Managing Waste Tires in Tennessee:

Closing regulatory gaps and empowering local governments to reduce illegal dumping

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Executive Summary and Recommendations: Closing gaps in Tennessee's waste tire program and giving local governments more flexibility could prevent illegal tire dumping.

Illegal dumping can be a problem in any community—urban, rural, and everywhere in between. From the smallest scrap of litter to a mountain of trash, improper disposal of waste material is more than a nuisance; it is a public health risk, a sign of neglect, and a drain on public resources to clean up. Abandoned tires are particularly problematic. Illegally dumped tires and unmanaged outdoor stockpiles provide breeding grounds for pests—particularly mosquitoes—that spread dangerous diseases. Tires that catch fire are difficult to put out, and water used to extinguish a tire fire leaves behind harmful pollution. Tires are bulky and heavy, making cleanup costly and burdensome, particularly when large numbers are discovered in remote locations. In Knox County, for example, one hillside location where more than 4,000 illegally dumped tires have been found—along with other garbage—would cost approximately $120,000 to clean up.

The full extent to which tires are dumped illegally across Tennessee is unknown. However, over the last ten years, the Tennessee Department of Environment and Conservation (TDEC) has received and investigated more than 750 complaints of illegal dumping that included tires, with at least one complaint reported in 89 of the state's 95 counties. Moreover, approximately 5.4 million new tires were sold last year in Tennessee, generating a growing number of waste tires that must be managed. In response to constituent complaints and widespread concern among colleagues from urban and rural areas across the state, Senators Dickerson and Southerland requested that the Tennessee Advisory Commission on Intergovernmental Relations (TACIR) study problems stemming from illegal waste tire dumps in Tennessee (see appendix A and B). The Commission believes that a combination of tax and regulatory changes, along with improved public education and outreach, would improve upon the state's current efforts to address illegal tire dumps.

Tennessee has a program to manage waste tires.

Tennessee's 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." Under the Act, each county is obligated to provide a location for receiving waste tires—whole tires have been banned from Tennessee's landfills since 1995. Counties are responsible for contracting with businesses to dispose of their waste tires in a way that creates a beneficial end-use.

Each of the last two years, Tennessee counties reported disposing of approximately 56,000 tons of tires—an estimated 5 million individual tires or more. With a reported average cost of $90-per-ton, they spent about $5 million on tire processing. The market for recycled tire products is affected by ever-changing global conditions, and the value of Tennessee's used tires depends on demand.

To provide funding for counties and the state to manage waste tires, Tennessee, like many other states, collects a fee on the sale of new tires. This pre-disposal fee of $1.35 per tire is a privilege tax imposed on retail sales of new tires only—there is no fee collected on the resale of used tires. Tire retailers in Tennessee collected $6.3 million in tire disposal fees last year; online and out-of-state sales of tires delivered to Tennessee for installation generated another $300,000.

From the pre-disposal fees collected, counties receive $1.00 per new tire sold by retailers within their jurisdiction (and a proportionate share of out-of-state sales), totaling $5.4 million in the fiscal year 2018-19. Under state law, counties may use funds from the waste tire pre-disposal fee only for processing and repurposing tires for beneficial end uses such as cutting tires up for use as industrial fuel, grinding tires into crumbs for recreational applications, or using tires in civil engineering projects, including rubberized asphalt. After counties pay to have their waste tires hauled away and processed, the current pre-disposal fee leaves little revenue for county operating costs or cleanup of illegal dumps. For these reasons, some counties charge additional fees to cover the cost of collecting and processing tires for beneficial end-use, and those fees vary. Some counties give credit or reduced disposal fees to tire businesses that have collected new-tire pre-disposal fees, while others do not.

TDEC receives $0.25 per new tire sold—$1.4 million in the fiscal year 2018-19.[1] This money goes into TDEC's Solid Waste Management Fund (SWMF),[2] which is used for a variety of purposes, including technical and solid waste planning assistance for local governments, grants to improve recycling facilities and equipment, collection of household hazardous waste, and landfill cleanup. TDEC can use SWMF money to investigate and clean up illegal dumpsites, including those with large numbers of tires, and can assist with waste tire collection and disposal, but only one cleanup grant has been awarded since 2017 and there is no existing grant program designed to prevent illegal dumping before it starts.

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[1] Tire dealers keep the remaining $0.10 per new tire sold to offset the costs of accounting for and remitting collections to the Tennessee Department of Revenue.

[2] Tire pre-disposal fees comprise about 20% of the SWMF; the majority comes from a $0.90-per-ton surcharge on municipal solid waste sent to landfills.

Improving Tennessee's waste tire program could address illegal dumping.

While Tennessee's waste tire program has been successful at diverting tires from landfills and recycling them—and many large tire dumps have been cleaned up—several changes to the program could help state and local officials do more to address sources of illegal dumping. In particular, used tire dealers and the contractors that haul away waste tires are likely responsible for many illegal tire dumps—discarding worn-out tires rather than paying the cost of proper disposal—according to county solid waste directors, as well as environmental enforcement officials interviewed.[3] But under Tennessee's current waste tire program, local governments and the state have no simple way to determine who is selling and hauling used tires or where these tires are going.

In contrast, the identities and locations of retailers selling new tires in Tennessee are known because they must register with the Tennessee Department of Revenue to remit pre-disposal fees. Six states collect pre-disposal fees from the sale of both new and used tires. Several others require used tire dealers—and all businesses that generate waste tires—to register and maintain permits with their state environmental agency.

Recommendation: Used tire dealers have financial incentive to dump tires instead of paying the full cost of disposal. Because additional efforts to prevent dumping will require funding and because used tire dealers are not registered or regulated under the current fee system, the General Assembly should expand the current privilege tax (tire pre-disposal fee) on the retail sale of new tires to include retail sales of used tires.

Although anyone with a strong back and a truck can call themselves a waste tire hauler in Tennessee, most states require tire haulers to obtain permits given the notable hazards associated with illegally dumping tires.[4] In these states, businesses selling tires are classified as "scrap tire generators" and are responsible for proper disposal of their scrap tires, either on their own or by contracting with permitted tire haulers. Manifests are used to document how many tires are in each load, where those tires came from, where they are going, and who is taking them.

Many counties in Tennessee already require haulers to present manifests at disposal sites to check whether waste tires generated from the sale of new tires are being disposed of properly—using the Department of Revenue's report of fees collected as a proxy for new tire sales. But there is no standard among counties, no oversight of the third-party haulers that bring tires in for disposal, and no way to use these manifests to check

[3] The state does not track how many used tires are sold in Tennessee each year, though industry reports and consumer surveys suggest they may account for 10% of tire sales.

[4] Some of these states issue permits at no cost, while fees vary in others.

whether waste tires generated from the sale of used tires are being disposed of properly because these sales are not currently subject to the state's pre-disposal fees.

TDEC requires financial assurance from many types of businesses, including solid and hazardous waste storage facilities, oil and gas wells, and processors of radioactive materials, to ensure there are funds available when cleanups are required. One type of financial assurance is a surety bond, "a contract between a surety (e.g., an insurer) and the site's owner/operator (called the "principal"), in which the surety agrees to be financially responsible for any necessary clean up on the site if the principal defaults on its obligations." Several states require tire haulers to provide financial assurance before obtaining a permit.

Recommendation: Without a standard manifest to track tires from dealer to disposal, counties are unable to account for how many tires should be received. Counties cannot offer proper credit to dealers for the disposal fees they collect. Requiring a permit and financial assurance would help weed out irresponsible actors and provides relief if a hauler is found responsible for illegal dumping. The state should require anyone transporting tires to obtain a permit from TDEC, charging a reasonable permit fee and requiring proof of financial assurance (surety bond).

Beyond working to identify all potential sources of illegally dumped tires, local officials interviewed said that establishing a relationship between local government and tire businesses would be an effective way to hold businesses accountable and monitor activity, an ounce of prevention being worth a pound of cure. Residents and business owners may not know about their county's collection site, whether they can dispose of some tires for free, or what the penalties are for illegal dumping. And more awareness of the issue—including education about the spread of disease and other public health risks—could increase support for preventing tire dumping and lead to tips about illegal activity. Cities in several states are also using cameras and launching other types of surveillance programs to catch and prosecute criminals for dumping.

Local officials interviewed said they would like to use revenue from tire pre-disposal fees to fund outreach, education, and other actions designed to prevent illegal dumping. But under current law, revenue from the pre-disposal fees cannot be used for these purposes. As a result, these officials say they cannot afford to dedicate personnel to inspect and educate tire businesses and monitor suspected dumpsites or prioritize law enforcement resources for what is considered to be a nuisance.

Recommendation: County governments and TDEC should work together to educate tire businesses about the collection program and rules for proper storage of tires, explain the [potential] new hauler permit rules, and raise awareness about enforcement and penalties. Giving local authorities some flexibility with tire-fee money will let them fund efforts to prevent dumping, avoiding costly cleanups, and keeping waste tires in the program so they can be properly processed. The General Assembly should amend Tennessee Code Annotated, Section 67-4-1610, to explicitly allow counties to use tire-fee revenue for enforcement and illegal dump prevention.

Given the potential dangers of illegal tire dumps and the costs to clean them up, local governments would benefit from being able to identify all retailers that are sources of waste tires in their communities and from added flexibility for using their tire pre-disposal fee revenue. Moreover, registering tire haulers would help local authorities identify and inspect vehicles carrying tires, and requiring financial assurance would help provide relief if haulers are found responsible for illegal dumping. **For these reasons, the state should**

- **expand the current privilege tax on the retail sale of new tires to include the retail sale of used tires;**
- **require anyone transporting tires to obtain a permit from TDEC and provide proof of financial assurance, such as a surety bond; and**
- **authorize counties to use tire pre-disposal fee revenue to fund outreach, education, and other efforts to prevent tire dumping.**

Counties and TDEC may also benefit by working together to educate tire businesses about the waste tire disposal program and rules for proper storage of tires and to raise awareness about enforcement and penalties.

Managing Waste Tires Responsibly to Reduce Illegal Dumping

In the 1990s, Tennessee was among the many states responding to a scrap tire crisis. Millions of old tires each year were being sent to landfills or piled up waiting for disposal—the tire industry estimated there were possibly two billion tires sitting in stockpiles across the country—and only a small portion of the growing number of scrap tires generated each year were being repurposed or recycled.[5] Tennessee's Solid Waste Management Act of 1991 sought to reduce the amount of all types of solid waste sent to the state's landfills, through reuse, composting, and recycling, and established a policy to promote and purchase goods made from recovered and recycled materials. To help fund waste tire cleanup efforts and support the beneficial end use of scrap tires, the Act established a $1.00 tire pre-disposal fee on the sale of new replacement tires and banned whole tires from the state's landfills beginning in 1995.[6]

Today in Tennessee, there are only a couple of giant tire stockpiles once common in the 1980s and 1990s and about two dozen known sites with even 1,000 tires left to clean up.[7] But with 6.1 million registered vehicles on the road,[8] more than five million new replacement tires are sold each year,[9] and TDEC reports approximately 59,000 tons of scrap tires—between 5.1 and 5.9 million tires—were collected and processed for beneficial end uses in each of the last two years.[10]

Tire dumping is a widespread problem throughout Tennessee.

Unfortunately, some of the tires removed and replaced don't get disposed of properly. Instead, they get dumped illegally in the state's forests and waterways or piled and abandoned in empty buildings and vacant city lots. For example, one nonprofit cleanup project found 42 tires among the 2,600 pounds of trash that it removed from the

[5] US Tire Manufacturers Association 1990.

[6] Public Chapter 451, Acts of 1991; Tennessee Code Annotated Title 67, Chapter 4, Part 16, and Title 68, Chapter 211, Part 8.

[7] Email correspondence with Larry Christley, TDEC, November 18, 2019, and TDEC "Waste Tire Cleanup Grant."

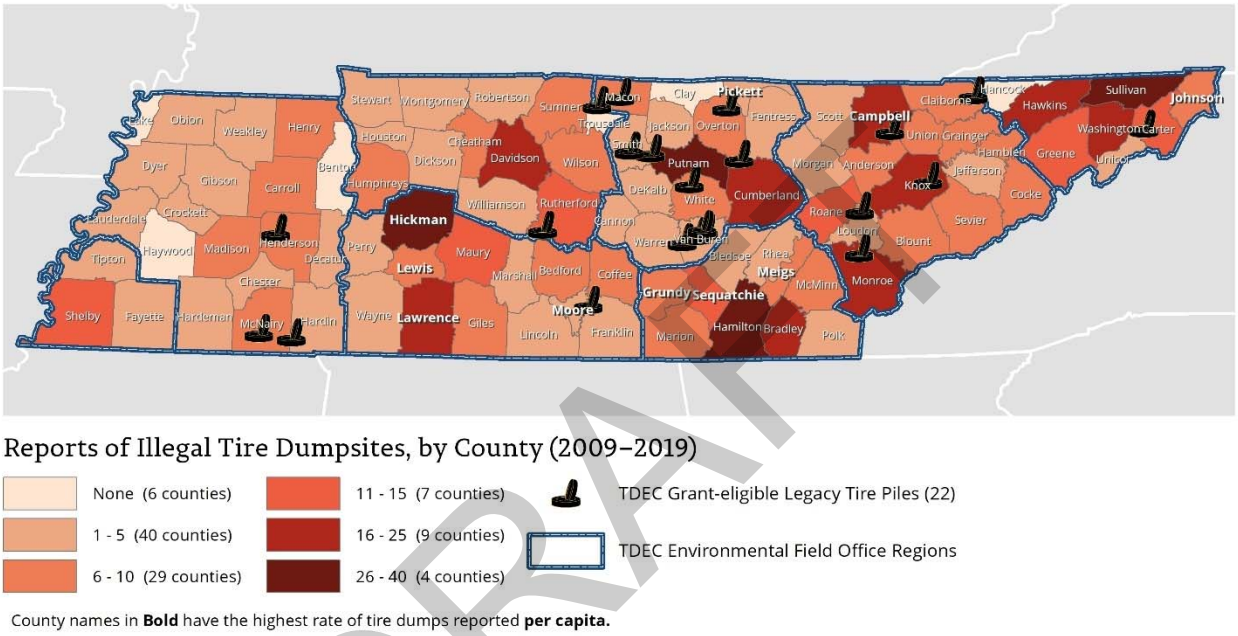
[8] Alliance of Automobile Manufacturers "State Facts."

[9] Retailers paid $6,354,121 in pre-disposal fees in FY 2019, divided by $1.25 per tire (dealers keep $0.10 from the $1.35 fee) equals 5,083,297 new tires sold.

[10] TDEC Annual Solid Waste Progress Reports, 2017 and 2018, via email correspondence with Bob Fletcher, TDEC Problem Waste Consultant, July 11, 2019. One commonly used industry estimate for counting tires is 20 pounds per tire (see Ohio EPA "Measuring Tire Piles"). A study of actual scrap tire weights (Badila 2013) determined an average weight of 23.7 pounds.

Cumberland River in November 2019.[11] The full extent to which tires are dumped illegally across Tennessee is unknown, but we do know that, over the last ten years, TDEC has received and investigated more than 750 complaints of illegal dumping that included tires, with at least one complaint reported in each of 89 of the state's 95 counties. See figure 1. As of November 18, the department had received 96 complaints concerning tires in 2019, issuing 44 notices of violation in 25 separate counties.

Figure 1. Illegal Tire Dumpsites Reported, 2009-2019



Source: TDEC "Solid Waste Management Dataviewer," "Waste Tire Cleanup Grant," and "TDEC Field Offices."

Introducing Legislation to Study Illegal Tire Dumping in Tennessee

While 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, it doesn't specifically address illegal dumping issues. Although the program has changed in the years since its inception, its purpose remains focused on the collection and recycling process. The Solid Waste Management Act required each county in Tennessee to operate a collection site for scrap tires.[12] Initially, TDEC received the money from tire pre-disposal fees, and the state was responsible for distributing grants to counties to help build the necessary infrastructure for the waste tire program. Responsibility shifted more

[11] Summers 2019.

[12] Tennessee Code Annotated, Section 68-211-866.

towards county governments in 2014, in response to feedback from county mayors that tire-fee revenue should be sent back directly to the counties where tires were being sold.[13]

On March 28, 2019, Senator Steven Dickerson, representing areas of Davidson County, introduced Senate Joint Resolution 344, directing the Tennessee Advisory Commission on Intergovernmental Relations (TACIR) to study problems stemming from illegal waste tire dumps in Tennessee. See appendix A. Senator Dickerson's office had been receiving complaints from constituents, and the senator found widespread concern among his legislative colleagues from both urban and rural areas of the state. The legislation was referred to the Senate Energy, Agriculture, and Natural Resources Committee on April 1st, but the 111th General Assembly adjourned without taking up the bill. Senator Dickerson, with support from Senate Energy, Agriculture, and Natural Resources Committee Chairman Steve Southerland, sent a letter on May 5th to formally request that TACIR take up the study, which the Commission voted to do at its May 2019 meeting. See appendix B.

Illegal tire dumping is harmful to Tennesseans.

Wherever they are found, abandoned tires are problematic—a public health risk, a sign of neglect, and a drain on public resources to clean up. Illegally dumped tires and unmanaged outdoor stockpiles provide breeding grounds for pests—particularly mosquitoes—that spread dangerous diseases. Tires that catch fire are difficult to put out, produce noxious smoke, and runoff from water used on tire fires leaves behind harmful pollution. Tires are bulky and heavy, making cleanup costly and burdensome, particularly when large numbers are discovered in remote locations.

Abandoned tires make ideal breeding grounds for pests.

The design of tires makes them an ideal nursery for mosquito larvae; their shady interior cavities trap rainwater and keep it from evaporating, while their rubber construction retains heat that speeds up mosquito egg hatching and larval growth. They also collect leaf litter and debris that provides nutrition for the larvae. One study, with field data collected from used tire shops and discarded tires in Argentina, found that 65% of locations studied and were infested with mosquitoes. Half of all tires found contained water, and a third of those held mosquito larvae. The study notes that "the percentage of infested tires in shaded microhabitats was double that for sun-exposed tires."[14] A report on mosquito control from the National Association of County and City Health Officials (NACCHO) advises, "Larval source reduction is the most effective means of

[13] Public Chapter 457, Acts of 2013. See also TDEC "Waste Tire Program Transition."

[14] Rubio, Cardo, and Vezzani 2011.

vector control. Mosquito larvae develop in standing, freshwater: through environmental modifications, you can limit the water sources, thereby reducing mosquito larvae."[15]

Mosquitoes and other disease vectors are spreading

Some of the world's most deadly diseases are carried and transmitted by mosquitoes. Vector Disease Control International estimates that up to a million people die every year from mosquito-borne illness, with many countries around the world ravaged by malaria, yellow fever, and dengue-hemorrhagic fever.[16] According to the US Centers for Disease Control and Prevention (CDC), nine new germs spread by mosquitoes and ticks—including the Chikungunya and Zika viruses—have been identified in the US since 2004.[17] See appendix C for common vector-borne disease cases by state. In 2017, scientists in Colorado found three species of mosquito that had not previously been recorded in the state, raising questions as to the effect human migration has on insect habitats and territories. That author noted in particular that "Used tires have allowed the notorious Aedes albopictus (Asian Tiger mosquito) and Aedes aegypti (Yellow Fever mosquito) to increase their range as tires are transported to recycling facilities across the country."[18]

West Nile Virus

West Nile virus (WNV) is the leading cause of mosquito-borne disease in the continental United States. It is most commonly spread to people by the bite of an infected mosquito.[19] The CDC documented 2,647 cases of WNV in 2018, including 167 fatalities. Because the species of mosquito that transmits WNV among carrier animals (e.g., birds) is less prevalent here, Tennessee only reported 12 cases of WNV in 2018. Unfortunately, however, four of those cases were fatal.

La Crosse Encephalitis

At the commission's September 2019 meeting, Dr. Abelardo C. Moncayo, director of the Vector-Borne Diseases Program at the Tennessee Department of Health, explained how the transportation of tires helped the Asian Tiger mosquito spread across the southeastern US after its arrival in Houston. The spread of this mosquito led to the spread of La Crosse Encephalitis—previously common in the upper Midwest, but now widespread throughout southern Appalachia, including Tennessee. See figure 2. La

[15] NACCHO 2017.

[16] Vector Disease Control International. "Public Health: U.S. Mosquito-Borne Diseases."

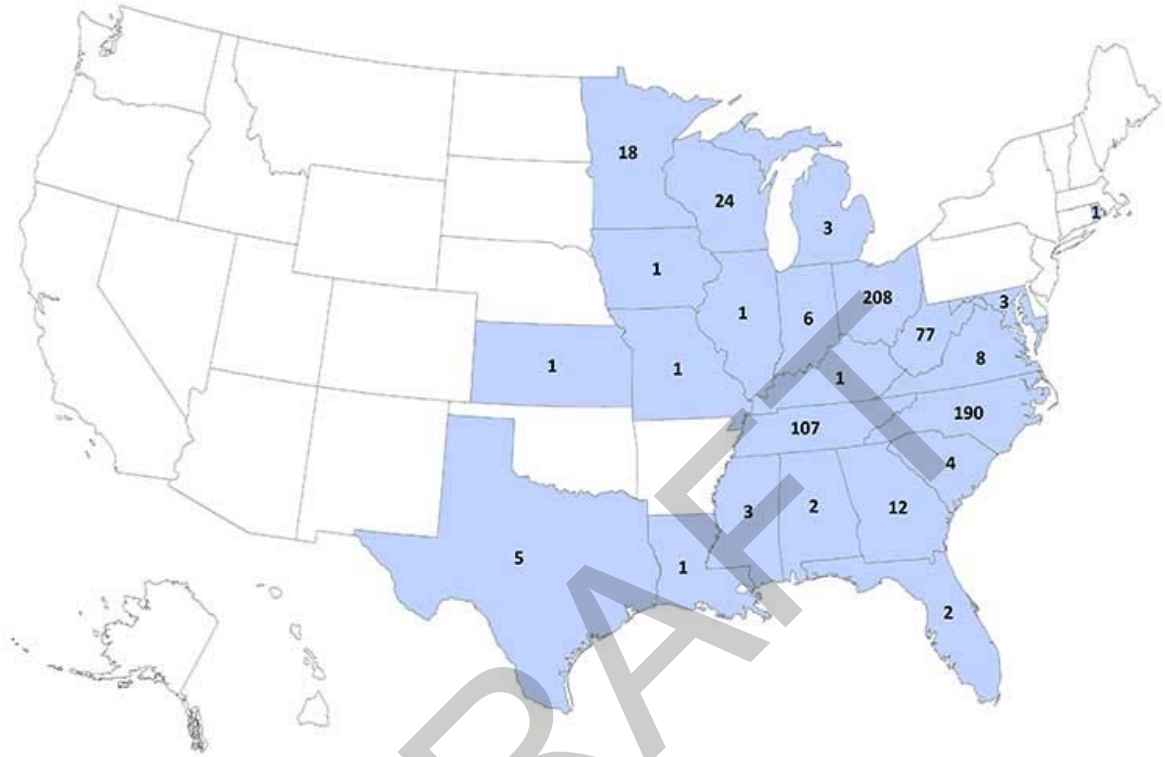
[17] CDC. "Illnesses on the rise."

[18] Renfro 2019.

[19] CDC. "West Nile virus."

Crosse encephalitis is the leading mosquito-borne disease among children and is transmitted via the bite of Aedes mosquitoes infected with La Crosse virus.[20]

Figure 2. La Crosse Encephalitis Cases Reported by State, 2009-2018



Source: ArboNET, Arboviral Diseases Branch, Centers for Disease Control and Prevention.

Zika Virus

After 62 cases of Zika virus symptoms in travelers returning from affected areas were reported to the CDC in 2015, the spread of the Zika virus took off in 2016. Five thousand one hundred sixty-eight symptomatic Zika virus disease cases were reported to the CDC, including 224 cases acquired through presumed local mosquito-borne transmission in Florida (218) and Texas (6). Sixty-one cases were reported in Tennessee in 2016, dropping to just two in 2017 as the disease waned across the country. Symptoms of Zika are mild in most people, but the disease is particularly dangerous for pregnant women and their babies.

[20] NIMBioS 2017.

Chikungunya

According to the CDC, Chikungunya disease does not often result in death, but the symptoms can be severe and disabling. In late 2013, the first local transmission of chikungunya virus in the Americas was identified in Caribbean countries and territories. In 2014, cases were reported among U.S. travelers returning from affected areas in the Americas, and local transmission was identified in Florida, Puerto Rico, and the U.S. Virgin Islands. Eight hundred ninety-five cases were reported in 2015, including nine in Tennessee.

Dengue Fever

There have been 14 cases of dengue fever reported in Tennessee in 2018 and 2019.[21] Dengue is a disease typically brought back to the US by travelers who were bitten by infected mosquitoes in other parts of the world, but local cases of dengue have been observed in Florida and Texas, and a small number of infected mosquitoes from those states could begin to spread.[22]

Heartworm (Dirofilaria immitis)

Humans aren't the only victims of mosquito-borne diseases. Heartworm disease, so-called because it is caused by a parasitic worm that lives in the heart, lungs, and associated blood vessels of an infected animal, is spread to dogs and cats through the bite of a mosquito.[23] The 2016 American Heartworm Society Incidence Survey listed Tennessee among the top five states for heartworm cases, and the Companion Animal Parasite Council shows pets in Tennessee are at very high risk for heartworm in 2019.[24] See figure 3.

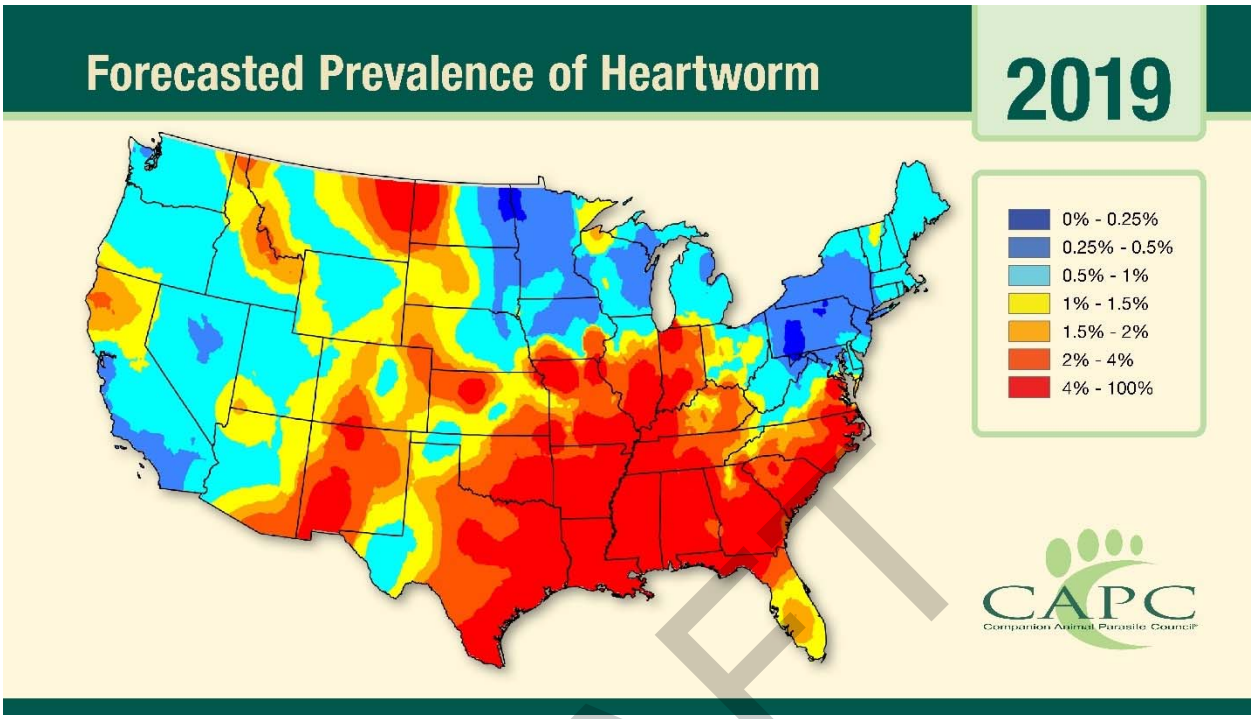
[21] CDC ArboNET.

[22] Maron 2013.

[23] US Food and Drug Administration. "Facts about Heartworm Disease."

[24] American Heartworm Society "Heartworm by the Numbers" and Companion Animal Parasite Council "Forecasted Prevalence of Heartworm."

Figure 3. Forecasted Prevalence of Heartworm, 2019



Source: Companion Animal Parasite Council, 2019.

Tickborne disease cases in Tennessee outnumber those spread by mosquitoes

There were nearly seven times as many tickborne disease cases reported in Tennessee in 2016 than mosquito-borne, the most common being Rocky Mountain Spotted Fever.[25] In June of 2019, the Health Department was reporting increased cases of tick-borne illness with 532 Spotted Fever cases and 127 reports of Lyme disease.[26] Doctors and researchers at the University of Tennessee are noticing more cases of Lyme disease in East Tennessee.[27] White-footed mice are the principal natural reservoirs for Lyme disease bacteria, along with chipmunks and shrews.[28] To prevent rodent infestations, the CDC advises people to remove "old trucks, cars, and old tires that mice and rats could use as homes."[29]

[25] CDC. "Tennessee: Vector-borne Diseases Profile (2004-2016)."

[26] Miller, 2019.

[27] Hickling, et al. 2018.

[28] Cary Institute of Ecosystem Studies. "Lyme Disease Research."

[29] CDC. "Clean Up!"

Tire fires are difficult to fight and pollute the environment.

The US Fire Administration (USFA) has long warned of the "serious fire protection challenges" scrap tires present to fire departments across the country. The agency said in 1998:

Tires burn with a higher per-pound heat output than most coal, and the high heat production of tire rubber makes extinguishment very difficult. Tire fires yield large amounts of oil that are flammable and environmentally contaminating. Tire fires frequently become major hazardous materials (Hazmat) incidents affecting entire communities, often requiring neighborhood evacuations and protracted fire operations. These fires threaten pollution of the air, waterways, and water table.[30]

In September 1999, lightning struck a tire stockpile in Stanislaus County, California, igniting the nearly seven million tires in a blaze that took the response team 30 days to fully extinguish. The US Environmental Protection Agency's (EPA) report cites "extremely hot and unstable fire conditions, heavy equipment operations on steep slopes, deep and spongy tire piles, [and] controlling massive volumes of oil and water runoff" among the most difficult problems. The fire produced large quantities of pyrolytic oil from melting tires that flowed into the drainage of an intermittent stream—over 250,000 gallons of the oil was recovered from a retention pond, and an estimated 4 million gallons of contaminated firefighting water was impounded on-site in a series of constructed retaining basins. The EPA estimated its total response costs were about $3.5 million.[31] The oil, created when tires melt, contains naphthalene, trichloroethane, tetrachloroethane, ethylene, toluene, polyaromatic hydrocarbons (PAHs), and heavy metals; air pollutants from burning tires include benzene, PAHs, phosgene, naphthalene, toluene, styrene, acrylonitrile, formaldehyde, carbon disulfide, sulfuric dioxide, carbon dioxide, and numerous heavy metals.[32]

In a more recent example, the Liberty Tire Recycling facility in Louisville, Kentucky, caught fire on November 3, 2014. The state had been in an ongoing enforcement battle with the company over the number of tires it was storing and how they were being stored. After the fire broke out, nearby residents were asked to seal windows, doors, and ventilation systems, and officials cautioned those with respiratory problems against going outside, while police established a barricade about a mile around the fire.[33] Because

[30] US Fire Administration 1998.

[31] EPA 2000.

[32] USFA 2002.

[33] Glowicki 2014 and Peterson 2015.

these events are not predictable, planned expenses, responding to a large tire fire, can cut into the funding earmarked for other projects. After the Liberty fire, Kentucky expressed concern about an estimated one million tires stored at other known sites, with a potential cleanup cost in the case of a fire of roughly $2 million. In comparison, the state was generating about $2.6 million annually from new tire fees, so another large-scale fire could severely restrict funding availability over several years.[34]

When the locations of potentially dangerous tire piles are known, at least governments have some ability to monitor conditions and be prepared. Being unexpectedly faced with an unknown tire fire adds even more difficulty. In August 2018, firefighters in Atlanta, Georgia, battled a "massive" fire at an abandoned apartment building where fire officials discovered hundreds of tires had been dumped illegally.[35] This is a situation that could have happened in any Tennessee city, with first responders arriving unaware of the hidden dangers they will face. Memphis, for example, is plagued by abandoned properties. The city's environmental enforcement manager told staff that abandoned houses are often "stacked to the ceiling with illegally dumped used tires."[36]

Small fire departments in rural areas could easily become overwhelmed by a fire at an illegal dumpsite and may not be trained in proper techniques or have the necessary equipment to extinguish a tire fire and contain the run-off. A pile of 100,000 tires in rural Odessa, Texas, caught fire in 2017, and the nearest fire hydrant was four miles away. The fire grew larger as firefighters drove tanker trucks back and forth, and officials called in the EPA for assistance. Without an adequate water supply, the fire burned for a week while crews smothered it with dirt.[37] Even if the water is available, tire fires should be handled differently than other, more common fires. The US Fire Administration says, "direct application of water or foams generally does not provide effective extinguishment in tire fires. Rather, water is best used to keep the unburned tires from igniting." It adds, perhaps counterintuitively, that air pollution can often be minimized by letting the fire "free burn," consuming most of the fuel. It recommends concentrating on removing unburned tires from the fire to take away its fuel. The bigger concern, it says, is the large volume of run-off oil produced by tire fires, which should be contained and collected to avoid contamination of ground and well water.[38]

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[34] Kentucky Division of Waste Management 2015.

[35] Prince 2018.

[36] Torian Harris, phone interview June 4, 2019.

[37] Schlanger 2017.

[38] USFA 1998.

Cleaning up illegal tire dumps can be expensive.

The very conditions that make a remote, hidden location susceptible to illegal dumping can cause cleanup costs to skyrocket. One steep hillside in Knox County had reportedly been troubled with illegal dumping for nearly 50 years. In 2018, the county estimated that more than 4,000 tires were among the assorted garbage discovered when it began cleanup efforts. "It's really bad, and it's really difficult to get to because of the steep slopes," Knox County Solid Waste Director Drew Thurman told reporters.[39] County commissioners estimated a budget of $120,000 to clean the site, which doesn't include the additional $42,000 or more a nearby church agreed to pay for a fence along the road to deter future dumping.[40] For small-scale, common tire cleanup projects, costs are less substantial, but illegal dumping still places a strain on tight county budgets—especially those without the financial resources of a county like Knox. In 2018, for example, Putnam County applied for a grant to help recoup $5,663 it spent collecting and disposing of 829 tires from four separate locations.[41]

Counties in Tennessee often use jail work crews to pick up litter and smaller amounts of tires, but one report from Knox County said a 2016 change to the state's penalty for drivers under the influence (DUI) reduced the number of offenders available for cleanup. "Before the law was changed in 2016," the report says, "first-time DUI offenders . . . were required to complete a 24-hour litter pickup service, done in three eight-hour installments," and that "[t]he county has struggled to clean its roads ever since [the law was changed]."[42] Section 14 of Public Chapter 876, Acts of 2016, did amend Tennessee Code Annotated, Section 55-10-402(a), to remove mandatory litter cleanup for first-time (and repeat) DUI offenders, but left intact paragraph (d)(1), which gives judges discretion to order additional litter cleanup duty after offenders have served their minimum jail sentences.[43] The law was changed, according to Knox County Commissioner Carson Dailey, because smaller counties couldn't afford to maintain the litter crews. A later news story said the county worked with its District Attorney to make sure more offenders had litter cleanup added to their sentences, and that it hired full-time litter staff to fill in the gap—something else those small counties may not have the budget to afford.[44]

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[39] Halm 2018.

[40] Whetstone 2018.

[41] Email correspondence with Cavene McHayle, TDEC Solid Waste Financial Officer, November 20, 2019.

[42] Whetstone 2017.

[43] See 2015 Tennessee Code Annotated § 55-10-402 and current version.

[44] Whetstone 2018.

No matter how counties struggle with the costs of illegal tire dumping, the possibility of a tire fire adds a significant amount of risk. The State of Kentucky noted in its 2014 Waste Tire Program Report that cleaning a post-fire site is much more costly than removing the same volume of tires at a typical dumpsite, citing a 2013 fire that cost the state's Waste Tire Trust Fund $649,050. The report says that, when the responsible party is unable to remediate a fire site themselves, the state's potential liability for cleanup after tire fires is "one of the highest potential costs the cabinet faces."[45]

How Waste Tires are Managed in Tennessee

In 1991, then Tennessee Governor Ned McWherter issued executive orders that merged environmental programs from what was then the Department of Health and Environment with those in the Department of Conservation, creating Tennessee's current Department of Environment and Conservation.[46] The same year, the General Assembly passed the Solid Waste Management Act of 1991, which, among many changes made to the state's solid waste management policies, created a statewide waste tire program under the direction of TDEC. The Act contained several provisions regarding how waste tires would be managed in Tennessee:

- Beginning October 1, 1991, the state imposed a $1.00 pre-disposal fee on the sale of each new replacement tire in Tennessee, which required retailers selling new tires to register with the Department of Revenue and to remit fees quarterly, keeping 10% to compensate their overhead costs if paid on-time.
- The Act created a Solid Waste Management Fund (SWMF), into which the pre-disposal fees were deposited, and from which funds could not be diverted to the state's general fund. The state also imposed a surcharge of $0.85 per ton on municipal solid waste received at landfills, to be deposited into the SWMF.
- Effective January 1, 1995, whole (unshredded) waste tires could not be accepted at any landfill. Using money from the SWMF, the law said the state intended to either purchase its own mobile tire shredders or contract with businesses to provide tire-shredding services.
- Each county was required to provide at least one site to collect and store waste tires.
- From the SWMF, the state offered counties a one-time-only grant to assist the establishment of waste tire collection sites.[47] In 1996, this part was amended,

[45] Kentucky 2015.

[46] TDEC "TDEC at 25."

[47] Public Chapter 451, Acts of 1991.

authorizing TDEC to continue offering assistance grants to counties for locating, collecting, and appropriately disposing of waste tires.[48]

In 1998, Tennessee Code Annotated, Section 68-211-867, regarding waste tire disposal, was completely rewritten.[49] Up to that point, the direction of the waste tire program had been to reduce stockpiles of scrap tires by shredding them, still allowing for the disposal of shredded tires in landfills. The 1998 law, however, directed TDEC to develop a program to manage waste tires "for beneficial end-use." Beneficial end uses were—and still are—defined to include the production and burning of tire-derived fuel, cement manufacturing, crumbling or pyrolysis of tire material, or any other use approved by TDEC, so long as the state was not mandating that anyone is required to use products derived from waste tires.[50] The law continued to use SWMF money for mobile tire-shredding, allowed TDEC to contract directly with beneficial end users for recycling waste tires, and continued to offer grants to counties. Importantly, the new law prohibited counties from disposing of shredded tires in landfills after July 1, 2002, if doing so was more expensive than the cost of available beneficial end-use.

As time passed, county governments sought to take on more direct responsibility for their waste tire management. According to TDEC, the statewide shredding service provided to counties was discontinued on July 1, 2002.[51] State shredding contractors were unable to keep up with the growing number of tires, often leaving counties to stockpile tires with no means for disposal.[52] However, language stating, "…the department shall contract for services of a mobile tire shredder to operate throughout the state as waste tire disposal needs may require" remained in statute until 2007.[53] The state raised the tire pre-disposal fee from $1.00 to $1.35 in 2007; retailers were allowed to keep 10 cents from every tire instead of 10%, but the remaining $1.25 went into the SWMF to be distributed as grants back to counties.[54]

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[48] Public Chapter 846, Acts of 1996. Codified as Tennessee Code Annotated, Section 68-211-831.

[49] Public Chapter 587, Acts of 1998.

[50] Public Chapter 462, Acts of 2007, added "recreational applications, including but not limited to, playgrounds, running tracks, and walking paths" to the definition of beneficial end use, and authorized TDEC to use SWMF money for "grants to local education agencies, municipalities or counties to utilize recycled shredded tires for recreational applications."

[51] TDEC "Waste Tire Program."

[52] TDEC 2017.

[53] Public Chapter 462, Acts of 2007. Also 2006 Tennessee Code Archive, Section 68-211-867(c).

[54] Public Chapter 602, Acts of 2007, amending Tennessee Code Annotated, Section 67-4-1603.

Examples of tire cleanup grants awarded include:

- 2007—A $40,000 Waste Tire Cleanup Grant for Greene County "to help fund the cleanup of thousands of tires that were dumped in the Nolichucky River decades ago."[55]
- 2007—A $7,500 Waste Tire Cleanup Grant for Marion County, where "Approximately 1,500 to 2,000 tires were dumped at each of the sites on Francis Springs Road and Bessie Jones Road in Jasper."[56]
- 2008—A $5,850 Waste Tire Cleanup Grant for Smith County to clean up "an unknown number of tires mixed with large appliances and other debris."[57]
- 2008—A $163,305 Waste Tire Cleanup Grant for Fayette County to clean up a site that "contains more than 100,000 used tires."[58]
- 2009—A $115,000 Waste Tire Cleanup Grant for Hickman County for a site with "approximately 10,000 tires."[59]

A Waste Tire Task Force comprised of members recommended by professionals in Tennessee tire management programs and selected by the Commissioner of the Tennessee Department of Environment and Conservation met in 2009 to review the existing waste tire program and make recommendations for change. The state's tire grant program at the time required counties to be able to match tires eligible for grant funding to fees collected, and members of the task force recognized several difficulties stemming from reporting problems, dealer monitoring, and unregulated tire haulers. Ultimately, however, the group did not find enough support for many of its ideas.[60] A few years later though, responding to continued calls from county mayors for more direct control of pre-disposal fees, the General Assembly passed Public Chapter 457, Acts of 2013, phasing out the state's waste tire recycling grant programs and amending the law to distribute revenue from tire fees directly to the counties where the tires are sold. Since the passage of this act, $0.25 from each tire sold is sent to the SWMF and $1.00 is returned to the county in which the tire was sold "to be used for beneficial end use of waste tires in

[55] TDEC 2007b.

[56] TDEC 2007.

[57] TDEC 2008.

[58] TDEC 2008b.

[59] TDEC 2009.

[60] TDEC "Waste Tire Task Force."

accordance with [Tennessee Code Annotated, Section] 68-211-867 and not used for any other purposes."[61]

Tennessee is one of many states that collects tire disposal fees.

According to the latest information from the US Tire Manufacturers Association (USTMA), Tennessee is one of 37 states that collects a tire pre-disposal fee.[62] TACIR staff identified fees in 33 states, ranging from $0.25 per tire in Indiana[63] and Kansas[64] to $3.00 per tire in Arkansas.[65] Six states—Tennessee, not among them—collect disposal fees on the sale of used tires. See table 1.

The USTMA reports that 13% of scrap tires collected get culled for possible resale[66] and that 10% of drivers surveyed say their current vehicle has a purchased used tire.[67] If an estimated 5.5 million tires are being disposed of each year in Tennessee, then an additional 800,000 used tires are potentially being culled for resale, and 10% of the 6.1 million registered vehicles in the state[68]—more than 600,000—could have used tires purchased in Tennessee without a pre-disposal fee. If the fee were applied to these sales, it could possibly generate $150,000 in additional revenue for TDEC and $600,000 across all counties. How much each county gains would depend on its local used tire sales, which are unknown at this point.

Many states require tire retailers—new and used—to apply for permits.

While most states choose not to collect disposal fees from the sale of used tires, nearly all require scrap tire generating businesses to obtain permits or have other statewide regulations for scrap tire storage. Tennessee is one of only six states (Alaska, Hawaii, Massachusetts, Nebraska, and West Virginia are the others) that the USTMA says do not have "storage and disposal regulation" or permits. How much these permits cost, if anything at all, varies among states. In Alabama, for example, a Class One "Scrap Tire Receiver" includes all retail tire dealers, retreaders, and used tire dealers. There is no fee

[61] Tennessee Code Annotated, Section 67-4-1610(b).

[62] USTMA 2018.

[63] Burns Indiana Code Annotated, Section 13-20-13-7. Includes a fee for tires on new vehicles sold.

[64] Kansas Annotated Statutes, Section 65-3424d. Includes a fee for tires on new vehicles sold.

[65] Arkansas Code Annotated, Section 8-9-404. $3.00 is the fee for new tires; a $1.00 fee is charged to replace a tire with a used tire.

[66] USTMA 2018.

[67] USTMA 2017.

[68] Alliance of Automobile Manufacturers 2019.

Table 1. States with Tire Pre-disposal Fees

State	Fees Collected on: New Tires	Used Tires	Tires on New Vehicles
Tennessee	**$1.35**	**n/a**	**$5.00**
Alabama	$1.00	$1.00	n/a
Alaska	$2.50	n/a	n/a
Arizona	2% up to $2.00	n/a	$1.00 or 2% ($2.00 max)
Arkansas	$3.00	$1.00	n/a
California	$1.75	n/a	$1.75
Colorado	$0.55	n/a	n/a
Delaware	$2.00	$2.00	n/a
Florida	$1.00	n/a	$1.00
Georgia	$1.00	n/a	n/a
Illinois	$2.50	$2.50	n/a
Indiana	$0.25	n/a	$0.25
Kansas	$0.25	n/a	$0.25
Kentucky	$2.00	n/a	n/a
Louisiana	$2.25	$1.25	n/a
Maine	$1.00	n/a	n/a
Maryland	$0.80	n/a	$0.80
Mississippi	$1.00 or $2.00	n/a	n/a
Missouri	$0.50	n/a	n/a
Nebraska	$1.00	n/a	$1.00
Nevada	$1.00	n/a	n/a
New Jersey	$1.50	n/a	n/a
New Mexico	$1.50	n/a	n/a
New York	$2.50	n/a	n/a
North Carolina	2% (1% on tires >20")	n/a	n/a
Ohio	$1.00	n/a	n/a
Oklahoma	$2.90	$2.90	n/a
Pennsylvania	$1.00	n/a	n/a
Rhode Island	$0.50	n/a	n/a
South Carolina	$2.00	n/a	n/a
Utah	$1.00	n/a	n/a
Virginia	$0.50	n/a	n/a
Washington	$1.00	n/a	n/a

to register, but it means the Alabama Department of Environmental Management is aware of all tire businesses in the state.[69] Kentucky law says anyone "who accumulates more than 25 waste tires for purposes of processing, transports more than 50 tires at a time or accumulates more than 100 waste tires shall register with the state, post-financial assurance and receive approval before beginning operation." The amount of financial assurance required is $1 per passenger tire equivalent, with a minimum amount of $10,000. Arkansas charges $200 for an initial tire collection permit and $50 each year after for renewal.[70]

Tennessee charges a separate fee on the sale of tires with a new vehicle.

Seven states apply the same disposal fee to the sale of replacement tires and for tires sold as part of the purchase of a new vehicle. Alternatively, Tennessee has created a separate program, funded by fees on the sale of new vehicles. In 2015, the Tennessee General Assembly approved the Tire Environmental Act[71] to establish a fee on each purchase of a new motor vehicle. TDEC administers the fee, but revenue is entirely separate from the Solid Waste Management Fund and is intended to be used for tire environmental programs, including local grants, subsidies or loans. For most vehicles—those with four or fewer wheels—the fee is $5.00. There is a $10.00 fee for vehicles with up to ten wheels and $15.00 for vehicles with 11 or more. The fund has collected approximately $1.2 million in each of the three full fiscal years since its inception.[72] More than $2.8 million has been awarded to date, including a $1.3 million grant to Patriot Recycling, located in Bristol, Tennessee, for the company to purchase the equipment needed to produce crumb rubber products that can be used for playgrounds, trails, and tree surrounds. TDEC staff say, "Since this project began operation, we continue to see increased interest in the beneficial end-use market and see this opening the doors for many of our communities."[73]

Tennessee's counties are responsible for waste tire management.

Since 2014, counties have been responsible for managing waste tires generated within their boundaries, receiving $1.00 from each new tire sold by businesses located in their jurisdiction to help cover the cost of collecting and processing those tires for beneficial end-use. In FY 2019, $5.4 million in tire fees was returned to counties; Shelby County

[69] Alabama Department of Environmental Management. "Scrap Tire Program."

[70] Arkansas Department of Environmental Quality. "Tire Accountability Program."

[71] Public Chapter 525, Acts of 2015. Tennessee Code Annotated, Title 68, Chapter 211, Part 3.

[72] Email correspondence with Amanda McGraw, Tennessee Department of Revenue; August 5, 2019.

[73] Email correspondence with Chad Kimes, TDEC Office of Policy and Sustainable Practices, September 19, 2019.

received the most, about $590,000, while 18 counties where fewer new tires are sold received less than $5,000 each. In 2017—the most current year with complete data—counties reported collecting and disposing of nearly 59,000 tons of tires—perhaps as many as 5.9 million tires in all. See appendix D.

Counties and tire businesses bear the high cost of processing waste tires for beneficial end-use.

County governments don't have the equipment or business capabilities to recycle their tires and market the resulting products and materials to customers on their own. What was originally handled at the state level is now left to each county to contract. Liberty Tire Recycling, headquartered in Pittsburgh, PA, provides these services to 85 of the state's 95 counties.[74] Liberty claims to process a third of the nation's scrap tires with its 26 facilities.[75] It has one location in Nashville, but most of Tennessee's tires are trucked to nearby facilities in Kentucky, Mississippi, and Georgia. At a reported average cost of $90-per-ton, most of the money counties receive from tire fees is spent on disposal costs, leaving little for county operating costs—including cleanup of any illegal dumps. Some counties seem to dispose of more tires than they sell, and others sell more new tires than they dispose of; rural counties may need to dispose of more large, heavy truck and farm tires—all of which could place financial stress on some counties trying to manage their waste tires. Several county officials told TACIR staff that their tire collection programs operate at a substantial loss.[76]

Counties can charge additional fees to cover the cost of collecting and processing tires for beneficial end-use, and those fees vary. However, high fees charged to tire businesses for disposal penalize those who handle their waste tires appropriately, creating a financial incentive for some to dump their tires illegally. Some counties give credit or reduced disposal fees to tire businesses that have collected new-tire pre-disposal fees. While this encourages responsible dealers to dispose of waste tires properly, used tire dealers and other automotive businesses that don't sell new tires are faced with higher costs and are more likely to cut corners by dumping. Used tire dealers acquire tires from other tire dealers, collecting and inspecting their unwanted tires to find those with enough tread and in good enough condition for drivers to use safely. Stakeholders interviewed repeatedly told staff that used tire shops and the unregulated hauling contractors that supply them are likely responsible for many illegal tire dumps, discarding worn-out tires

[74] Testimony by Dewey Grantham, Liberty Tire Recycling, at TACIR's September 2019 meeting.

[75] Liberty Tire. "About Us."

[76] Email correspondence with Randy Porter, Putnam County Mayor, November 21, 2019; Geoff Trabalka, Anderson County Solid Waste Supervisor, October 4, 2019; Ronald Watkins, Franklin County Solid Waste Director, September 24, 2019.

rather than paying the cost of proper disposal. A study done by the Connecticut Department of Energy and Environmental Protection put it simply: "It is clear that the primary reason individuals or businesses engage in illegal dumping is to avoid tipping fees."[77]

Counties in Tennessee can only use tire fee revenue for limited purposes that don't include preventing illegal dumping.

Tennessee law says that the money counties receive from tire fees may only be used "for beneficial end use of waste tires in accordance with § 68-211-867 and not used for any other purposes."[78] County officials believe this language prevents them from spending tire fee revenue on activities that could prevent illegal dumping, like surveillance and business inspections.[79] Memphis and Shelby County have held tire buyback events but ran out of money after an overwhelming response from residents.[80] These types of events have been useful in cities around the country, but tire fee revenue might not be available under current law.

Tennessee's Solid Waste Management Fund supports many programs.

The Solid Waste Management Fund created by the Solid Waste Management Act of 1991 funds the personnel and operating costs of the Materials Management Section within the Division of Solid Waste, which administers several programs—including the state's Waste Tire program. Besides the tire program, Materials Management's "Problem Waste" section includes used oil, batteries, antifreeze, electronics, and household hazardous wastes.[81] The Waste Management Act requires the department to use SWMF funds for several programs designed to help local governments meet the state's waste reduction, diversion, and recycling goals. The department:

- Shall award annual plan maintenance grants to development districts, and planning assistance grants to each county or solid waste region, to help develop, revise and maintain required regional solid waste plans;[82]

[77] Connecticut 2016.

[78] Tennessee Code Annotated, Section 67-4-1610(b)(1)(A).

[79] Mike Stooksberry, CTAS Consultant, in testimony at TACIR's September 2019 meeting, and email correspondence October 3, 2019.

[80] Interview with Torian Harris, City of Memphis, June 4, 2019.

[81] TDEC. "Materials Management."

[82] Tennessee Code Annotated, Section 68-211-823.

- Shall offer matching grant assistance to counties for the purpose of establishing or upgrading required convenience centers;[83]
- Shall establish a matching grant program for the purchase of equipment needed to establish or upgrade recycling at a public or not-for-profit recycling collection site;[84]
- Shall grant a rebate—in lieu of recycling equipment grants—for the five most populous counties, against the amount due to the state under the state surcharge on municipal solid waste tipping fees;[85]
- Shall establish an office of cooperative marketing for recyclables;[86]
- Shall award competitive grants to the state's largest municipalities for permanent sites for the collection of household hazardous waste;[87] and
- Shall provide mobile units for household hazardous waste collection in all other counties.[88]

For example, the following press releases describe grants awarded by TDEC for required programs:

- In 2016, a total of $4 million in grant money was awarded for recycling equipment, including grants specific to waste reduction and composting equipment.[89] $461,000 was awarded to the nine development districts for planning assistance.[90]
- In 2017, approximately $650,000 was awarded for recycling equipment, and $500,000 in recycling rebates was given in lieu of grants.[91] Another $3.7 million was awarded to 13 entities for equipment needed to reduce organic waste.[92]

[83] Tennessee Code Annotated, Section 68-211-824.

[84] Tennessee Code Annotated, Section 68-211-825(a).

[85] Tennessee Code Annotated, Section 68-211-825(b).

[86] Tennessee Code Annotated, Section 68-211-826.

[87] Tennessee Code Annotated, Section 68-211-828.

[88] Tennessee Code Annotated, Section 68-211-829.

[89] TDEC 2016.

[90] TDEC 2016b.

[91] TDEC 2017b.

[92] TDEC 2017c.

- In 2018, approximately $5 million in grants were awarded for recycling equipment, rebates, and convenience centers.[93]
- In 2019, $1.9 million in grants was awarded for waste reduction equipment.[94]

Once budgets have been set for these required programs, it is only from any remaining available funds that TDEC may award grants in other areas—which can include helping local governments clean up unpermitted waste tire disposal sites and assisting counties in locating, collecting and appropriately disposing of waste tires.[95] See appendix D for how money for these programs has been allocated in recent years.

Revenue comes to the Solid Waste Management Fund from two main sources.

The $0.25-per-tire that TDEC receives from pre-disposal fees added up to approximately $1.4 million in each of the last three fiscal years. However, this is only about 18% of the total annual revenue for the Solid Waste Management Fund. The $0.90 tipping fee surcharge on each ton of municipal solid waste received by Class I landfills and incinerators, authorized under Section 68-211-835(d) of Tennessee Code Annotated, generates approximately $6.5 million a year. See table 2.

Table 2. Sources of Revenue for the Solid Waste Management Fund, FY 2017-2019

	Fiscal Year		
	2016-17	2017-18	2018-19
Revenue from Tire Pre-disposal Fees ($0.25 per new tire sold)	$1,371,649	$1,528,557	$1,390,931
Revenue from Municipal Solid Waste Surcharge ($0.90 per ton)	$6,257,736	$6,474,468	$6,731,513
Combined Revenue into SWMF:	**$7,629,385**	**$8,003,025**	**$8,122,444**

TDEC has not awarded waste tire cleanup grants in recent years, and eligibility is limited.

As authorized by Tennessee Code Annotated Section 68-211-831, TDEC may use SWMF money to "provide for the investigation and clean-up of unpermitted waste tire disposal sites and other unpermitted solid waste disposal sites." This is the state's "Waste Tire

[93] TDEC 2018. Note: The press release includes an additional $1 million awarded in Used Oil grants, which are not funded from the Solid Waste Management Fund.

[94] TDEC 2019b.

[95] Tennessee Code Annotated, Sections 68-211-822, 830-833, 847, and 867.

Cleanup Grant" program. Despite the department earmarking $1 million for tire cleanup grants in FY 2019, program staff say no counties applied for assistance, and the only county to receive a grant in recent years was Putnam County, which was awarded $10,000 in FY 2017-18. The county actually received less than $6,000 before the grant was closed.[96]

Eligibility for tire cleanup grants reflects the 2014 change to the distribution of pre-disposal fees. Tire grant documentation states: "Effective July 1, 2014, with an update to the Act, county governments became responsible for all newly identified unpermitted waste tire sites unless the site was clearly created prior to this date." The department lists 21 such "legacy" sites in 16 counties that are eligible for this grant program, to which funding priority would be given. For registered legacy waste tire sites, there are no required matching funds. TACIR staff reached out to TDEC staff to determine the current condition of these legacy sites but was unable to get an answer. Other illegal dumpsites identified after July 2014 can be considered if TDEC determines the site "may cause harm to health, the environment, or the public," and "that the site is too large for the county's or city's resources." The grant application sets a minimum of 1,000 tires to be considered eligible. All grant funding is given as a reimbursement for spent costs, so counties are required to pay in full for cleanup efforts at the time; non-legacy sites require a 50% local match, so the local government will only be reimbursed for half of what it spends.[97]

The amount of tire fee revenue dedicated to tire management and cleanup varies among states.

How other states distribute their tire fee revenue varies considerably. Some, like Tennessee, distribute funds to local governments to manage their tire programs, while others do more at the state level. Arizona, interestingly, sends 96.5% of its tire fee money back to counties but does so "in proportion to the number of motor vehicles registered in the county" rather than by tire sales like Tennessee.[98] In Ohio, the state's $1.00-per-tire fees bring in $3.6 million a year; half goes into the Scrap Tire Management Fund, providing $1.5 million per year for grants, while the other half goes to the Soil and Water Conservation District Assistance Fund.[99] Individuals or agencies can apply for a cleanup if they meet certain financial requirements for sites with as few as 100 tires. Among the $4 million Ohio EPA awarded in 2019 were grants for security cameras to monitor illegal dump sites and several local tire amnesty events.[100] A Mississippi Department of

[96] Email correspondence with Lisa Hughey and Cavene McHayle, TDEC Division of Solid Waste Management, November 20, 2019.

[97] TDEC. "Waste Tire Cleanup Grant."

[98] Arizona Revised Statutes, Section 44-1305.

[99] Byer 2016 and Ohio EPA 2016.

[100] Ohio EPA 2019.

Environmental Quality grant allowed Hancock County to purchase surveillance cameras—costing $2,000 each—to monitor dump sites.[101] California approved two state-funded, $375,000 pilot projects for Alameda and Contra Costa counties in 2019. Contra Costa was able to "authorize hiring four dedicated per-diem officers to enforce no dumping laws with the help of 10 streetlights, surveillance cameras, 50 street signs, collaboration with two truck companies, and a public outreach campaign."[102]

Other Tennessee agencies dedicate resources to clean up illegal dumpsites.

Each year, the Tennessee Wildlife Resources Agency (TWRA) uses federal aid to offer 20 Aquatic Stream Clean Up grants of up to $1,000, "designed to assist cities, schools, community organizations, civic groups, watershed organizations, and conservation groups, with stream clean-up projects."[103] With thousands of acres of state land to patrol, TWRA officers encounter illegal dumping regularly. In Roane County, TWRA closed access roads to the Mt. Roosevelt Wildlife Management area in 2016 and 2018 in response to rampant illegal dumping. In 2018, the agency spent more than $120,000 removing 10 tons of waste that included tires, gas tanks, building materials and household waste. Officers maintain surveillance of the area and investigate leads.[104]

The Tennessee Department of Transportation (TDOT) spends approximately $15 million annually on litter prevention and pickup. Tax revenue from soft drink and beverage containers provides funding for the programs. Litter grants are available to all 95 counties, determined by a formula based on population and road miles. In FY 2018, the state distributed $5.5 million to counties, used to remove roughly 23 million pounds of litter from Tennessee roadways, and clean up 4,332 illegal roadside dumps in FY 2018. Funding from TDOT for the Keep Tennessee Beautiful program helped counties hold National Planting Day events, where 96 tires were reused to make planted flower beds. Litter grant contracts require that 15-30% of the total funding go towards litter prevention education, which could be used to include information about tire dumping.[105]

In 2017, a $200,000 TDOT Special Litter Grant was given to TDEC to collect 36,000 tires illegally dumped in T. O. Fuller State Park (Shelby County) and have them recycled into a multi-use path. Another $123,000 went to Lawrence County to hire a litter enforcement

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[101] Lacy 2019.

[102] Guzzetti 2019.

[103] TWRA 2018. And email correspondence with Della Sawyers and Dave McKinney, TWRA, December 3, 2019.

[104] WBIR 2018.

[105] TDOT 2019.

officer to investigate littering and monitor and clean-up illegal dumpsites. The town of Tellico Plains used $65,000 to hire two litter enforcement officers.[106]

Tennessee doesn't regulate waste tire haulers.

The USTMA says 36 states require tire haulers to have permits, and 17 require haulers to provide financial assurance as a condition of approval. In these states, registered tire businesses are required to use permitted tire haulers and document each load with a standard manifest. In Tennessee, TDEC certifies used oil transporters but has no regulations pertaining to waste tire hauling. Some counties in Tennessee require manifests in order to document tires that come from dealers who collect pre-disposal fees, but there is no standardization among counties and no requirement to be a tire hauler. Local governments have the authority to establish and enforce their own permit requirements, but even those that do are unable to enforce them. Memphis and Shelby County ordinances require $250 tire hauler permits, but department staff say they never receive applications. Nashville requires haulers to display a business name and phone number on their vehicle but doesn't keep a registry of haulers or require permits.

TDEC requires financial assurance from many types of businesses, including solid and hazardous waste storage facilities, oil and gas wells, and processors of radioactive materials, to ensure there are funds available when cleanups are required. One type of financial assurance commonly used in other states is a surety bond, "a contract between a surety (e.g., an insurer) and the site's owner/operator (called the "principal"), in which the surety agrees to be financially responsible for any necessary clean up on the site if the principal defaults on its obligations."

There are penalties for tire dumping in Tennessee.

Penalties—civil and criminal—for illegal dumping are substantial, but difficulties with enforcement and prosecution make convictions rare. The offense of aggravated criminal littering—a Class A misdemeanor punishable by up to a year in jail and a $2,500 fine—only requires 10 pounds of litter or less than a single tire. Offenders can be sentenced to serve 160 hours on a litter crew. For violations over 100 pounds (four or five tires), the fine can be up to $4,000. Repeat offenses are felonies with a one-year minimum prison sentence.[107] A person who reports information to a law enforcement officer that leads to

[106] Ibid.

[107] Tennessee Code Annotated, Section 39-14-505.

a criminal littering or aggravated criminal littering conviction can receive a $250 reward.[108]

A violation of the Tennessee Solid Waste Disposal Act is Class B misdemeanor, punishable by fines of up to $500 per day, plus civil penalties up to $5,000 per day.[109] TDEC staff do a good job keeping up with complaints they receive, conducting investigations expediently. The difficulty lies in the time it takes to prove who is responsible for an illegal dumpsite and to prove the person doesn't intend to simply store the tires and other materials for future use. In January 2019, TDEC fined the owner of the former Raytheon building in Bristol $492,048 for hundreds of thousands of tires that are stored on the site without a permit.

Tennessee has hotlines and rewards for reporting dumping.

Tennessee has two separate hotlines for concerned citizens to report illegal dumping. TDEC's website says, "If you see a solid waste dump, please contact your local environmental Field Office or your local public works or codes department if you live within an urban area." The number is 1-888-891-TDEC (8332), and an email address is available at Solid.Waste@tn.gov. Litter and dumping along Tennessee roadways is addressed under the TN Litter Law and should be reported to local authorities or the Tennessee Highway Patrol. Individuals can call 1-877-8-LITTER. (877-854-8837), where a recording asks for the Tennessee license number of the offender's vehicle, the type and make of the vehicle, the time it happened and where, and what was tossed or blown from the vehicle.

One successful program in St. Louis, Missouri, has led to 36 convictions for illegal dumping. The city offers a $100 reward for information leading to an arrest and conviction, and according to the city, fines for illegal dumping are on track to triple this year compared to 2018.

Scrap tires have little value as a commodity.

Overall, a typical scrap tire contains only about 70% recoverable rubber by weight. Another 15% is steel from reinforcing and the rest fiber and fillers. The USTMA reports that 43% of scrap tire material ends up as fuel, burned to power industrial processes like cement kilns, paper mills, and electric utility boilers. Tennessee has two cement plants, one in Chattanooga and the other in Knoxville. Tire-derived fuel (TDF) is cheap to produce, but also offers little value in return for recyclers as a result of a steady supply.

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[108] Tennessee Code Annotated, Section 39-14-510.

[109] Tennessee Code Annotated, Section 68-211-117.

About a quarter of scrap tires are ground into crumb rubber, used for playgrounds and athletic fields but also recycled into molded and extruded rubber products. Twelve percent of ground rubber is used in asphalt. These products cost more to produce, but the relatively low demand from customers compared to TDF makes doing to a risky venture.

References

Alliance of Automobile Manufacturers. 2019. "State Facts: Autos Drive Tennessee Forward." https://autoalliance.org/in-your-state/TN.

Badila, Cornelia Andreea. 2013. *Scrap Tire Weight and Characteristics Study Passenger Light Truck (PLT).* Prepared for Tire Stewardship Manitoba (Canada). http://www.tirestewardshipmb.ca/wp-content/uploads/Scrap-Tire-Weight-and-Characteristics-Study-October-2013-1.pdf

Byer, Kelly. 2016. "Illegal tire dumping: A public health issue." *CantonRep.com*, March 6. https://www.cantonrep.com/article/20160306/NEWS/160309501.

Cary Institute of Ecosystem Studies. 2019. "Lyme Disease Research." https://www.caryinstitute.org/science/research-projects/lyme-disease-research.

Centers for Disease Control and Prevention. 2010. "Clean Up!" US Department of Health and Human Services. https://www.cdc.gov/rodents/prevent_infestations/clean_up.html.

Connecticut Department of Energy and Environmental Protection. 2016. *Long Term Management Options for Scrap Tires Generated in Connecticut.* https://www.ct.gov/deep/Lib/deep/reduce_reuse_recycle/product_stewardship/Long_Term_Management_Options_for_Scrap_Tires_Generated_in_Connecticut_FINAL_2-17-16.pdf.

Glowicki, Matthew. 2014. "Liberty Tire hit with lawsuit." *The Courier-Journal,* November 8. https://www.courier-journal.com/story/news/crime/2014/11/07/negligence-lawsuit-filed-liberty-tire/18672485/.

Guzzetti, Dana. 2019. "County cracking down on illegal dumping." *Martinez News-Gazette*, September 18. https://martinezgazette.com/county-cracking-down-on-illegal-dumping/.

Halm, Laura. 2018. "Road near Knox County's 'worst illegal dump site' to reopen." *WATE.com,* September 26. https://www.wate.com/news/local-news/road-near-knox-countys-worst-illegal-dump-site-to-reopen/.

Hickling, G.J., J.R. Kelly, L.D. Auckland, and S.A. Hamer. 2018. "Increasing Prevalence of Borrelia burgdorferi sensu stricto–Infected Blacklegged Ticks in Tennessee Valley, Tennessee, USA." *Emerging Infectious Diseases*, 24(9), 1713-1716. https://dx.doi.org/10.3201/eid2409.180343.

Lacy, Mike. 2019. "Hancock County using surveillance cameras to crack down on illegal tire dumping." *WLOX.com*, July 19. https://www.wlox.com/2019/07/17/hancock-county-using-surveillance-cameras-crack-down-illegal-tire-dumping/.

Liberty Tire Recycling. 2018. "About Us." https://libertytire.com/about-us/.

Maron, Dina Fine. 2013. "Dengue Fever Makes Inroads into the U.S." *Scientific American*, November 15. https://www.scientificamerican.com/article/dengue-fever-makes-inroad/.

Miller, Chris. 2019. "Tick-related illnesses on the rise in Tennessee." *WSMV.com*, June 12. https://www.wsmv.com/news/tick-related-illnesses-on-the-rise-in-tennessee/article_80dca9b4-8c68-11e9-b426-fb83a87211d8.html.

National Association of County and City Health Officials (NACCHO). 2017. "Mosquito Control Capabilities in the U.S." October. https://www.naccho.org/uploads/downloadable-resources/Mosquito-control-in-the-U.S.-Report.pdf

Ohio Environmental Protection Agency. 2016. "Ohio's Scrap Tire Cleanup Program." https://epa.ohio.gov/portals/34/document/guidance/gd_651.pdf.

———. 2019. "Ohio EPA Awards $4 Million for 2019 Recycling and Litter Prevention Grants." Press release, May 21. https://www.epa.state.oh.us/News/Online-News-Room/News-Releases/ohio-epa-awards-4-million-for-2019-recycling-and-litter-prevention-grants.

Peterson, Erica. 2015. "Liberty Tire Abandons Site of Massive November Fire in Louisville." *WFPL.org*, August 11. https://wfpl.org/liberty-tire-abandons-site-massive-november-fire-louisville/.

Prince, Chelsea. 2018. "Massive fire at tire dumping ground could have been set, officials say." *The Atlanta Journal-Constitution*, August 7. https://www.ajc.com/news/breaking-news/breaking-tires-catch-fire-massive-blaze-spreads-atlanta-apartment-building/FkevYEkJ23RZ8aEHTWBA7M/#

Renfro, Kelsey. 2019. "Why Are Mosquitoes Crossing State Lines?" Vector Disease Control International, January 9. http://www.vdci.net/blog/why-are-mosquitoes-crossing-state-lines.

Rubio, Alejandra, María Victoria Cardo, and Darío Vezzani. 2011. "Tire-breeding mosquitoes of public health importance along an urbanisation gradient in Buenos Aires, Argentina." *Memórias do Instituto Oswaldo Cruz.* vol. 106. No.6 pp. 678-84. http://dx.doi.org/10.1590/S0074-02762011000600006.

Schlanger, Zoë. 2017. "A week-long toxic tire fire overwhelmed firefighters in Texas, so they called in the EPA to help put it out." *Quartz,* April 18. https://qz.com/961991/.

Summers, Blake. 2019. "Crews clear out more than a ton of litter from the Cumberland River." *WSMV.com*, November 17. https://www.wsmv.com/news/crews-clear-out-more-than-a-ton-of-litter-from/article_0a98d55c-0981-11ea-bfe1-e3cc01eeddd5.html.

Tennessee Department of Environment and Conservation. 2007. "Bredesen Announces Waste Tire Cleanup Grant for Greene County." Press release, September 18. https://www.tn.gov/news/2007/9/18/bredesen-announces-waste-tire-cleanup-grant-for-greene-county.html.

———. 2007b. "Bredesen Announces Waste Tire Cleanup Grant for Marion County." Press release, September 30. https://www.tn.gov/news/2007/9/30/bredesen-announces-waste-tire-cleanup-grant-for-marion-county.html.

———. 2008. "Waste Tire Cleanup Grant Awarded to Smith County." Press release, March 4. https://www.tn.gov/news/2008/3/4/waste-tire-cleanup-grant-awarded-to-smith-county.html.

———. 2008b. "Bredesen Announces Tire Cleanup Grant for Fayette County." Press release, September 3. https://www.tn.gov/news/2008/9/3/bredesen-announces-tire-cleanup-grant-for-fayette-county.html.

———. 2009. "Bredesen Announces Waste Tire Cleanup Grant for Hickman County." Press release, September 16. https://www.tn.gov/news/2009/9/16/bredesen-announces-waste-tire-cleanup-grant-for-hickman-county.html.

———. 2015. *2015 - 2025 Solid Waste and Materials Management Plan.* https://www.tn.gov/environment/program-areas/solid-waste/2015-2025-solid-waste-management-plan.html.

———. 2016. "TDEC Announces Recycling Equipment, Waste Reduction, Used Oil, Composting Grants." Press release, January 25. https://www.tn.gov/environment/news/2016/1/25/tdec-announces-recycling-equipment-waste-reduction-used-oil-composting-gran.html.

———. 2016b. "TDEC Awards Grants to Tennessee Development Districts." Press release, July 15. https://www.tn.gov/environment/news/2016/7/15/tdec-awards-grants-to-tennessee-development-districts.html.

———. 2017. *Tennessee's Tires Then to Now.* Presentation by the Office of Sustainable Practices. https://www.colorado.gov/pacific/sites/default/files/HM_SW3_Presentation-5-Lori-Munkeboe-TN-Office-of-Sust.-Practices.pdf

———. 2017b. "TDEC Announces $2 Million in Grants to Help Reduce Landfill Waste." Press release, February 1. https://www.tn.gov/environment/news/2017/2/1/news-tdec-announces-2-million-in-grants-to-help-reduce-landfill-waste.html.

———. 2017c. "TDEC Awards Nearly $4 Million To Combat Food Waste." Press release, December 12. https://www.tn.gov/environment/news/2017/12/12/tdec-awards-nearly-4-million-to-combat-food-waste.html.

———. 2018. "TDEC Announces Over $6 Million in Grants to Promote Recycling." Press release, February 21. https://www.tn.gov/environment/news/2018/2/21/tdec-announces-over--6-million-in-grants-to-promote-recycling-.html.

———. 2019. *Division of Solid Waste Management Annual Report to the Governor and General Assembly, 2017-2018.* https://www.tn.gov/content/dam/tn/environment/solid-waste/documents/-sw-mm_annual_report_governor_general_assembly_18-19.pdf.

———. 2019b. "TDEC Announces $1.9 Million in Grants To Help Reduce Landfill Waste." Press release, February 21. https://www.tn.gov/environment/news/2019/2/21/tdec-announces--1-9-million-in-grants-to-help-reduce-landfill-waste.html.

———. n.d. "Waste Tire Task Force." https://www.tn.gov/environment/program-areas/sw-mm-waste-tire-program/sw-mm-waste-tire-task-force.html.

———. n.d. "TDEC at 25." https://www.tn.gov/environment/about-tdec/tdec-at-25.html.

Tennessee Wildlife Resources Agency. 2018. "TWRA Announces Awarding of Aquatic Stream Clean-Up Grants for 2019." Press release, September 29. https://www.tn.gov/twra/news/2018/9/29/twra-aquatic-clean-up-grants-2019.html.

US Fire Administration. 1998. *Special Report: Scrap and Shredded Tire Fires.* Report 093 of the Major Fires Investigation Project, December 1998. https://www.usfa.fema.gov/downloads/pdf/publications/tr-093.pdf.

———. 2002. *Tire Recycling Facility Fire, Nebraska City, Nebraska.* Report 145 of the Major Fires Investigation Project, February 2002. https://www.usfa.fema.gov/downloads/pdf/publications/tr-145.pdf.

US Tire Manufacturers Association. 2018. *2017 U.S. Scrap Tire Management Summary.* July 18. https://www.ustires.org/sites/default/files/USTMA_scraptire_summ_2017_07_11_2018.pdf

———. 2018b. "State Scrap Tire Legislation Summary." https://www.ustires.org/system/files/State_Scrap_tire_programs_Oct2018.pdf.

Vector Disease Control International. 2018. "Public Health: U.S. Mosquito-Borne Diseases [Quick Overview]." August 14. http://www.vdci.net/blog/public-health-us-mosquito-borne-diseases-quick-overview.

Whetstone, Tyler. 2017. "State law restricts Knox County's litter pickup." *Knoxville News Sentinel,* December 27. https://www.knoxnews.com/story/news/local/2017/12/15/tennessee-law-restricts-knox-county-litter-pickup/936517001/.

———. 2018. "Trashed: To keep road open, church to pay for $42K fence, county to clean up illegal dump." *Knoxville News Sentinel,* September 26. https://www.knoxnews.com/story/news/local/2018/09/26/church-pay-42-k-fence-knox-county-clean-up-illegal-dump/1347628002/.

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Appendix A: Senate Joint Resolution 344

<BillNo> <Sponsor>

SENATE JOINT RESOLUTION 344

By Dickerson

A RESOLUTION to direct the Tennessee Advisory Commission on Intergovernmental Relations (TACIR) to study the overall effects of illegal waste tire dumps in Tennessee.

BE IT RESOLVED BY THE SENATE OF THE ONE HUNDRED ELEVENTH GENERAL ASSEMBLY OF THE STATE OF TENNESSEE, THE HOUSE OF REPRESENTATIVES CONCURRING, that the Tennessee Advisory Commission on Intergovernmental Relations (TACIR) is directed to perform a study of the overall effects of illegal waste tire dumps within the boundaries of the State of Tennessee in an effort to better understand the adverse impacts of tire dumps on the environment, review current waste tire recycling methods, and assess potential preventative measures to curb the practice of illegal tire dumping.

BE IT FURTHER RESOLVED, that the study shall focus on the following topics:

(1) Health risks of waste tire dumps to the general public, including diseases carried by mosquitoes, rodents, and other pests that live within or potentially flock to illegal waste tire dumps;

(2) Effects of burning or igniting fires at waste tire dumps, including the length and duration of tire fires, effects of residue left behind by tire fires, and health effects of air pollution from tire fires;

(3) Modern recycling methods for waste tires, including shredding, pyrolysis, and other recycling methods;

(4) Recyclable alternatives to dumping tires or placing tires in landfills, including building materials for roads and highways; construction material for Tennessee State Park trails; mulching alternatives for schools and playgrounds; barriers for reefs, riversides, sandbars, and other applicable waterway facets; and fuel sources for manufacturing companies;

(5) Waste tire dumping prevention strategies, including extra policing efforts and heavier fines and penalties; and

(6) Incentive initiatives for tire recycling practices, including buyback programs through state and local resources and tire redemption programs.

BE IT FURTHER RESOLVED, that upon completion of the study, TACIR shall report all facts and findings to the chairs of the Senate Energy, Agriculture, and Natural Resources Committee, the Senate State and Local Committee, the Senate Health Committee, the Senate Transportation Committee, the House Agriculture and Natural Resources Committee, the House State Government Committee, the House Health and Welfare Committee, and the House Transportation Committee.

BE IT FURTHER RESOLVED, that a certified copy of this resolution be prepared and transmitted to the executive director of the Tennessee Advisory Commission on Intergovernmental Relations.

Appendix B: Formal Request for TACIR Study, May 5, 2019

STEVEN DICKERSON
STATE SENATOR
20th SENATORIAL DISTRICT

REPRESENTING PARTS OF
DAVIDSON COUNTY

EMAIL
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Senate Chamber
STATE OF TENNESSEE

NASHVILLE

LEGISLATIVE OFFICE
774 CORDELL HULL BLDG.
NASHVILLE, TENNESSEE 37243
615-741-6679

CHAIRMAN:
Senate State and Local Government

COMMITTEE MEMBERSHIP:
Senate Education Committee

May 5, 2019

Mayor Larry Waters
Acting Chairman
Tennessee Advisory Commission on Intergovernmental Relations
226 Anne Dallas Dudley Boulevard, Suite 508, Nashville, Tennessee 37243

Mr. Cliff Lippard
Executive Director
Tennessee Advisory Commission on Intergovernmental Relations
226 Anne Dallas Dudley Boulevard, Suite 508, Nashville, Tennessee 37243

Executive Director Lippard and Mayor Waters,

I write to you today to formally request that the Tennessee Advisory Commission on Intergovernmental Relations to perform a study over the contents SJR0344, regarding the effects of illegal waste tire dumps in Tennessee. This issue is of particular concern to me, and other members, because illegal waste tire dumps cause great harm to the health of the citizens Tennessee, the environmental resources of Tennessee, and the natural beauty of Tennessee.

The SJR is laid out in six sections, all of which we hope that TACIR will study and find the core issues to which the legislature can then fix through regulatory and legislative actions:

1. The Health Risks of Illegal Waste Tire Dumps
2. Dangers of the Igniting and Burning of Illegal Waste Tire Dumps
3. Current Recycling Methods for Waste Tires
4. New Recycling Alternatives for Waste Tires
5. New Preventative Strategies for the Practice of Illegal Waste Tire Dumping
6. Incentives for Recycling through State and Local Programs

Chairman Southerland of the Senate Energy, Agriculture, and Natural Resources Committee has expressed interest in a study of this caliber, and we believe that a study by the Tennessee Advisory Commission on Intergovernmental Relations as well as recommendations for legislative solutions before the next legislative session it will be incredibly helpful in solving this issue.

Warmest Regards,

Steven Dickerson

Steven Dickerson
State Senate – District 20

Appendix C: Vector-borne Diseases in Tennessee (2004–2016)

Year	Mosquito-borne disease cases	Tickborne disease cases
2004	39	149
2005	35	177
2006	35	315
2007	46	226
2008	40	344
2009	30	321
2010	28	425
2011	54	383
2012	60	811
2013	76	674
2014	95	678
2015	49	717
2016	112	730
Totals	699	5,950

Source: Centers for Disease Control and Prevention, Tennessee vector-borne diseases profile. https://www.cdc.gov/ncezid/dvbd/vital-signs/tennessee.html.

Appendix D: County Tire Data

	Tires Reported Sent for Beneficial End Use (Tons)	
COUNTY	**2017**	**2018**
Anderson	956.23	899.91
Bedford	413.49	402.57
Benton	189.77	157.72
Bledsoe	189.03	195.00
Blount	938.03	770.93
Bradley	816.39	855.00
Campbell	139.80	98.48
Cannon	114.10	102.60
Carroll	5.33	2.24
Carter	36.76	37.76
Cheatham	52.63	25.48
Chester	125.00	138.00
Claiborne	207.43	243.43
Clay	26.72	31.00
Cocke	283.28	317.34
Coffee	652.34	888.24
Crockett	2.03	3.97
Cumberland	939.02	946.09
Davidson	7,100.58	7,056.40
Decatur	87.00	121.65
Dekalb	158.10	101.62
Dickson	1,441.20	1,107.89
Dyer	550.03	451.71
Fayette	256.11	161.00
Fentress	385.83	361.64
Franklin	451.57	367.05
Gibson	424.11	405.54
Giles	124.14	120.44
Grainger	147.74	132.20
Greene	415.56	390.29
Grundy	108.10	115.00
Hamblen	907.00	916.73
Hamilton	4,206.49	4,115.16
Hancock	58.62	9.53
Hardeman	155.86	81.05
Hardin	145.00	154.00
Hawkins	391.95	358.38
Haywood	400.00	400.00
Henderson	75.00	92.00
Henry	21.81	19.58
Hickman	198.95	247.53
Houston	156.59	180.03
Humphreys	153.00	177.43
Jackson	99.37	104.75

	Tires Reported Sent for Beneficial End Use (Tons)	
COUNTY	**2017**	**2018**
Jefferson	293.02	307.27
Johnson	121.76	139.66
Knox	4,065.02	No Data
Lake	23.00	100.00
Lauderdale	60.73	No Data
Lawrence	686.04	625.11
Lewis	225.27	280.12
Lincoln	414.37	416.54
Loudon	455.69	484.50
McMinn	No Data	516.70
McNairy	36.00	49.20
Macon	265.86	255.36
Madison	698.46	17.92
Marion	196.72	210.00
Marshall	270.32	273.80
Maury	567.53	477.61
Meigs	No Data	31.00
Monroe	473.20	336.02
Montgomery	1,003.41	796.02
Moore	37.01	60.09
Morgan	121.16	117.92
Obion	387.00	391.56
Overton	314.96	382.94
Perry	150.00	200.00
Pickett	54.59	73.23
Polk	No Data	112.00
Putnam	1,193.96	689.25
Rhea	No Data	67.50
Roane	345.81	394.90
Robertson	824.57	606.27
Rutherford	3,941.12	4,287.48
Scott	70.69	81.82
Sequatchie	0.00	254.93
Sevier	748.12	763.85
Shelby	6,157.40	6,480.00
Smith	193.90	171.25
Stewart	111.49	167.86
Sullivan	776.61	No Data
Sumner	2,332.09	2,443.18
Tipton	497.00	664.32
Trousdale	97.12	87.95
Unicoi	192.97	195.30
Union	150.00	147.00
Van Buren	0.00	8.72

	Tires Reported Sent for Beneficial End Use (Tons)	
COUNTY	**2017**	**2018**
Warren	345.62	340.25
Washington	1,408.48	385.77
Wayne	229.88	310.62
Weakley	43.51	22.69
White	346.25	435.92
Williamson	2,622.01	3,202.92
Wilson	663.00	525.00
Total Tonnage	**58,919.81**	**53,253.68**
Estimated Number of Tires	**4,909,984**	**4,437,807**
Range 20-24 lbs per tire	**5,891,981**	**5,325,368**

Appendix E: Tire Pre-disposal Fees Collect and Distributed

	Tire Pre-Disposal Fees Collected by Dealers on New Tire Sales			TDEC Solid Waste Management Fund from Tire Fees		
County	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2017**	**FY 2018**	**FY 2019**
Anderson	$ 63,519	$ 61,509	$ 74,492	$ 53,105	$ 51,063	$ 63,101
Bedford	34,260	32,592	37,585	28,796	26,973	32,284
Benton	16,435	12,501	18,229	13,627	10,415	15,480
Bledsoe	3,645	6,514	896	3,063	5,460	702
Blount	149,770	148,696	123,838	125,647	124,038	105,118
Bradley	106,105	94,097	115,075	88,515	78,170	97,163
Campbell	31,776	27,131	29,580	26,465	22,410	24,870
Cannon	2,925	1,499	3,128	2,446	1,881	2,628
Carroll	19,121	19,042	17,090	15,987	15,586	14,784
Carter	26,549	29,323	33,613	22,061	24,232	28,330
Cheatham	13,608	12,574	16,672	11,349	10,480	14,185
Chester	10,789	9,910	9,340	9,002	8,163	7,933
Claiborne	19,644	19,783	17,619	16,559	16,219	14,826
Clay	1,420	3,414	1,754	1,188	3,068	1,493
Cocke	28,439	24,894	30,212	23,848	20,652	25,683
Coffee	58,199	41,978	64,553	48,792	46,663	55,014
Crockett	4,711	3,244	2,677	3,871	2,724	2,278
Cumberland	65,181	64,911	69,493	54,622	54,137	58,968
Davidson	701,789	766,368	687,432	587,660	633,807	584,096
Decatur	8,594	10,668	9,548	7,150	8,791	8,208
Dekalb	11,102	10,977	13,196	9,337	9,113	11,236
Dickson	67,887	59,270	75,247	56,779	49,473	63,815
Dyer	46,405	44,151	47,668	38,920	36,831	40,620
Fayette	19,717	21,208	26,609	16,550	17,526	22,718
Fentress	22,258	25,162	23,809	18,690	20,734	20,457
Franklin	27,447	26,291	29,280	22,993	21,788	24,937
Gibson	48,334	51,078	57,748	40,509	42,470	49,195
Giles	28,370	26,883	34,009	23,804	22,452	28,881
Grainger	6,852	6,685	6,369	5,740	5,531	5,417
Greene	59,090	62,663	62,914	49,381	51,973	53,456
Grundy	3,100	3,211	3,271	2,582	2,625	2,771
Hamblen	82,151	70,006	95,390	68,859	57,466	80,516
Hamilton	306,417	332,546	339,445	256,508	274,579	288,592
Hancock	1,844	2,093	2,555	1,532	1,744	2,175
Hardeman	14,514	9,971	12,384	12,147	9,994	10,489
Hardin	28,219	31,001	40,197	23,673	25,799	34,225
Hawkins	32,269	28,196	42,153	27,094	23,445	35,768
Haywood	22,123	21,976	20,461	18,571	18,258	17,449
Henderson	25,255	26,085	29,785	21,221	21,623	25,461
Henry	36,423	31,573	32,956	30,213	26,174	27,816
Hickman	13,094	12,422	13,056	10,955	10,264	11,125
Houston	4,453	6,146	6,771	3,651	5,071	5,767
Humphreys	11,090	10,204	11,341	9,272	8,416	9,700

	Tire Pre-Disposal Fees Collected by Dealers on New Tire Sales			TDEC Solid Waste Management Fund from Tire Fees		
County	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2017**	**FY 2018**	**FY 2019**
Jackson	4,862	4,792	3,727	4,049	3,964	3,159
Jefferson	22,984	20,722	27,223	19,217	17,264	23,241
Johnson	16,002	13,991	11,317	13,371	11,582	9,704
Knox	530,790	541,031	554,179	444,520	452,702	470,843
Lake	1,405	1,258	1,103	1,156	1,055	936
Lauderdale	12,827	13,730	14,373	10,767	11,513	12,227
Lawrence	45,952	49,979	53,942	38,448	41,536	45,788
Lewis	16,012	10,223	9,085	13,147	8,458	7,778
Lincoln	25,832	26,108	43,299	21,637	21,635	36,159
Loudon	33,782	33,072	35,758	28,302	27,579	30,466
McMinn	49,064	47,461	55,118	41,064	40,467	46,998
McNairy	15,779	16,571	18,023	13,215	13,866	15,343
Macon	26,827	27,287	28,526	22,280	22,521	23,984
Madison	153,309	151,715	160,620	128,653	125,666	136,934
Marion	27,237	28,976	31,869	22,615	24,184	27,202
Marshall	26,646	26,422	28,711	22,361	21,865	24,602
Maury	64,603	67,107	86,298	54,322	55,522	73,418
Meigs	457	660	1,178	384	555	997
Monroe	33,832	38,409	34,563	28,143	31,812	29,568
Montgomery	184,222	187,429	195,729	154,697	155,300	167,368
Moore	1,492	1,471	1,424	1,253	1,212	1,230
Morgan	5,901	5,280	4,723	4,932	4,346	4,051
Obion	44,260	33,768	25,876	37,063	27,990	22,121
Overton	20,657	21,214	20,242	17,343	17,365	17,434
Perry	2,040	1,921	1,925	1,671	1,559	1,614
Pickett	1,799	1,300	1,102	1,457	1,059	924
Polk	6,150	4,598	6,798	5,046	3,781	5,723
Putnam	100,038	94,461	105,262	83,672	78,685	89,725
Rhea	19,299	23,538	20,365	16,174	19,626	17,397
Roane	47,100	49,703	48,969	39,501	41,084	41,839
Robertson	50,025	46,419	60,850	41,701	38,575	50,497
Rutherford	348,319	358,313	382,054	292,329	297,398	325,406
Scott	14,066	13,319	15,901	11,818	11,070	13,461
Sequatchie	7,744	8,614	4,256	6,408	7,136	3,530
Sevier	69,201	66,698	78,900	57,985	55,884	67,032
Shelby	639,495	602,706	696,235	538,567	535,591	590,573
Smith	5,136	4,824	5,300	4,267	4,028	4,509
Stewart	14,440	11,456	8,778	11,994	9,460	7,580
Sullivan	149,600	128,331	153,844	125,469	106,994	130,285
Sumner	166,704	158,072	171,064	139,857	131,154	145,345
Tipton	50,318	48,287	55,042	42,196	40,239	46,495
Trousdale	6,563	7,011	7,365	5,463	5,664	6,402
Unicoi	5,596	5,185	5,170	4,706	4,375	4,398

	Tire Pre-Disposal Fees Collected by Dealers on New Tire Sales			TDEC Solid Waste Management Fund from Tire Fees		
County	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2017**	**FY 2018**	**FY 2019**
Union	6,174	6,170	6,088	5,139	5,169	5,110
Van Buren	207	48	34	174	40	27
Warren	37,088	32,976	39,980	31,158	27,365	34,225
Washington	113,610	108,382	123,057	94,773	88,694	104,679
Wayne	6,428	6,102	4,305	5,399	5,079	3,689
Weakley	21,403	20,853	28,144	17,788	17,235	23,897
White	23,749	22,938	28,509	19,923	19,116	24,282
Williamson	296,572	308,415	327,090	250,016	255,405	278,846
Wilson	163,100	153,291	131,391	136,939	126,836	112,359
Total Collections from In-State Sales	**$ 6,021,593**	**$ 5,973,051**	**$ 6,354,121**			
Additional Revenue from Out-of-State Sales	300,253	289,681	383,187			
Total Pre-Disposal Fees Collected	**$ 6,321,847**	**$ 6,262,731**	**$ 6,737,308**			
Total Distributions to Counties:				**$ 5,047,261**	**$ 5,006,540**	**$ 5,401,127**
Included Amount from Out-of-State Sales:				240,203	231,745	306,550
Amount Paid to TDEC Solid Waste Management Fund:				**$ 1,359,029**	**$ 1,397,880**	**$ 1,477,026**
Included Amount from Out-of-State Sales:				60,051	57,936	76,637