wilson	0	2	7	0	0	0	0
Statewide Total	34	67	505	62	3	5	53

LF = Landfill
 Conv. Center = Convenience Center
 HHW = Household Hazardous Waste
 MRF = Materials Recovery Facility

Source: Tennessee Department of Environment and Conservation 2015.

Appendix I: TACIR Waste Tire Report Insight



TACIR INSIGHT

TENNESSEE ADVISORY COMMISSION ON INTERGOVERNMENTAL RELATIONS
226 ANNE DALLAS DUDLEY BOULEVARD, SUITE 508, NASHVILLE, TENNESSEE 37243 • WWW.TN.GOV/TACIR

CLOSING GAPS IN TENNESSEE'S WASTE TIRE PROGRAM AND GIVING LOCAL GOVERNMENTS MORE FLEXIBILITY TO PREVENT ILLEGAL TIRE DUMPING

Background

Responding to complaints from constituents and finding widespread concern about illegal tire dumping in both urban and rural areas across the state, Senator Steve Dickerson and Senate Energy, Agriculture, and Natural Resources Committee Chairman Steve Southerland asked TACIR to study the issue of waste tires and suggest possible measures to prevent and reduce illegal dumping.

Abandoned tires provide breeding grounds for insects that spread dangerous diseases. They present a significant fire hazard with potentially harmful, resulting pollution. And tires are bulky and heavy, making cleanup costly and burdensome—particularly when large numbers are discovered in remote locations. Although Tennessee's existing waste tire program has been successful at diverting tires from landfills and recycling them, and many of the worst illegal tire piles have been cleaned up, TACIR's study finds that the tire program isn't structured to prevent ongoing illegal dumping issues.

Findings and Recommendations

- To reduce tire dumping, TACIR suggests closing regulatory gaps with regards to dealers selling used tires and the contractors that haul waste tires for disposal.
- To provide funding for counties and the state to manage waste tires, Tennessee, like many other states, charges a fee—currently \$1.35—on the sale of new tires. The report recommends expanding the state's existing fee on new tire sales to include sales of used tires, in order to better identify all sources of scrap tires and treat all businesses responsible for scrap tires equally.
- Given the notable hazards associated with illegally dumping tires, most states require tire haulers to obtain permits and require tire businesses to use only permitted waste tire haulers. This report recommends that Tennessee do the same, including proof of financial assurance as a condition of permit approval.
- Most of the revenue from tire pre-disposal fees returns to the counties where the tires were sold, and county governments are each responsible for their own waste tire management. The report recommends amending the law that currently restricts how counties can use that money, which could help counties fund more efforts to proactively target illegal dumping, like increased business inspections, community outreach, or purchasing surveillance equipment.

See TACIR's full report at the following link for additional information: <https://www.tn.gov/tacir/tacir-publications/publications-by-date.html>.