Liberty
TIRE RECYCLING

Keeping Pace With Tire Waste

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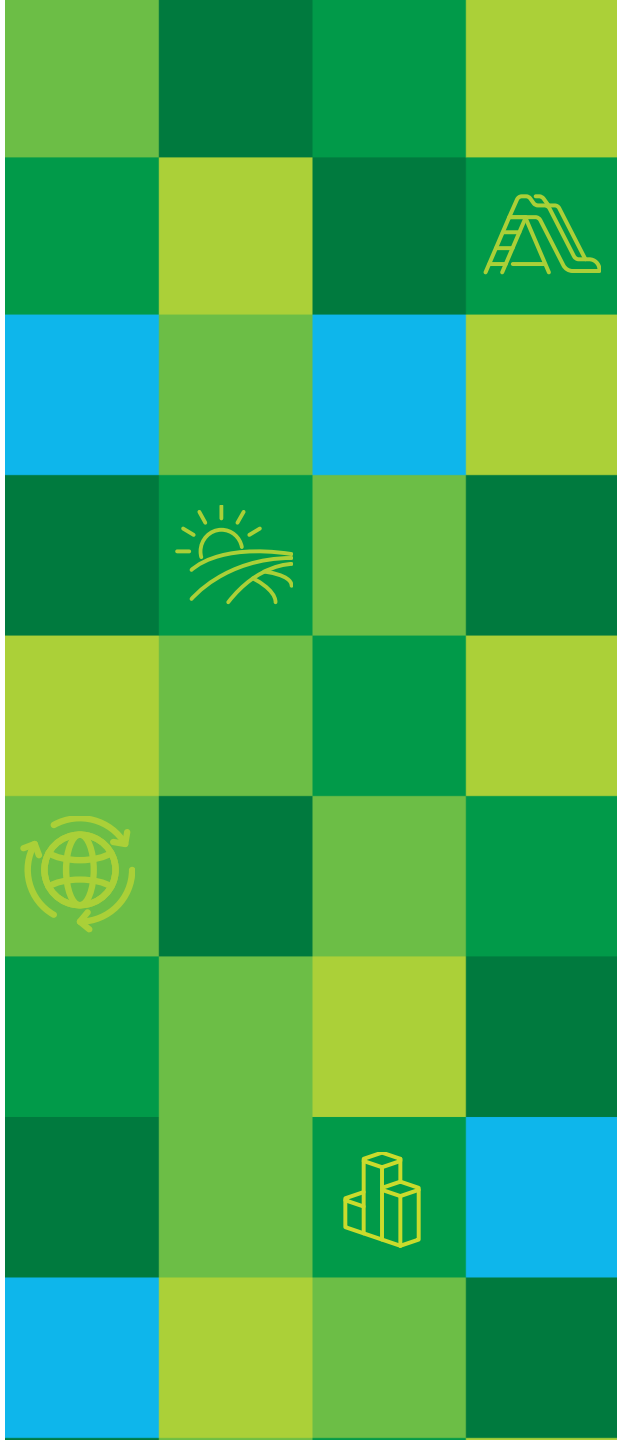
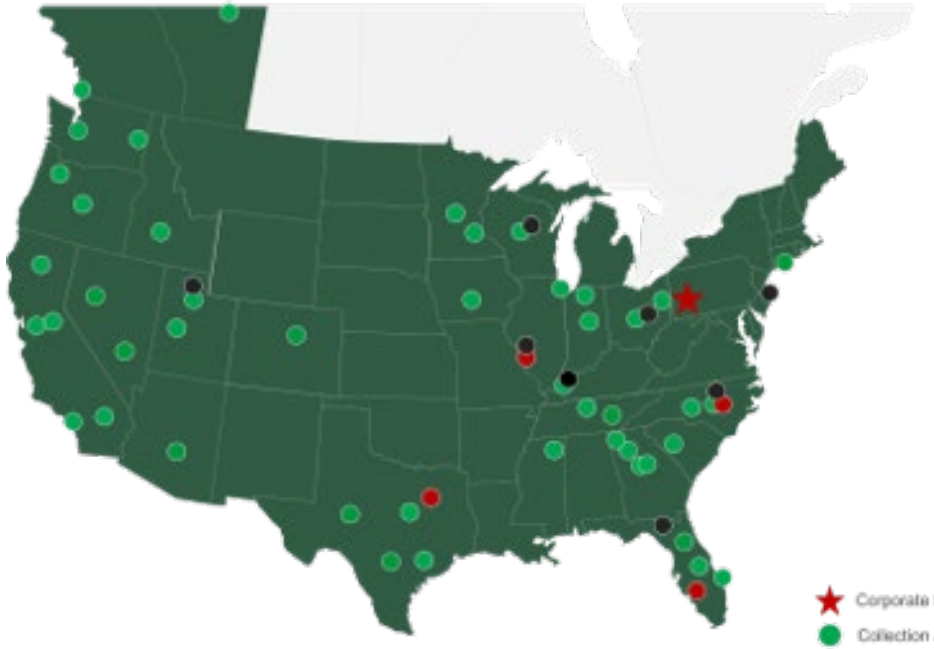


Who is Liberty?

The only coast-to-coast full-service tire recycler. From picking up your old tires, to processing them, to manufacturing products you can buy in your local Walmart. We do it all.



#1 Safety Record in the Industry

#1 Only ESG Program in the Industry

60 Locations Across North America

53 States / Provinces Liberty Operates In

3BN+ Pounds of Rubber Diverted Annually From Landfills

- Corporate Headquarters
- Collection / Processing Facilities
- Mulch & Molded Goods Facilities
- Regional / Administrative Offices

Who are you?

Native to Florida—from a solid waste family (C&D).

Nearly 20 years working in politics and advocacy in Washington, D.C. and internationally.

Last eight years working across the tire recycling industry—suppliers, recyclers, manufactures.

A few tire(ing) facts

1B+
Scrap Tires On The Ground In 1990s

<48M
Scrap Tires On The Ground In 2023

36
States With State Fees

300M+
ELTs Each Year

44
States With Disposal Rules

2nd
Highest Recycled Product

Solving for then vs. now

Control The Flow

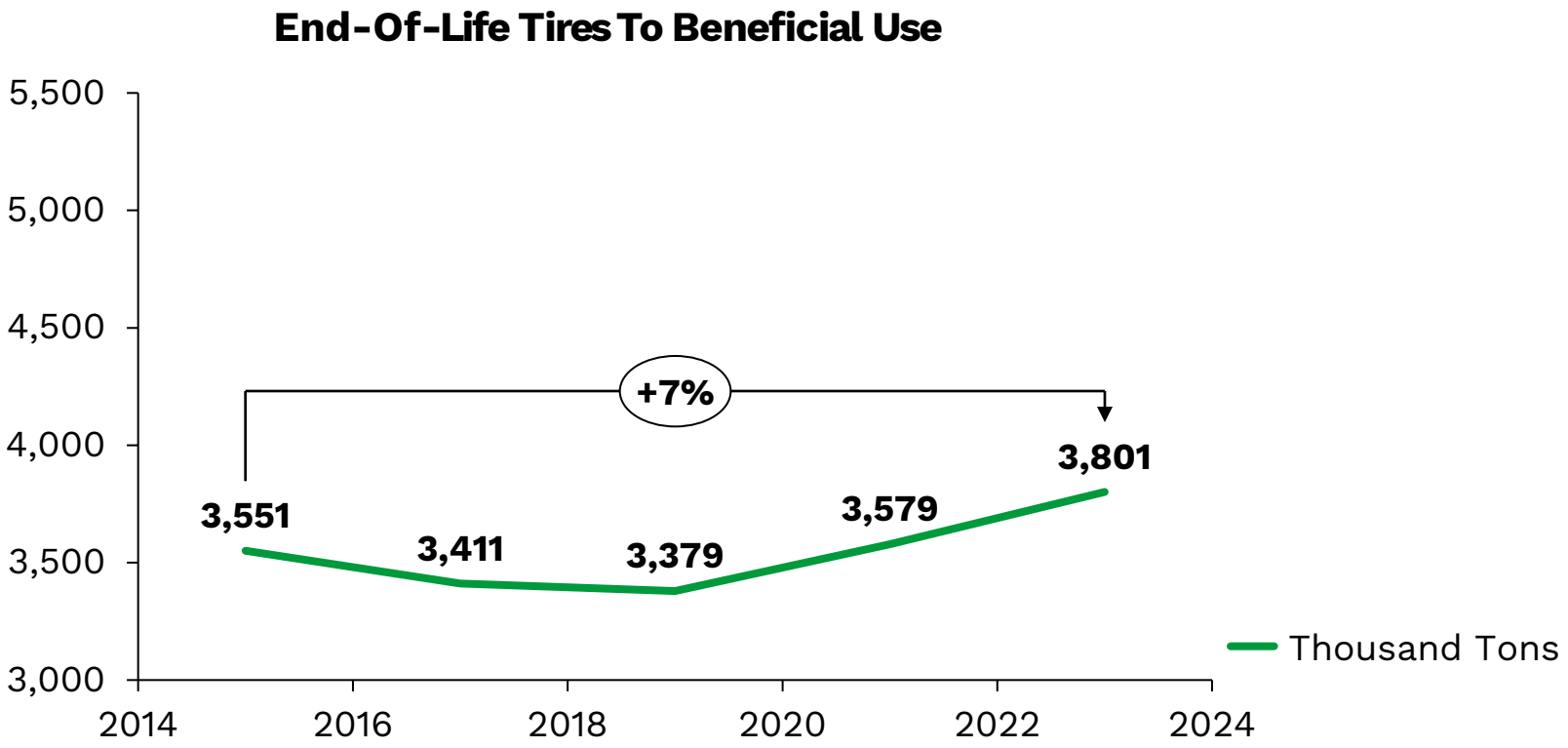
- States did not know what to do with tires
- Tire fires were high profile
- Mosquito breeding ground
- Landfills restricting tires
- A billion tires on the ground

Higher & Better Markets

- 97% of tires are managed
- 80% of tires are recycled
- Still 874,000 tons to landfills
- Large but shrinking fuel market
- Diversification is key

From….To

What's the status of tire recycling?



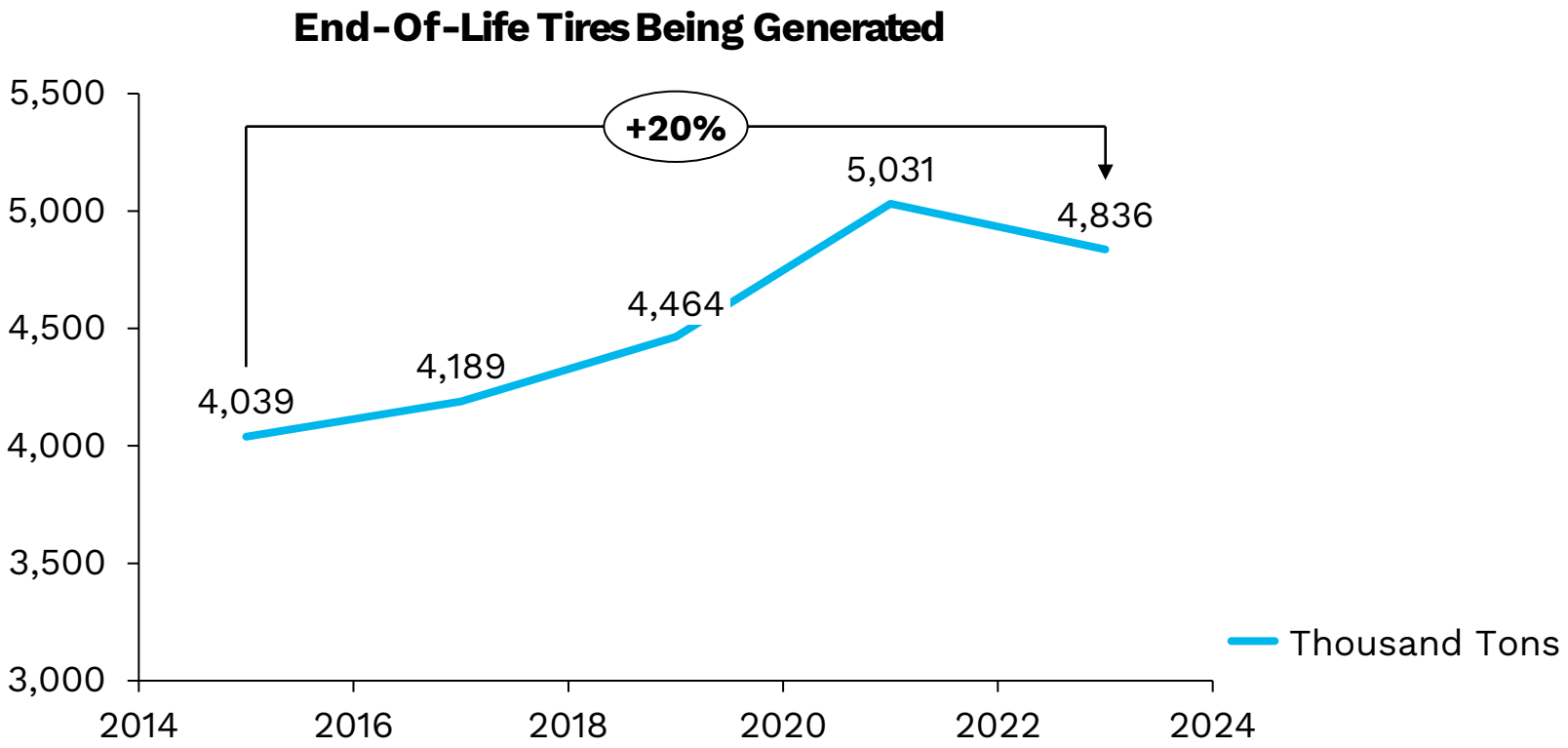
79%

Beneficial Use Rate

2nd

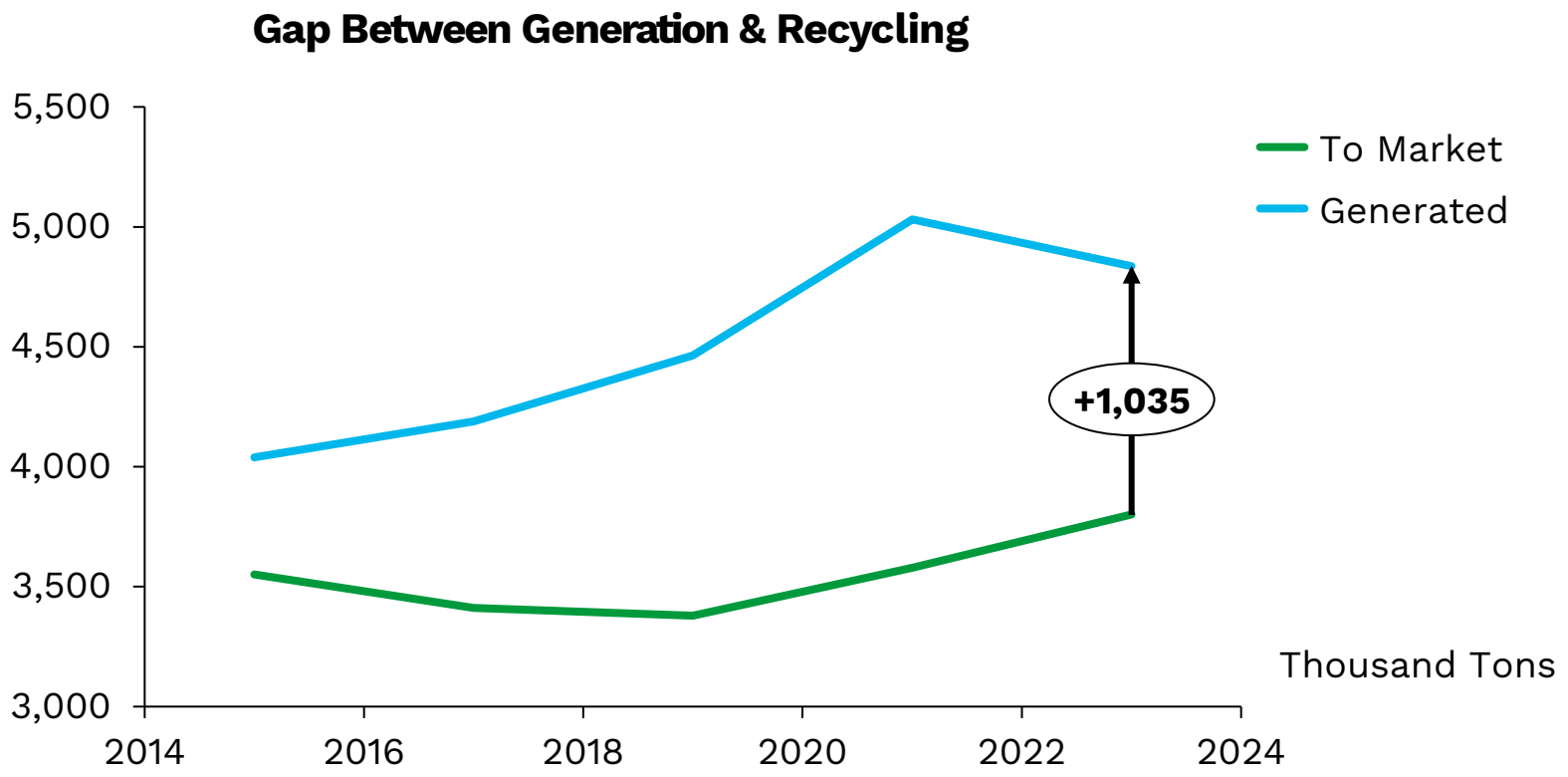
Highest Recycled Product

So, what's the problem?



Despite progress—the number of tires coming off the road is increasing faster than recycling. Driven (ha-ha) by more vehicles, heavier vehicles, and EVs.

A troubling gap has emerged

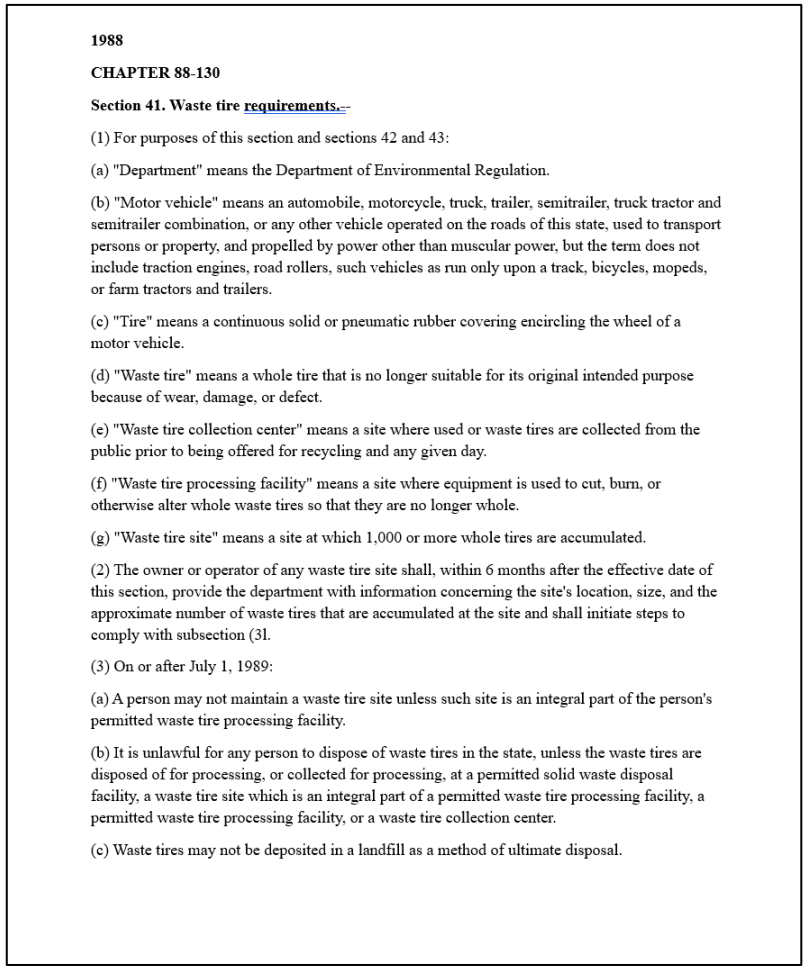


A lot has changed since 1988…

But not our tire laws

Florida's 1988 Law

- Took the 1988 law and the 2024 law
- Asked GenerativeAI prompts to compare the two excluding minor technical changes
- Conclusion? 90-95% the same



1988

CHAPTER 88-130

Section 41. Waste tire requirements.--

(1) For purposes of this section and sections 42 and 43:

(a) "Department" means the Department of Environmental Regulation.

(b) "Motor vehicle" means an automobile, motorcycle, truck, trailer, semitrailer, truck tractor and semitrailer combination, or any other vehicle operated on the roads of this state, used to transport persons or property, and propelled by power other than muscular power, but the term does not include traction engines, road rollers, such vehicles as run only upon a track, bicycles, mopeds, or farm tractors and trailers.

(c) "Tire" means a continuous solid or pneumatic rubber covering encircling the wheel of a motor vehicle.

(d) "Waste tire" means a whole tire that is no longer suitable for its original intended purpose because of wear, damage, or defect.

(e) "Waste tire collection center" means a site where used or waste tires are collected from the public prior to being offered for recycling and any given day.

(f) "Waste tire processing facility" means a site where equipment is used to cut, burn, or otherwise alter whole waste tires so that they are no longer whole.

(g) "Waste tire site" means a site at which 1,000 or more whole tires are accumulated.

(2) The owner or operator of any waste tire site shall, within 6 months after the effective date of this section, provide the department with information concerning the site's location, size, and the approximate number of waste tires that are accumulated at the site and shall initiate steps to comply with subsection (31.

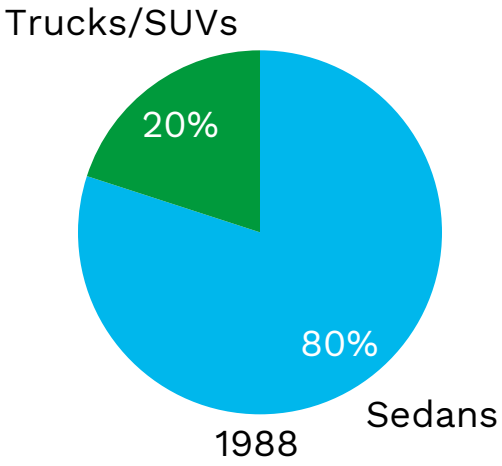
(3) On or after July 1, 1989:

(a) A person may not maintain a waste tire site unless such site is an integral part of the person's permitted waste tire processing facility.

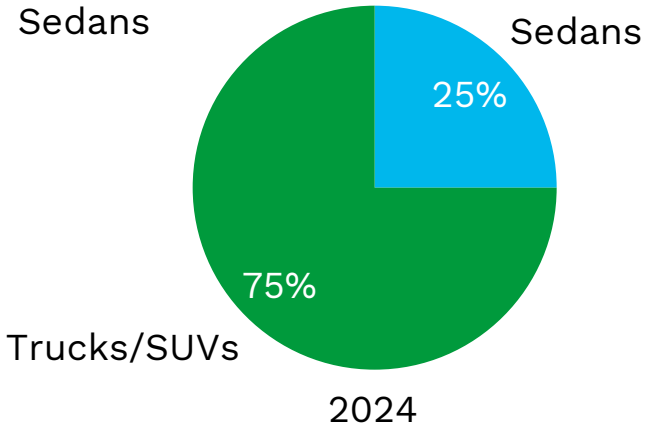
(b) It is unlawful for any person to dispose of waste tires in the state, unless the waste tires are disposed of for processing, or collected for processing, at a permitted solid waste disposal facility, a waste tire site which is an integral part of a permitted waste tire processing facility, a permitted waste tire processing facility, or a waste tire collection center.

(c) Waste tires may not be deposited in a landfill as a method of ultimate disposal.

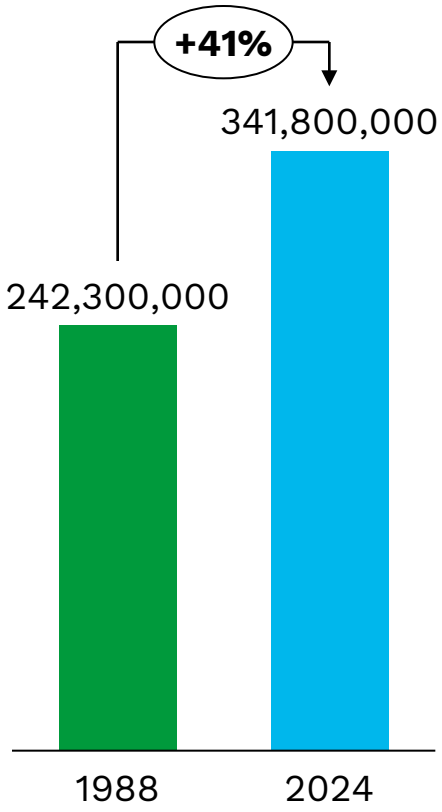
Yet, a lot has change on the roads



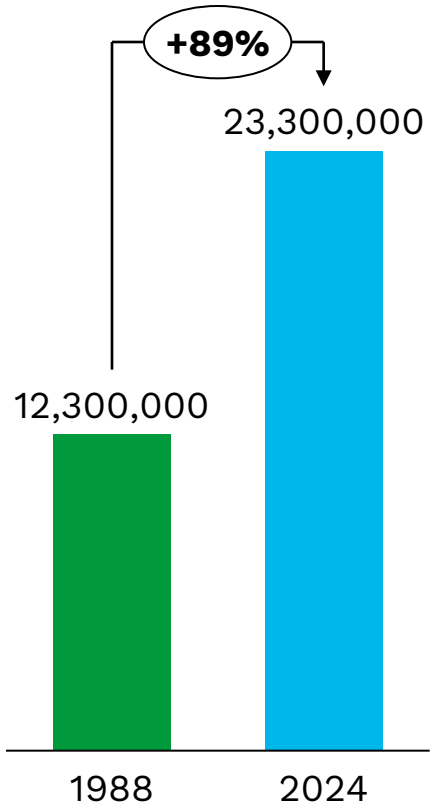
Bigger Vehicles On the road



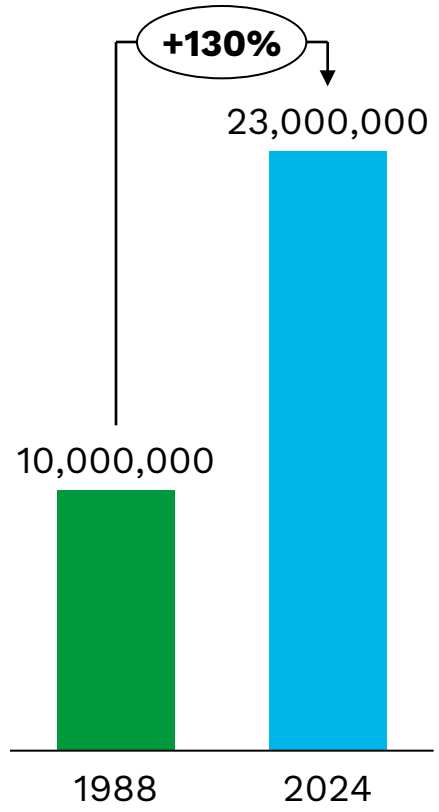
Bigger US Population



Bigger FL Population



More FL Vehicles



What can we do?

1. Don't incentivize bad actors.
2. Return the money back to the intended use.
3. Provide counties funding for cleanup costs.
4. Incentivize end-markets to change the economics.

So, what's the path forward?

If you are pushing a public policy campaign, fighting a bad law, or dealing with a public relations crisis—you need to have a plan.

Education

Strategy

Process

Education is everything

The best way to stop a problem is to prevent it from ever becoming a problem.

1. Map out your footprint
2. Know your impact
3. Engage before you have an ask
4. It's a continuous process

Find your strategy

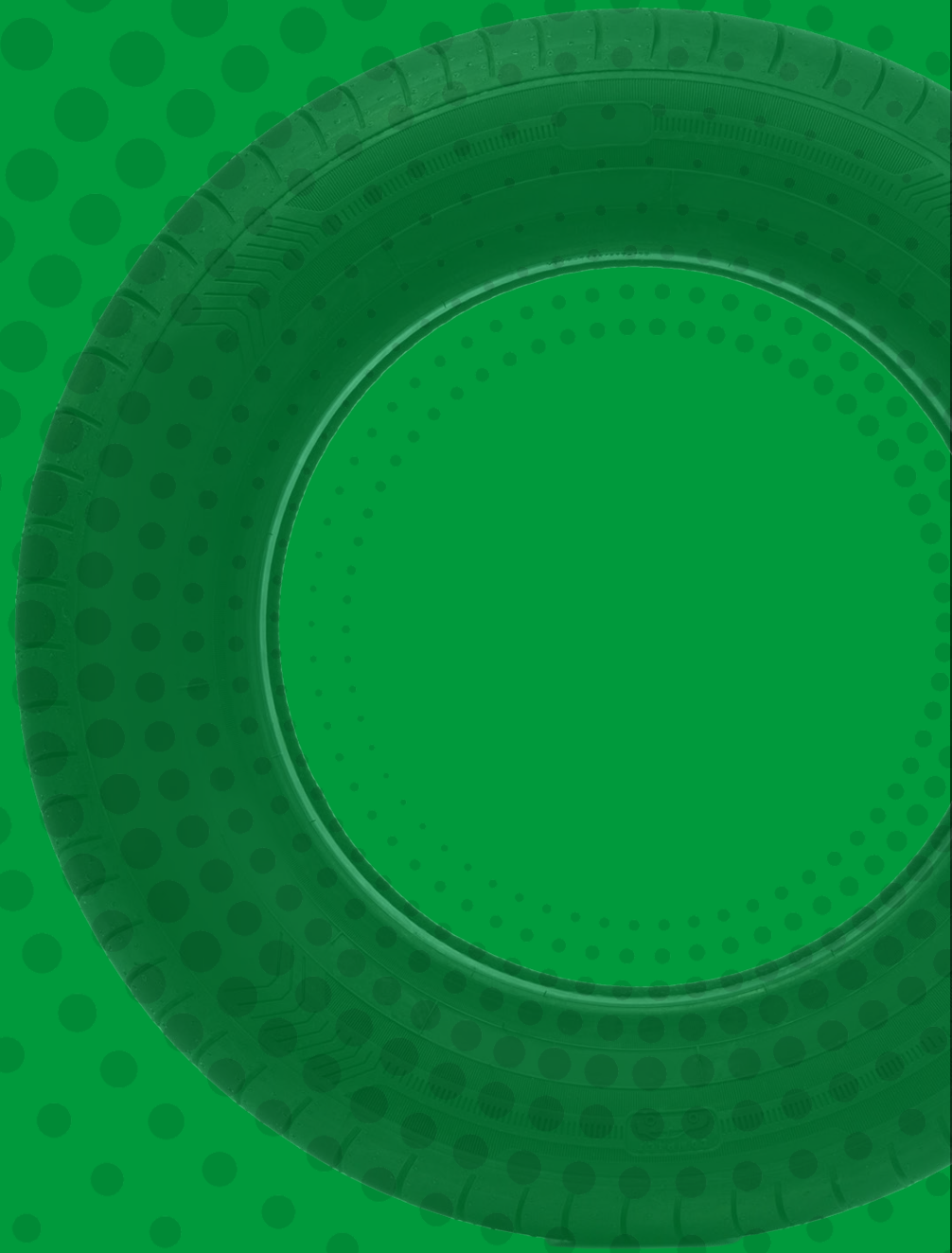
Figure out your strategy—different from tactics—that can align everyone in your campaign. These are just a few examples:

- **Unlikely allies:** This policy is so extreme that Exxon and Sierra Club are both against it.
- **Localize and personalize:** At no costs to taxpayers, this policy supports local American jobs and manufacturers like Air Tractor in Olney, Texas.
- **Goodwill delegation:** Parents, athletic directors, and parks and rec directors oppose this policy because it will limit playing access to kids across the state.

Set up a process

The new industry buzzword is "stakeholder management" and there is a reason why—the people who impact our business go far beyond just our customers.

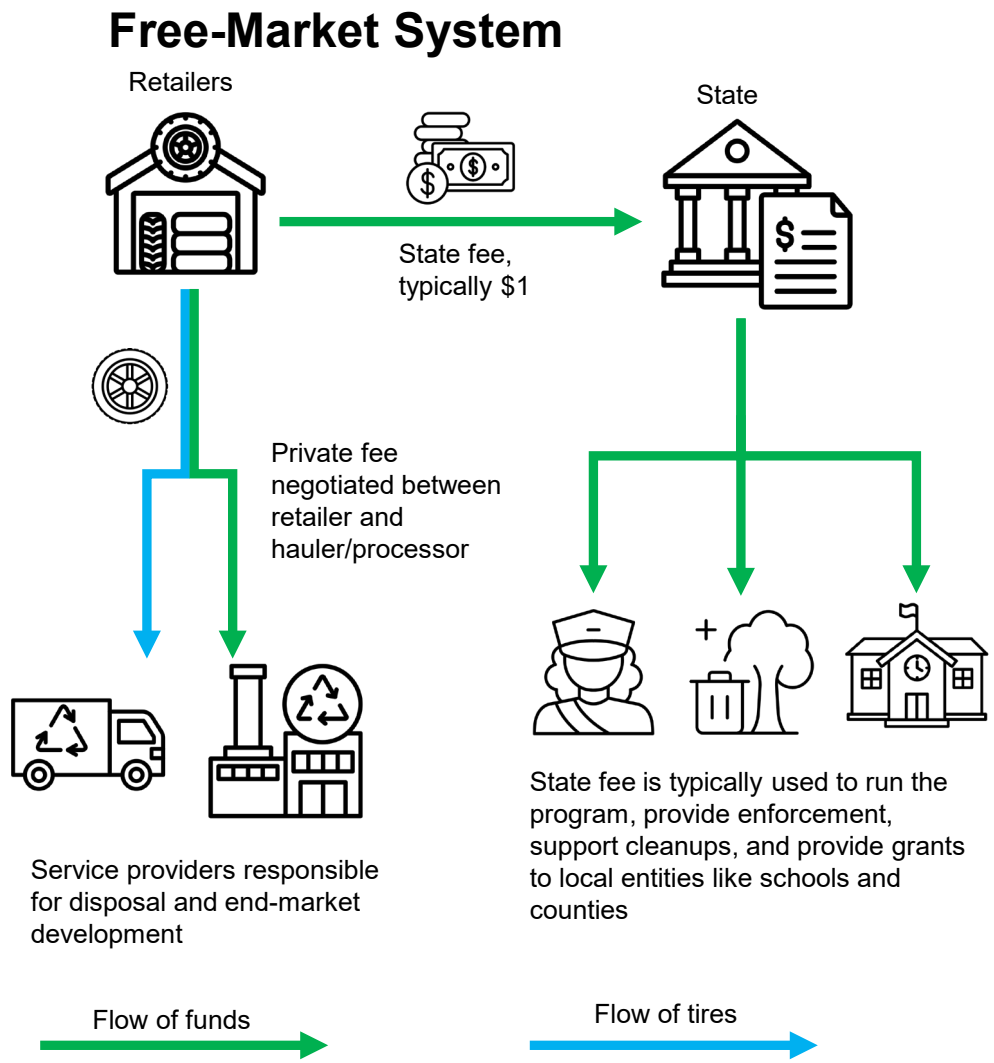
Appendix



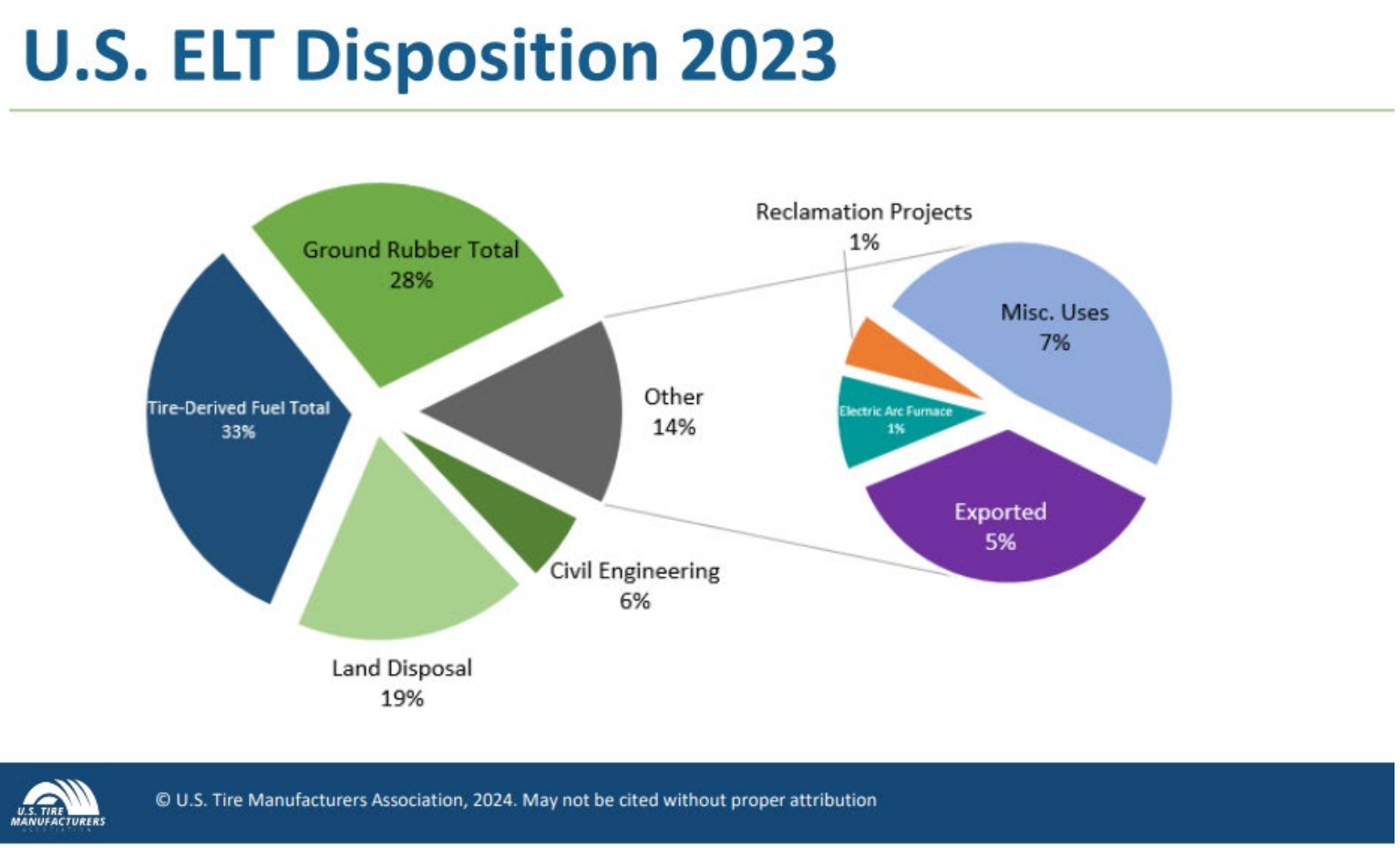
Florida operates a free-market model

Most States Operate Under A Free Market System:

- In a market-based system, the tire fee does not pay for the cost of disposing of a tire
- The state fee supplements the market system by providing funding for enforcement, oversight, and end-market grants
- Retailers and private-sector haulers and recyclers negotiate fees directly
- 36 states charge some sort of state fee ranging from 25 cents to $5—with $1-$2 being the most common

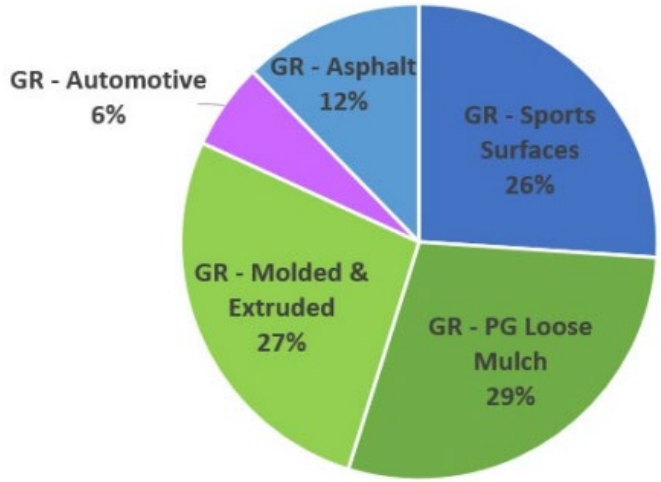


Recycled tires by destination



Ground rubber by destination

U.S. Ground Rubber Markets 2023



U.S. EPA on recycled rubber safety

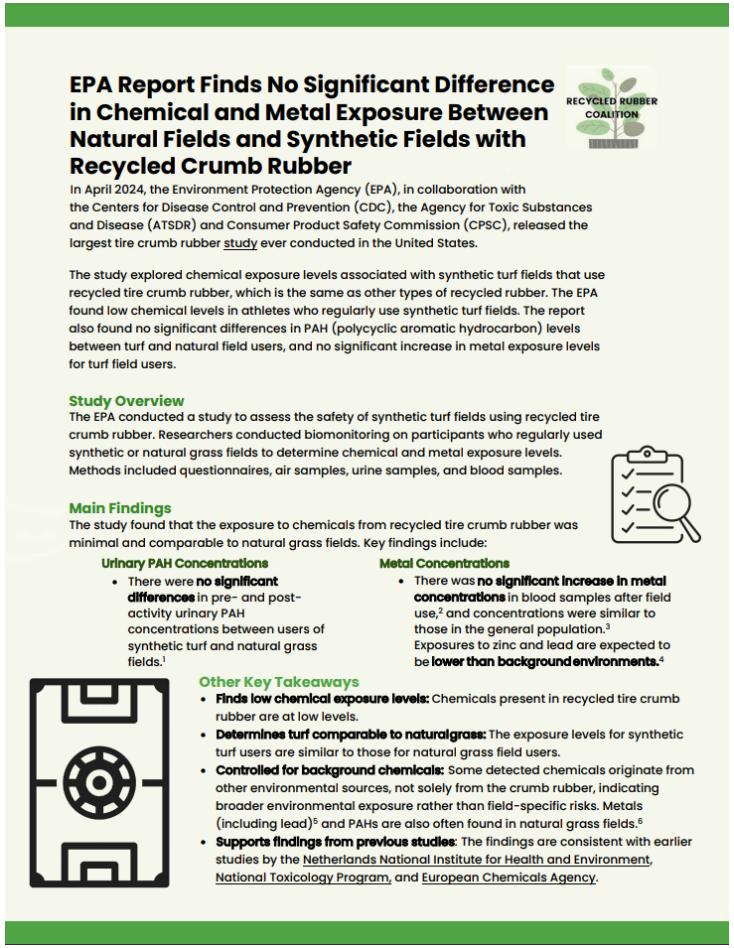
Federal Research On Recycled Tire Crumb Used On Playing Fields and Playgrounds

Background:

- Multi-agency federal effort
- Formed in 2016
- Last report issued in 2019
- Looked at expose differences in players who used synthetic turf with crumb rubber and players who used grass fields

Findings:

- Reinforces the literature demonstrating recycled rubber is low-or-no risk
- Metals, chemicals, and air emissions findings were “not different,” “similar,” and “no differences”
- Endorses findings from other studies that found “playing sports on these fields is safe”
- States that although chemicals are present, any exposure is likely limited



EPA Report Finds No Significant Difference in Chemical and Metal Exposure Between Natural Fields and Synthetic Fields with Recycled Crumb Rubber

RECYCLED RUBBER COALITION

In April 2024, the Environment Protection Agency (EPA), in collaboration with the Centers for Disease Control and Prevention (CDC), the Agency for Toxic Substances and Disease (ATSDR) and Consumer Product Safety Commission (CPSC), released the largest tire crumb rubber study ever conducted in the United States.

The study explored chemical exposure levels associated with synthetic turf fields that use recycled tire crumb rubber, which is the same as other types of recycled rubber. The EPA found low chemical levels in athletes who regularly use synthetic turf fields. The report also found no significant differences in PAH (polycyclic aromatic hydrocarbon) levels between turf and natural field users, and no significant increase in metal exposure levels for turf field users.

Study Overview

The EPA conducted a study to assess the safety of synthetic turf fields using recycled tire crumb rubber. Researchers conducted biomonitoring on participants who regularly used synthetic or natural grass fields to determine chemical and metal exposure levels. Methods included questionnaires, air samples, urine samples, and blood samples.

Main Findings

The study found that the exposure to chemicals from recycled tire crumb rubber was minimal and comparable to natural grass fields. Key findings include:

Urinary PAH Concentrations

- There were **no significant differences** in pre- and post-activity urinary PAH concentrations between users of synthetic turf and natural grass fields.[1]

Metal Concentrations

- There was **no significant increase in metal concentrations** in blood samples after field use,[2] and concentrations were similar to those in the general population.[3] Exposures to zinc and lead are expected to be **lower than background environments.**[4]

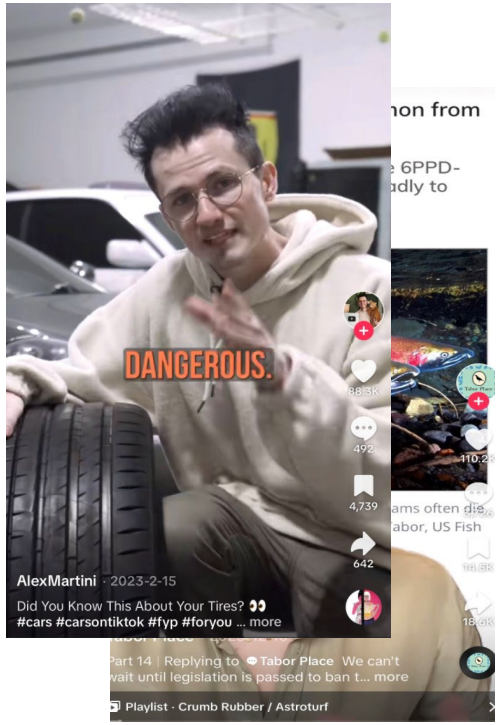
Other Key Takeaways

- **Finds low chemical exposure levels:** Chemicals present in recycled tire crumb rubber are at low levels.
- **Determines turf comparable to natural grass:** The exposure levels for synthetic turf users are similar to those for natural grass field users.
- **Controlled for background chemicals:** Some detected chemicals originate from other environmental sources, not solely from the crumb rubber, indicating broader environmental exposure rather than field-specific risks. Metals (including lead)[5] and PAHs are also often found in natural grass fields.[6]
- **Supports findings from previous studies**: The findings are consistent with earlier studies by the Netherlands National Institute for Health and Environment, National Toxicology Program, and European Chemicals Agency.

Costs of failure: Stanley cups

We live in a world where (mis)information moves faster than ever and trying to catch up means being permanently behind.

We've seen it in tires...



...and it can hit any industry.