Liberty Tire Recycling is the premier provider of tire recycling services in North America. By recycling more than 141 million tires annually, Liberty Tire reclaims about 1.59 billion pounds of rubber for innovative, eco-friendly products. The recycled rubber produced by Liberty Tire is used as crumb rubber and industrial feedstock for molded products; as tire-derived fuel for industrial kilns, mills and power plants; and as rubber mulch for landscaping and playgrounds. The company maintains a network of processing plants and comprehensive door-to-door collection services. Liberty Tire Recycling is headquartered in Pittsburgh, PA. For more information, please visit www.libertytire.com.

**FOUNDED**
2000

**NUMBER OF EMPLOYEES**
More than 1,500

**CORPORATE LEADERSHIP**
Thomas Womble, Chief Executive Officer
Mark Vescovi, Chief Information Officer
Frank J. Decarlo, General Counsel
Dave Mikus, Chief Financial Officer
Scott Fowler, Senior Vice President—South Region
Barry Mathis, Senior Vice President of Human Resources and Operational Excellence
Steve Bigelow, Senior Vice President of Sales and Marketing

**CORE SERVICES**
- Tire Collection and Remediation
- Tire Recycling
- Manufacturing and Production
- Product Sales and Support
THOMAS WOMBLE  
*Chief Executive Officer*

Thomas Womble, CEO of Liberty Tire, has 25 years of experience consolidating, integrating, and optimizing solid waste companies. These experiences span various industries including, solid waste hauling, landfill development and operations, portable toilet, and Tire Recycling. Thomas was an original investor in Liberty Tire, Recycling LLC. Thomas returned to the company in 2013 as the Chief Operating Officer and was named CEO in 2017. Thomas is a University of North Carolina at Wilmington graduate with a BS in Business Administration.

FRANK J. DECARLO  
*General Counsel*

Mr. DeCarlo brings more than 20 years in business, legal and leadership experience to Liberty Tire Recycling. He earned his J.D. and M.B.A. from West Virginia University.

Mr. DeCarlo received a B.S. from the U.S. Military Academy at West Point, NY, and is a former U.S. Army officer serving in the U.S., Germany and Iraq. He has been part of the LTR leadership team since 2010.

DALE B. MIKUS  
*Senior Vice President—Chief Financial Officer*

Mr. Mikus joined Liberty Tire Recycling in July 2018. He has over 30 years of manufacturing experience within the metals, mining, energy, aerospace and industrial industries. Dale is a proven Strategic and Financial Business Leader in all facets of business and finance with emphasis on building shareholder value through strategic initiatives, enhanced profitability, developing domestic and international business solutions, process reengineering and organization building and development. Prior to Liberty Tire Recycling, he held C-level positions at H-D Advanced Manufacturing, Latrobe Specialty Metals, Copperweld, Dresser and Haliburton following 12 years with PricewaterhouseCoopers. Dale is a CPA and earned a bachelor’s degree in Accounting from Robert Morris University.

SCOTT FOWLER  
*Senior Vice President—South Region*

Mr. Fowler has 16 years of experience in the tire recycling business. He worked for US Tire Recycling before they were acquired by Liberty in 2000. Prior to that he worked in commercial banking with Southtrust Bank. He has a B.A. in Business Administration from UNC-Charlotte.
BARRY MATHIS  
Senior Vice President of Human Resources and Operational Excellence

Mr. Mathis has over 25 years of manufacturing and quality experience. Prior to joining Liberty Tire Recycling in 2012, he worked for Boeing, Alcoa and Oldcastle Building Envelope in various roles. He has a B.B.A. from the University of Georgia and an M.S. from Southern Polytechnic State University.

STEVE BIGELOW  
Senior Vice President of Sales and Marketing

Mr. Bigelow brings 25-plus years of consumer-packaged goods experience to Liberty Tire Recycling—most recently as president, Action Sports Division, for Easton-Bell Sports. He has experience dealing with a broad and diverse range of retailers, consumers, suppliers and corporate partners. He earned a bachelor’s degree in marketing from the University of Nebraska -Lincoln. He has been a part of the Liberty Tire Recycling leadership team since 2014.

LEIGH EASTMAN  
Senior Vice President of Support Services

Ms. Eastman joined Liberty Tire Recycling full-time in 2018, after consulting with the firm on various projects for several years. She has more than 20 years’ experience in operations, finance, sales and marketing and is experienced in manufacturing, banking, and broadcasting. Prior to joining Liberty, Leigh was Vice President of Operations for NEP Broadcasting. Leigh holds a CPA designation and is a proud Clemson Tiger.

MARK VESCOVI  
Chief Information Officer

Mr. Vescovi joined Liberty Tire Recycling in 2018. Prior to joining Liberty Tire Recycling, he worked at Highmark Blue Cross Blue Shield for 22 years holding various positions and has more than 30 years’ experience in IT within the Healthcare, Finance and Manufacturing industries. He is a proven leader of IT and business transformation leading key strategic business initiatives resulting in sustainable business growth. Mark earned a bachelor’s degree in Computer Science from Indiana University of Pennsylvania, advanced certificates in Strategy and Innovation and Management and Leadership from MIT and a master’s certificate in Project Management from Duquesne University.
The Facts

Scientists have studied recycled rubber over and over again, and the evidence is clear... Crumb rubber material used in artificial turf or as a playground surface poses no significant health or environmental risk.

A study by the U.S. Environmental Protection Agency has revealed that recycled tire material is safe. The data the EPA collected came from synthetic turf fields and playgrounds, which revealed that concentrations of components monitored in the study were below levels of concern.

Particulate matter, metals and volatile organic compounds (VOCs) were measured in the air samples and compared with areas away from the crumb rubber, where the results were similar. No tire-related fibers were observed in the air samples, and all air concentrations of particulate matter and lead were below levels of concern.

Studies in New York and in California have come to similar conclusions. Crumb rubber products do not pose significant health or environmental risks...

A California EPA study from July 2009 found that there is no significant health risk to people who breathe the air above synthetic turf that contains crumb rubber. The study looked at the chemicals found in the air above the turf and the chemicals found in the air upwind from the fields that were analyzed.

THE CONCLUSION
The chemicals were found in similar concentrations in both samples.

A 2007 study by the California EPA evaluated the health effects of recycled tires in playground and track products.

THE RESULTS
The study found no significant evidence that the recycled rubber posed a cancer or health risk.

In New York, the state’s departments of Environmental Conservation and Health conducted an exhaustive study, releasing their findings in May of 2009.

BOTTOM LINE
Crumb rubber used in synthetic turf fields poses no significant environmental threat or health concerns.
The Benefits

Rubber Mulch on Playgrounds Promotes Safety
• Recycled rubber can cushion a child's fall from as high as 16 feet.
• Recycled rubber will not decompose, or easily float or blow away.
• Recycled rubber does not harbor insects or support mold or mildew.
• Recycled rubber safety surfacing is nontoxic.

Recycled Rubber Surfaces are Environmentally Friendly
• Each year, 25 million used auto tires are transformed into safe playing surfaces.
• Recycled rubber safety surfaces not only save trees from becoming organic mulch, but provide an innovative and productive outlet for scrap tires.

Athletic Fields Made of Synthetic Turf Conserve Water
• Grass fields require 50,000 gallons of water per week or more to remain healthy during the growing season.
• Natural turf also requires the use of fertilizers and pesticides.

Major Professional Sporting Organizations use Crumb Rubber Surfaces as their Fields of Play Every Day...
• About half of all NFL teams currently play their games on synthetic turf.
• It is also approved for World Cup soccer matches.
The improved function and long-lasting characteristics of recycled rubber bring quality to customers’ product lines while serving the important function of reaching conservation goals.

Much of the recycled rubber produced by Liberty Tire Recycling is used as crumb rubber and industrial feedstock for manufacturers, as tire derived fuel for use in industry, or as rubber mulch in landscaping and playground applications.

**Crumb Rubber**
Liberty Tire Recycling has the capacity to produce more than 300 million pounds of crumb rubber annually for a wide variety of innovative uses. With a network of crumb rubber manufacturing locations, Liberty Tire produces a wide variety of mesh sizes with 30- as the finest. For certain applications—such as those required to make automotive parts and coatings—Liberty Tire provides crumb rubber as “feedstock” to companies that produce finely ground rubber powders.

**Product Innovations**
As manufacturers discover the value of recycled rubber and embrace the environmental impact of recycling, scrap tires continue to be shredded and ground into various sizes of powders, crumbs and nuggets for use in more and more products.

- Welcome mats
- Railroad ties
- Anti-fatigue mats
- Acoustical underlay
- Portable speed bumps

*Beyond molded rubber products and coatings, recycled rubber is used to enhance road surfaces, power factories, beautify landscapes, protect children at play, and improve athletic surfaces.*
Rubberized asphalt highways ride quieter, last longer, and use significantly less paving material than traditional asphalt. Crumb rubber comprises 15- to 22-percent of the mix in rubberized asphalt along with traditional binder. But the result is anything but traditional.

Rubberized asphalt diminishes maintenance costs and provides a smoother, safer ride for motorists. In many cases, rubberized asphalt is laid using the same equipment as traditional asphalt, requiring no additional capital investment for contractors or municipalities.

**Resists Cracking and Rutting.**
Cracks in asphalt are caused by vertical or horizontal movements beneath the overlay as a result of traffic loads, temperature fluctuations, and shifting earth. Rubberized asphalt reduces the occurrence of cracking with superior elasticity. Rubberized asphalt is also stiffer than conventional paving, which means that it resists rutting and increases pavement life.

**Improves Skid Resistance. Decreases Splash and Spray.**
The safety of rubberized asphalt is greatly improved as a result of several unique attributes. Pavements made from rubberized asphalt exhibit greater skid resistance, and decreased splash and spray in wet conditions.

**Decreases Maintenance Costs. Requires no Additional Capital Investment.**
In use for more than 40 years, rubberized asphalt is laid using the same equipment as traditional asphalt in most cases and the longer-lasting properties reduce long-term maintenance costs. Plus, utilizing recycled rubber derived from scrap tires provides a reliable and consistent supply of material.

**Rides Quieter. Reduces Stockpiles of Scrap Tires.**
Noise pollution on highways and interstates continues to increase as traffic levels increase. However, rubberized asphalt is proven to reduce noise levels by upwards of 5 decibels. And rubberized asphalt provides an outlet for between 500 and 2,000 scrap tires per lane mile of pavement. So, for a 1-mile section of a four-lane highway, between 2,000 and 8,000 tires are creating a longer-lasting, safer, and more cost-effective roadway.
A Little Bounce in Your Step.

As a decorative landscape cover, recycled rubber mulch has the same appearance as wood or stone mulch with none of the drawbacks. Rubber mulch is nontoxic and non-staining, and minimizes airborne dust and particles. Plus, rubber mulch is applied once and remains fresh for years.

- Resistant to wind, water and sunlight
- Reduces bug and rodent infestation
- Does not decompose or compress
- Will not blow away or wash away
- Will not fade for up to 12 years
- Wheelchair accessible
- Long lasting and low maintenance

As safety surfacing, a six-inch layer of recycled rubber mulch will cushion a child's fall from as high as 16 feet, providing up to 50 percent more fall-height protection than wood mulch using half of the material. Liberty Tire manufactures rubber chips in a variety of sizes that can be found in retail stores and at playgrounds nationwide.

Organic mulching and playground surfacing requires application after application because of their rapid rate of decomposition. Recycled rubber saves money by remaining bright and plush for years with minimal maintenance. And rubber mulch not only saves trees, but provides an outlet for keeping millions of scrap tires out of landfills each year.

This Grass is Always Greener.
Crumb rubber also enhances the performance of a variety of sports surfaces, providing infill for sports fields, and paving for running tracks and equestrian surfaces.

Crumb rubber adds cushioning and springiness to protect athletes. Surfaces made from crumb rubber dry quickly, drain excess moisture, reduce dust and mud, and minimize freezing. Rain or shine, a field comprised of crumb rubber is always ready for action.
Fuel for a Sustainable Future.

Liberty Tire sells more Tire-Derived Fuel (TDF) than any other tire processor in North America, conserving vast amounts of natural resources.

As an alternative energy source to coal, oil and natural gas, TDF is consumed by cement kilns, pulp and paper mills, and power plants across the continent.

Based on more than a decade of testing, the U.S. Environmental Protection Agency recognizes the use of tire-derived fuels as a viable alternative to the use of fossil fuels.

TDF is one of several viable alternatives to prevent newly generated scrap tires from inappropriate disposal in tire piles, and for reducing or eliminating existing tire stockpiles.

When used as an alternative energy source, TDF produces more energy than coal—generating up to 15,000 BTUs per pound—with lower moisture, sulfur, nitrogen and ash. A million tires used as fuel in place of coal reduces carbon dioxide emissions by 19.5 percent.

Potentially, all of the scrap tires produced in the U.S. annually could provide an energy source equivalent to 13 million barrels of crude oil.

Of the 130 million scrap tires used as fuel per year:

- 41% Cement industry
- 20% Pulp and paper mills
- 18% Electric utilities
- 13% Industrial/ institutional boilers
- 8% Dedicated tire-to-energy facilities

Source: Rubber Manufacturers Association
Liberty Tire Recycling provides a complete service profile of collection options, including backdoor pickup, drop-and-hook pickup, and drop-off sites.

### BACKDOOR PICKUP
Liberty Tire dispatches a fleet of box vans daily to visit customer sites directly, removing scrap tires by hand on a periodic basis to keep our customers’ facilities clear of waste.

### TRAILER DROP-AND-HOOK
Customers who choose drop-and-hook pickup are left with bulk trailers to fill at their convenience, and Liberty Tire takes the load away with a tractor when it is full.

### DROP-OFF SITES
Tire deliveries are accepted at any Liberty Tire facility.

**Changing the Landscape**
Abandoned tire piles are a serious environmental concern faced by communities across the nation. Liberty Tire Recycling works with communities to remediate dangerous abandoned tire piles.

Liberty Tire has remediated more than 150 dump sites littered with nearly 40 million scrap tires from coast to coast.

Illegal tire dumps damage the environment by creating chemical runoffs to surface and ground water, and have the potential to fuel unruly fires that burn hot and are difficult to extinguish. Added to the environmental and safety threats, tire dumps provide habitats for vermin and mosquitoes.
**Cool Urban Living... for a New Generation.**
An urban heat island is an area that's significantly warmer than surrounding rural areas because land development uses materials that retain heat, such as asphalt.

But rubberized asphalt’s porous top layer cools down quicker than conventional asphalt, cooling our roads and diminishing urban heat island effects.

**Out of the Traffic... Into the Train.**
Composite railroad ties replace old creosote and toxic preservative-filled hardwood ties with a solution that lasts longer, and allows for heavier loads, faster train speeds, and more safety.

The Chicago Transit Authority projects the new ties will allow their Blue Line to bring commuters home faster than ever, increasing its current 15 mph up to 70 mph.

**Old Winter Studs... Become Champions.**
From the paddock area, to the wash stalls, to the barn corridors and beyond, environmentally-friendly pavers and mats play a vital part in protecting horses and livestock across the country.

The equine performance industry reports noticeable improvement in movement, flexibility, hoof quality and in the reduction of fluid retention in horses that walk on recycled rubber.

**Reclaiming, Recycling, Reusing... Refueling.**
Tire derived fuel produces more energy than coal, but with lower moisture, sulfur, nitrogen and ash as compared to most types of solid fuels.

Liberty Tire provides enough TDF to generate 100 percent of the electricity needed to power a city of 153,000 people—equal to the population of Fort Lauderdale, Florida.

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**Related Links**
For more information, consult these Web sites for information on recycled rubber and related products:

- **Rubber Manufacturers Association**
  [www.rma.org](http://www.rma.org)

- **Synthetic Turf Council**
  [www.syntheticturfcouncil.org](http://www.syntheticturfcouncil.org)

- **Institute of Scrap Recycling Industries**
  [www.isri.org](http://www.isri.org)

- **Tire Industry Association**
  [www.tireindustry.org](http://www.tireindustry.org)

- **Pinnacle Rubber Mulch**
  [www.ltrproducts.com](http://www.ltrproducts.com)

- **Rubber Pavements Association**
  [www.rubberpavements.org](http://www.rubberpavements.org)
Why is Liberty Tire Recycling the Leading Tire Recycler in North America?
Liberty Tire recycles more than 140 million tires annually, reclaiming about 1.5 billion pounds of rubber for innovative, eco-friendly products.

Where does Liberty Tire Recycling get Scrap Tires?
Tires of every shape and size are collected from a vast line-up of customers at more than 60,000 locations nationwide, including new tire retailers, automotive service centers, government institutions, military facilities, car dealerships, and tire wholesalers. Also, Liberty Tire has remediated more than 150 dump sites littered with nearly 40 million scrap tires during the past 7 years, exceeding any other organization in the nation.

How does Liberty Tire Recycling Collect Scrap Tires from Customers?
Liberty Tire provides a complete service profile of collection options, including backdoor pickup, drop-and-hook pickup, and drop-off sites. Box vans visit customer sites directly, removing scrap tires by hand on a periodic basis, or Liberty Tire leaves a bulk trailer for customers to fill at their convenience and takes the load away when full. Also, tire deliveries are accepted at any Liberty Tire facility.

How are Metals and Fiber Materials Removed from Scrap Tires?
After tires are processed, Liberty Tire Recycling removes and collects scrap steel with magnets and separates fiber components with air classifiers. The result is clean recycled rubber.

What is the Market for Recycled Rubber From Scrap Tires?
The market potential is broad based because recycled rubber makes many products and materials already in production even better. Rubber asphalt is safer and longer-lasting than traditional asphalt. Rubber mulch outperforms wood mulch. Tire-derived fuel is cleaner than fossil fuels. The examples go on and on. And, in the end, recycling rubber keeps millions of scrap tires out of landfills each year, making the entire process a true green alternative.
GLOSSARY

**Crumb Rubber**
A finely ground rubber produced from whole tires. Crumb rubber is the result of grinding scrap tires into various sizes—from nuggets, to crumbs, to powders—depending on the end use. Crumb rubber is used as a raw material in a wide variety of products and applications.

**Rubber Mulch**
Landscaping material made from recycled tires processed into nuggets that look like traditional wood mulch. The rubber nuggets are colored with nontoxic, long-lasting pigments.

**Rubberized Asphalt**
Similar to traditional asphalt, rubberized paving material adds 15- to 22-percent crumb rubber along with binder material. Rubberized asphalt is safer and more durable, and is often laid using the same equipment as traditional asphalt.

**Tire Derived Fuel (TDF)**
An alternative energy source to coal, oil and natural gas. TDF is used to operate cement kilns, pulp and paper mills, and power plants. TDF produces more energy than coal—generating up to 16,000 BTUs per pound—with lower moisture, sulfur, nitrogen, and ash.
This figure is intended to convey the complex chemical mixtures that make up both natural soil and recycled rubber. Many of the same chemicals occur in both (highlighted in red). The mere presence of a chemical is not indicative of risk. Chemical concentrations, exposure measurements, and risk assessment must be used before assuming that the presence of a chemical might result in an adverse health effect.