



# SCRAP TIRE SUSTAINABILITY PLAN

S.C. Department of Health & Environmental Control • Division of Mining & Solid Waste Management



MANUFACTURING

BUSINESS  
& CONSUMERS

GOVERNMENT

## INTRODUCTION

**South Carolina** is where the rubber meets the road.

It all began in 1973 when Michelin announced plans to build its first major manufacturing operation in the United States with a tire plant in Greenville County – at the time the largest foreign investment in the state’s history. Some 46 years later, South Carolina leads the nation in both the production and export of tires and has grown into a global industry leader.

**The state’s diverse tire industry now includes Michelin, Bridgestone, Continental, Giti and Trelleborg and represents five countries: France, Japan, Germany, Singapore and Sweden. These companies operate 13 facilities across South Carolina, provide about 12,500 jobs, manufacture 110,000 tires every day, account for one-third of U.S. tire exports and have a \$5.2 billion annual impact on the state’s economy.**

In short, South Carolina’s tire industry is an integral part of the state’s reputation as a world leader in advanced manufacturing and a significant part of South Carolina’s economy.



## END-OF-LIFE MANAGEMENT

The S.C. Solid Waste Policy and Management Act (Act) of 1991 prompted the first efforts to manage scrap tires in the state. The Act:

- Prohibits the disposal of whole tires in landfills;
- Sets a \$2 fee on the purchase of new tires to provide funds for the proper management and recycling of tires;
- Gives regulatory authority to DHEC to oversee waste tire facilities; and
- Requires county governments to manage scrap tires generated in their jurisdiction with programs that include collection and enforcement.



DHEC supports county programs with a combination of technical assistance and grant funding to ensure that generators of scrap tires (i.e., residents, retailers and auto salvage yards) have access to free drop-off options. Grant funding also is provided to pay contractor costs for recycling tires and outreach to residents on the necessity of proper management and recycling of scrap tires.

In 1993 DHEC added a regulation that established collection limits and permitting requirements.

This overall framework has been successful. Since the program began, DHEC has awarded more than \$51 million in grant funding for the proper management of millions of tires in South Carolina through recycling or other beneficial uses. Of that funding, more than \$10 million has been used for the removal of 7 million tires from illegal stockpiles.



## ISSUES REMAIN

South Carolina, however, like virtually all other states, faces recurring issues on the sustainable management of scrap tires. Those issues include

- Increased generation – about 13,000 scrap tires are produced every day in the state;
- Increased management costs;
- Tire fee revenue has not kept pace with increased number of tires generated or costs of proper management;
- Limited markets for recycled tires;
- Open dumping, tire piles and illegal storage continue resulting in risks to human health and the environment;
- Tire processors have not remained viable; and
- DHEC has had difficulty stopping collectors from accepting tires in excess of storage limits.

These problems coalesced into a perfect storm with the closure of the Viva Tire Recycling facility in Berkeley County in September 2017 leaving a pile estimated to be in excess of 1 million tires and cleanup costs of more than \$3 million.

## WHAT HAPPENS TO SCRAP TIRES?

Nationwide, 81 percent of the scrap tires went to beneficial end uses in 2017 with three primary markets. They are:



- **Tire-derived fuel** (TDF) for cement kilns, pulp and paper mills and utilities. Overall, 43 percent of scrap tires recovered nationwide are used for TDF.
- **Ground tire rubber** is used in rubber mollified asphalt, landscaping, playground mulch athletic surfaces, car parts and more. About 25 percent of scrap tires recovered are turned into ground tire rubber.
- **Civil engineering applications** (e.g., road embankments). About 8 percent of the recovered tires are used in these applications.

SOURCE: U.S. Tire Manufacturers Association



## SOUTH CAROLINA SCRAP TIRES BY THE NUMBERS

| INCREASED GENERATION  | INCREASED COSTS   | INCREASED FUNDING  |
|---|---|--|
| <p>The amount of tires county programs must manage has increased each of the past five years and has risen ...</p> <p><b>61 percent since fiscal year (FY) 2015.*</b></p> | <p>The average current generation contractor costs has grown from ...</p> <p><b>\$89 per ton in FY15 to \$145 in FY19</b></p> <p>... a 63 percent increase.</p> | <p>The amount of funding provided to counties and DHEC for tire management has grown from ...</p> <p><b>\$3.9 million in FY15 to \$5.5 million in FY19</b></p> <p>... a 41 percent increase.</p> |

\*July 1, 2014 to June 30, 2015

SOURCE: DHEC's Office of Solid Waste Reduction and Recycling

## A NEW APPROACH

DHEC began a comprehensive internal review of the tire program to determine what improvements could be made to address these issues. Two key steps were taken.

1. In 2015, R.61-107.3 Solid Waste Management: Waste Tires became effective. This revision addressed concerns related to scrap tire hauler registration, manifesting, bonding and financial assurance requirements.
2. In 2017, DHEC began developing recommendations for changes to the Act. These changes were introduced in the S.C. General Assembly as House Bill (HB) 4504, on April 30, 2019 and remains under consideration. HB 4504 outlines a process for the suspension or revocation of a waste tire processing permit for gross violations of the regulation – particularly for exceeding storage limits. The bill also details a process that DHEC may remove a tire processor from the “waste tire facility rebate list.” In addition, the bill clarifies DHEC’s authority to issue penalties for violations of a permit, permit conditions or order.



Pictured (left) is the Viva Tire Recycling Facility in 2017 – before more than 1 million tires were removed – and after cleanup (right) was completed in February 2019.

## S.C. SCRAP TIRE SUSTAINABILITY COALITION

In 2018, at DHEC’s encouragement, the S.C. Scrap Tire Sustainability Coalition was



created. The coalition is a group of stakeholders dedicated to sharing knowledge, coordinating resources and working together to help South Carolina improve the safe and efficient end-of-life management of scrap tires. Stakeholders include:

- Manufacturers and retailers;
- Processors and haulers;
- Local and state government [i.e., S.C. Department of Commerce (Commerce), S.C. Department of Transportation (DOT)]; and
- Environmental organizations and others (see the list of on the back cover).

The mission of the group was to do an overall review of the current scrap tire situation, make recommendations to address issues and turn those recommendations into a plan.



## A NEW BEGINNING

### The S.C. Scrap Tire Sustainability Plan

has been developed by DHEC, in conjunction with a group of concerned stakeholders, to address the issues outlined earlier.

The three-year plan outlines strategies for removing barriers to the proper management of scrap tires and to identify the role each stakeholder plays.

Five strategies have been recommended to be included in the plan.

#### 1. Review the tire fee and overall funding.

Funding is the key component of any successful program. The coalition will continue to review the \$2 tire fee and its use to make recommendations for legislative, regulatory or policy changes that would:

- Ensure funding to properly manage tires in the current economy;
- Identify potential new funding sources;
- Identify options for improved auditing or tracking of tire fee;
- Consider ways to use grant funding to promote tire recycling; and
- Ensure the allocation of funding is in compliance with regulations.

2. **Conduct a market analysis.** South Carolina shares the U.S. Tire Manufacturers Association goal – outlined in its 2018 sustainability report – that all scrap tires enter

sustainable end-use markets. Further analysis is needed to identify additional markets for South Carolina. This should include a review of potential tire-product users, an assessment of private sector infrastructure needs, consideration of regulatory barriers and an analysis of financial barriers. This analysis should be conducted by Commerce's Recycling Market Development group. Specifically, the coalition has identified the following markets for discussion:

- Paving applications;
- Construction/civil engineering uses;
- Tire-derived fuel markets;
- Crumb rubber in manufacturing; and
- Emerging technologies (e.g., tire pyrolysis).

#### 3. Encourage state and local government to lead by example.

While private investment will be necessary to ensure a robust tire recycling industry, the public sector also will play a large role. Many uses for recycled rubber material are related to construction and civil engineering projects frequently undertaken by city, county and state governments. The following actions are recommended.

- DHEC should team with DOT and Commerce (Recycling Market Development Group) as well as other potential public-sector end-users to identify potential uses for processed recycled tires.

## 13,000 Every Day ...

**South Carolinians generate an estimated 13,000 tires per day.** If improperly managed, scrap tires pose a potential risk to human health and the environment. If recycled, they can be made into many products or used as an alternative fuel source.





This recycled-content material includes 1) the use of crumb rubber in paving applications, 2) the use of tire chips as aggregate substitute in construction, and 3) the use of tire shreds as lightweight fill.

- Opportunities should be developed for state and local DOT engineers to learn and share information about new technologies for using tire rubber in construction.
- Consideration should be given to providing grant funding for projects that use tire material.

**4. Update tools to improve management of scrap tires.** DHEC is the lead agency on the proper management of scrap tires. Additional state and local governments as well as other stakeholders, however, share in that responsibility. Recommended strategies to improve proper management include:

- Continue to review state laws and regulations to identify possible changes that would improve DHEC's ability to stop illegal dumping and improper storage of waste tires;
- Review DHEC procedures to identify process changes that could improve outcomes of enforcement actions;
- Review DHEC procedures for issuing waste tire processor permits to ensure economic and technical viability and adequate financial assurance;
- Promote the Act changes proposed in 2019; and
- Find opportunities to work with other law enforcement agencies (e.g., local code enforcement, litter control, mosquito control officers). DHEC should provide material to share about the dangers of waste tire dumping and the regulatory options to enforcement.

*Pictured above right is a door hanger tag used to tell Anderson County residents where to recycle tires.*

*The magazine ad on the right is used by the City of Sumter.*

**RECYCLE**  
waste tires

**Tire Disposal**  
Residents can take up to 10 passenger vehicle tires to Anderson County's Materials Recovery Facility at 104 Landfill Road in Belton. For more details, call (864) 338-5322. A fee of \$1.50 per tire will be charged for more than 10 tires. To avoid paying this fee, residents are asked to leave their old tires with the tire dealer when buying new ones.

**Tire Fee**  
Each South Carolina resident pays a \$2 fee to the tire dealer for each new tire they purchase. This fee covers the expenses of recycling your waste tires.

**Do Your Part!**  
It's the LAW to recycle waste tires in South Carolina. Help keep Anderson County's roads clean and pristine.

Anderson County Solid Waste  
721 E. 2nd St., Anderson, SC 29626  
803.746.102

**DON'T MAKE OLD TIRES A NEW PROBLEM!**

**Tires make the world go round ... but they don't last forever.**

When their time comes, it's time to recycle. Waste tires may create significant environmental concerns including fires and breeding habitats for mosquitoes when illegally dumped or stored. Old tires have new lives. Tires can be turned into new roads, playground surfaces, energy and more.

**RECYCLE.** To find the recycling center nearest you, visit [www.sumtersc.gov/recycling.aspx](http://www.sumtersc.gov/recycling.aspx) or call (803) 436-2558.

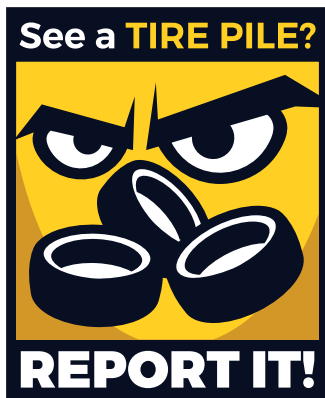
**REPORT.** If you see a tire pile or dump, report it to your local litter control or DHEC office.

recyclemoreSC.org CITY OF Sumter FUNDING BY dhec

5. **Increase education and outreach.** Perhaps the most important tool in promoting proper waste tire management is education/outreach. Four target audiences – the public, local governments, retailers/haulers and law enforcements have been identified. Strategies recommended include:

- Developing a statewide public awareness campaign that focuses on the human health, environmental and community concerns associated with improperly stored or illegally dumped waste tires (e.g., fire, contamination of water sources, mosquitoes).

- Reinforcing the message that 1) property owners have a responsibility not to allow tires to be dumped/stored on their property and 2) no matter the size, tire piles should be reported immediately;
- Providing a toll-free number for residents and others to report tire piles;
- Providing grant funding to local governments to assist in education and outreach activities;
- Encouraging local governments to make eliminating tire piles a priority;
- Developing outreach material aimed at stakeholders including tire retailers, haulers and processors;
- Maintaining DHEC Web pages with information for tire dealers, tire haulers, residents, county governments and others; and
- Developing educational material to assist law enforcement officers on this issue.



*This proposed campaign logo (left) and billboard (below) will be used to help increase public awareness about improper tire disposal.*

**1-877-7LITTER**



## SUMMARY

This plan has been developed as a road map for giving consideration to all possible realistic solutions for improving scrap tire management in South Carolina and the region. This plan, however, will not work unless:

- There are markets – places for scrap tires to go – to be processed and turned into new products; and
- The economics of tire recycling improves.

The plan can work. South Carolina, home to five major tire manufacturers, has a unique opportunity to lead on this issue. The state should embrace this challenge. If South Carolina is the national leader in tire production and exports, it also should be a national leader in the sustainable management of scrap tires.

While the emphasis for this plan is improving the proper management of scrap tires, it should not be lost in the discussion how well the scrap tire management program has worked. Millions of tires have been properly managed and kept out of South Carolina landfills. While the majority of the state's scrap tires are turned into fuel, other tires have been turned into new products.

South Carolina needs to do better. Working together, the state can.

## WEB RESOURCES

- DHEC Waste Tire Web Page, [www.scdhec.gov/wastetires](http://www.scdhec.gov/wastetires)
- DHEC (Regulation 61-107.3 Solid Waste Management: Waste Tires), <https://live-sc-dhec.pantheonsite.io/sites/default/files/media/document/R.61-107.3.pdf>
- DHEC (Waste Tire Haulers Registration), [www.scdhec.gov/environment/land-management/solid-waste/waste-tire-haulers](http://www.scdhec.gov/environment/land-management/solid-waste/waste-tire-haulers)
- U.S. Tire Manufacturers Association (Sustainability: Driving the U.S. Tire Manufacturing Industry 2018 report), [www.ustires.org](http://www.ustires.org)

## S.C. SCRAP TIRE SUSTAINABILITY COALITION

Participants include:

- Anderson County, SC
- Argos-USA
- Associated Asphalt, LLC
- Blanchard Machinery
- BMW
- Bridgestone Americas
- City of Columbia
- Clemson University
- Continental Tire
- Cox Enterprises
- Geocycle- LafargeHolcim
- Giant Resource Recovery
- Giti Tire
- International Paper
- Kershaw County, SC
- Lehigh Technologies
- Liberty Tire Recycling
- Michelin North America, Inc.
- PalmettoPride
- Resolute Forest Products
- Richland County, SC
- S.C. Association of Counties
- S.C. Asphalt Pavement Association
- S.C. Department of Commerce
- S.C. Department of Natural Resources
- S.C. Manufacturers Alliance
- S.C. Tire Dealers and Retreaders Association
- S.C. Tire Processors- Ameresco
- S.C. Department of Transportation
- Tri-County Technical College
- Upstate Forever
- US Tire Manufacturers Association
- Volvo Cars