

Status of the Waste Tire Program in Colorado

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| 2018 Waste Tire Report | Generation, management and flow | By the numbers | Summary and outlook | Illegal Waste Tire Cleanup Grants | Local Public Health inspections |
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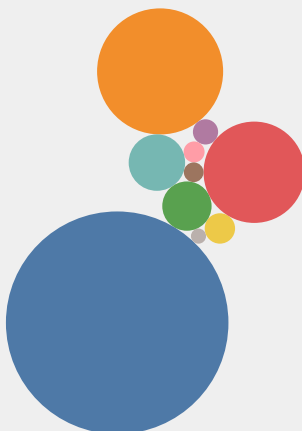
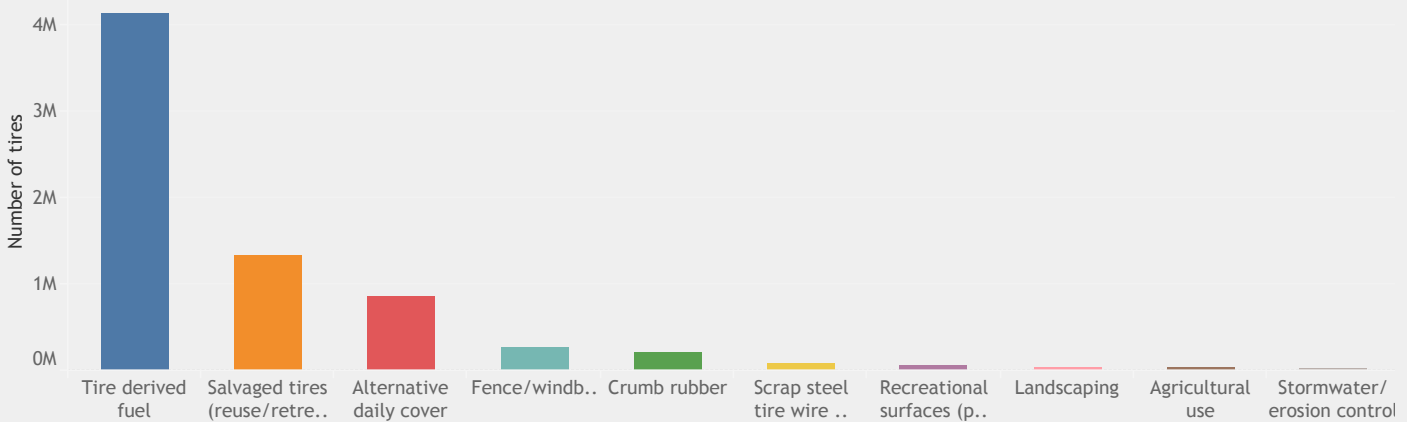
Executive Summary

Calendar year 2018 marks the fifteenth year the Colorado Department of Public Health and Environment has compiled data related to waste tire recycling, waste tire funds and the status of Colorado's Waste Tire Program.

This 2018 annual report on waste tire recycling in Colorado is transmitted to the Colorado General Assembly and the Solid and Hazardous Waste Commission. This report includes the following; information on the waste tire fee, the status of a priority abatement list for illegal waste tire disposal sites and an updated list of waste tire grant fund programs. The total number of waste tires recycled in the state is also included to gauge the generation, management, flow and end use markets. The regulated community submits part of this information to the department pursuant to the Regulations Pertaining to Solid Waste Sites and Facilities (6 CCR 1007-2, Section 10).

Annual reporting forms are submitted to the department from waste tire processors, waste tire collection facilities, waste tire monofills, waste tire haulers, mobile waste tire processors and end users of tire derived products. Report information is also gathered from tire retailers via new tire fee return forms, registration forms, and waste tire inspection and waste tire cleanup data. For mathematical uniformity and to allow comparison of tire data that was reported in tons, the department uses a nationally-recognized standard to convert tons into passenger tire equivalents (PTE's). This report uses the U.S. Tire Manufacturers Association's nationally-recognized standard of 22.5 pounds per PTE conversion, which is the appropriate average weight of a passenger automotive tire.

Top 10 recycled waste tire uses



The report presents the 2018 Top 10 uses of recycled waste tires. Though tire-derived fuel end usage was close to 2017 numbers, other 2017 Top 10 end uses significantly decreased. For instance, alternate daily cover use dropped by over 2 million tires and tire bale fence/windbreaks decreased by almost a half-million tires. These two end uses were also two of the top three category recipients of End Users Fund rebates in 2017. The End Users Fund ended at the end of 2017 as the fund was repealed on Jan. 1, 2018.

Hover over the circles to the left to explore the top 10 recycled waste tire uses.

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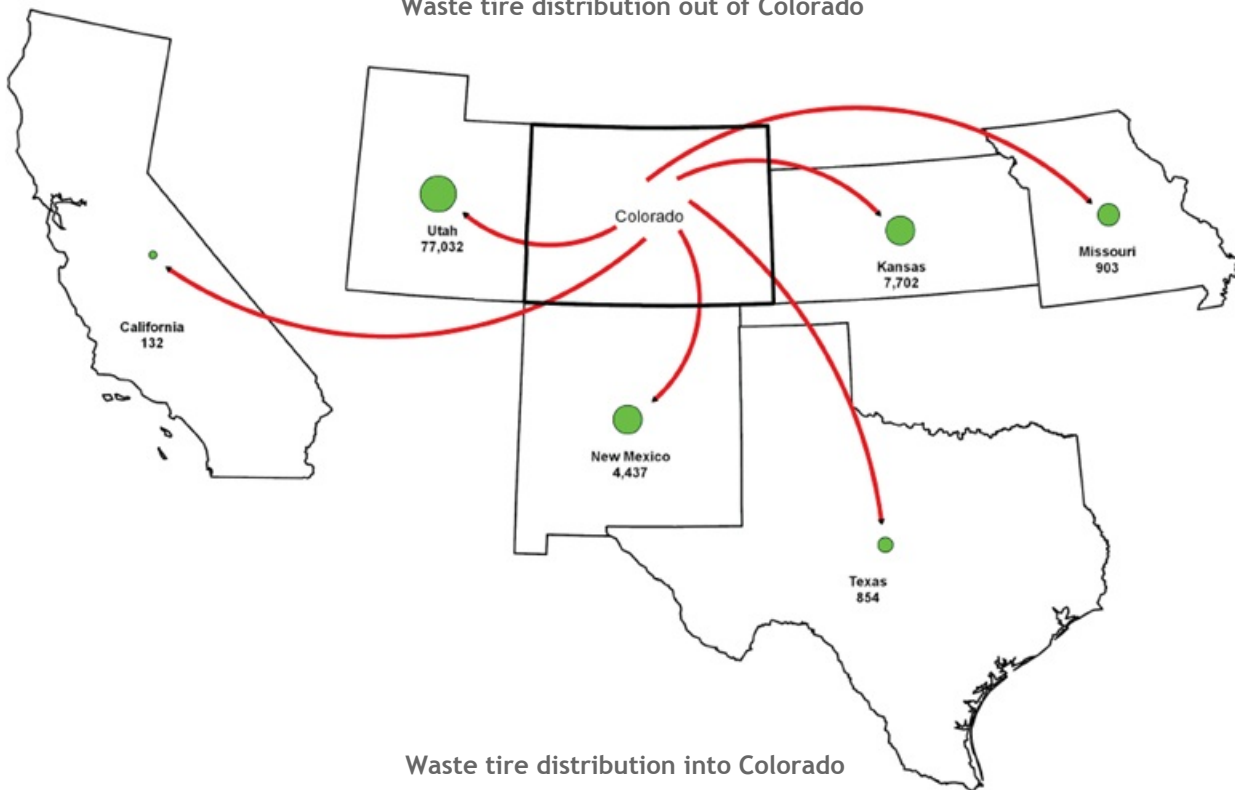
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Waste tire generation, management and flow:

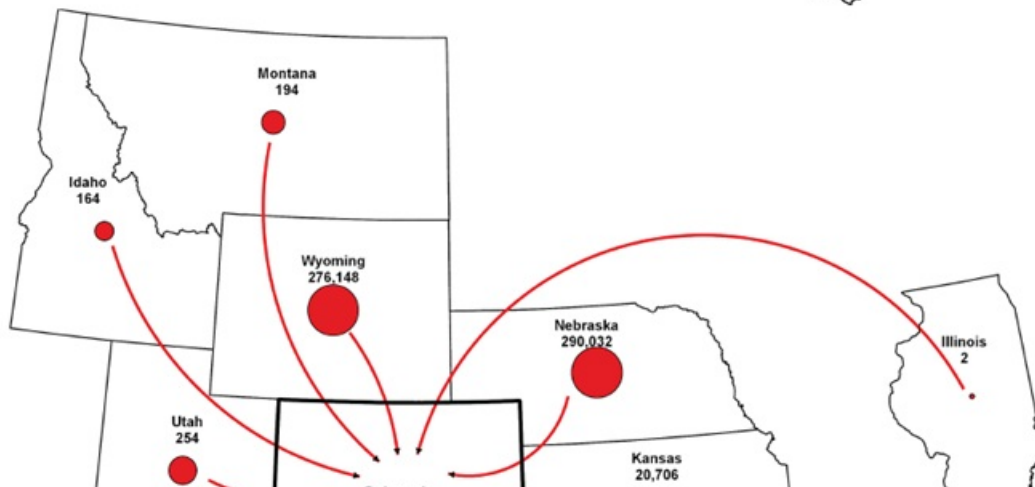
Colorado continues to generate waste tires at a slightly higher rate than the accepted national industry average of one waste tire passenger tire equivalent per person per year. According to data submitted to the department through annual reporting forms and using the nationally recognized standard to convert to PTE's, the waste tire generation rate in Colorado was **1.21 passenger waste tire equivalents per person per year in 2018**. This corresponds to a total of **6,168,629 newly generated waste tire passenger equivalents in Colorado in 2018**.

Waste tires continue to be received from and sent to neighboring states as you can see from the map below. Colorado received 697,661 waste tires from 10 states, with Nebraska, Wyoming and New Mexico sending 676,205 waste tires into the state. Colorado-generated waste tires were also sent to six states, with the majority sent to Utah for recycling.

Waste tire distribution out of Colorado



Waste tire distribution into Colorado



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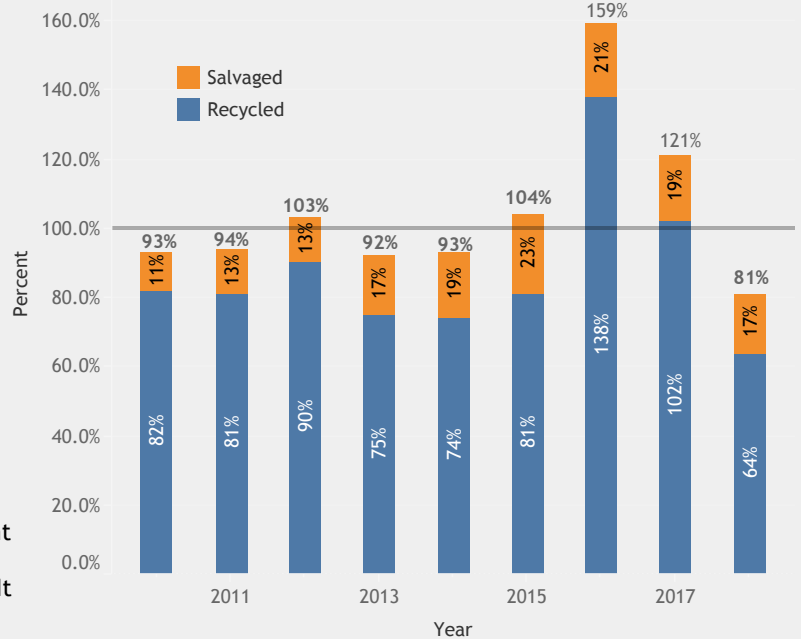
By the numbers

In 2018, the total number of newly generated waste tires generated in Colorado and imported from surrounding states was **7,617,166**. A small number of these waste tires were sent out of state to be recycled. However, only 81 percent of the new waste tires generated/imported were recycled or salvaged.

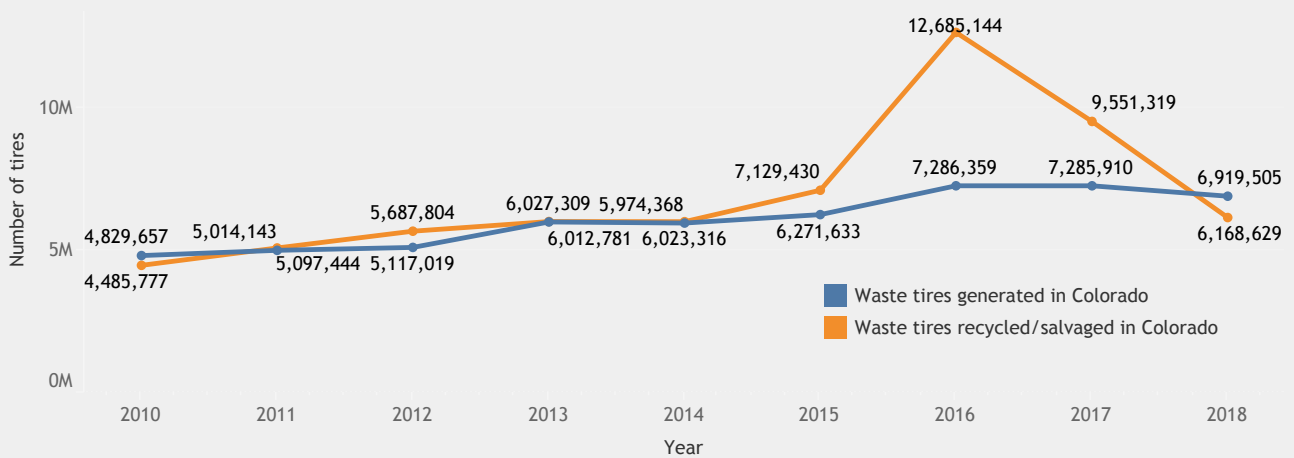
The "Percent of waste tires recycled and salvaged" graph to the right provides an annual comparison of waste tire recycling and salvaging rates of Colorado-generated and imported waste tires. This drop in the recycling/salvaging rate directly corresponds with the drop of end uses of waste tires (see 2018 Top 10 end uses graph on page one).

The "Waste tires recycled/salvaged vs. Colorado-generated waste tires" graph below reflects the number of waste tires recycled/salvaged versus the generation rate in Colorado. Up until 2018, the amount of waste tires recycled or salvaged has equaled or outpaced the waste tire generation rate in the state. It is also important to note that the End User Fund was also in existence during these years until it ended in 2018. This has resulted in an increase of almost 600,000 waste tires added to storage inventories (see "Change in storage inventories" graph below).

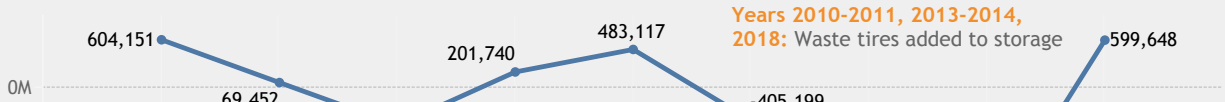
Percent of waste tires recycled and salvaged



Waste tires recycled/salvaged vs. Colorado-generated waste tires



Change in storage inventories



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Waste tires summary and outlook

With the sunset of the End User Fund in 2018 and the end-use rebates that the fund provided, the department believed that the end use of waste tires in Colorado would significantly decline. This did happen in 2018. In addition, the department believed that the end of the End User Fund on January 1, 2018, would cause a period of uncertainty within the waste tire markets, resulting in a potential increase of illegal waste tire disposal. We believed this would be particularly true if waste tire monofills were forced to comply with certain statutory limitations. Therefore the department took steps to prevent the threat of illegal dumping by instituting a policy that allowed waivers for waste tire monofills from certain statutory requirements so that waste tires could still be accepted at monofills (www.colorado.gov/pacific/cdphe/waste-tire-guidance-and-policy).

To increase the end use of waste tires and reduce storage inventories, the 2019 Colorado General Assembly enacted legislation that will bring back the End User Fund in 2020 to provide rebates to in-state end users of tire-derived products and retailers that sell tire-derived products. This legislation also brings back market development so the department can assist in bringing sustainable markets for the end use of waste tires and tire-derived products to Colorado.

CDOT update on TDA usage

As required by Section 30-20-1404, C.R.S., the department must report any findings or usage of tire-derived aggregates (TDA) by the Colorado Department of Transportation (CDOT). CDOT did not complete any tire-derived aggregate projects in 2018.

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Illegal Waste Tire Cleanup Grants

The Illegal Waste Tire Cleanup Grant program provides funding for the cleanup of illegal or abandoned waste tire sites. The department is notified of illegal waste tire sites by the public, local governmental agencies, other state agencies and by our Waste Tire Inspectors. The “Illegal Waste Tire Stockpile Identification Form” is available online for local governmental agencies to report potential illegal waste tire sites. A general complaint form is also available online for the public to report potential illegal waste tire sites.

Waste Tire Inspectors in the department inspect potential waste tire cleanup sites to assess the size of the pile, the physical lay-out of the site, if the site is an active or abandoned site and the risk to public safety and the environment in the immediate area. The department also determines if enforcement action against a liable party is appropriate for site cleanup.

To prioritize the order of abatement, sites are ranked. The site is assigned a ranking that is calculated on a point system based on several factors, such as the number of waste tires; nearby population; topography and infrastructure near the site; and stockpile characteristics. Illegal sites ranked “High” and “Medium” are considered priority abatement projects for the department. Table 1 lists identified illegal waste tire sites by county, ranking and the total estimated illegal waste tires (as of December 31, 2018).

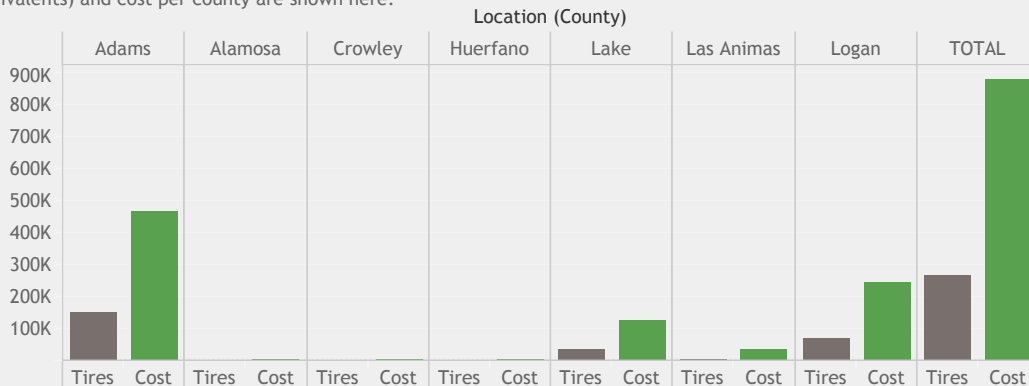
Currently the department has identified an additional 52 potential illegal waste tire sites in the state. Waste tire inspectors will inspect these sites in the coming months to determine eligibility for cleanup funds.

The department completed 11 illegal waste tire cleanups in 2018 in seven counties (Figure 1).

Table 1: Abatement List Ranking. An estimated total of **64,572** waste tires have been identified for needed removal across three Colorado counties.

| Location (County) | Ranking (High.. | |
|-------------------|-----------------|--------|
| Douglas | High | 62,222 |
| Pueblo | Medium | 1,250 |
| Las Animas | Low | 1,100 |

Figure 1. 2018 cleanups by county. The department completed 11 illegal waste tire cleanups in 2018. The total tires removed (passenger tire equivalents) and cost per county are shown here.



Collection events

In 2018, the department funded five collection events for counties and municipalities. These events allow the public to drop off unwanted tires at little or no cost. Table 2 shows a list of department-funded collection events, funds spent and waste tires collected. Due to continued interest from counties and municipalities, the department will continue to fund waste tire collection events in 2019. The request form is available at www.colorado.gov/cdphe/illegal-waste-tire-cleanup-grants.

Table 2. 2018 collection event details.

| Collection event location | Total cost | Total number of waste tires collected |
|---------------------------|------------|---------------------------------------|
| Alamosa County | \$2,492.00 | 652 |
| Black Hawk | \$700.00 | 565 |
| Commerce City | \$720.00 | 288 |
| Del Norte | \$3,500.00 | 1,000 |
| Steamboat Springs | \$650.00 | 147 |

Illegal waste tire removals by county, 2010 to 2018



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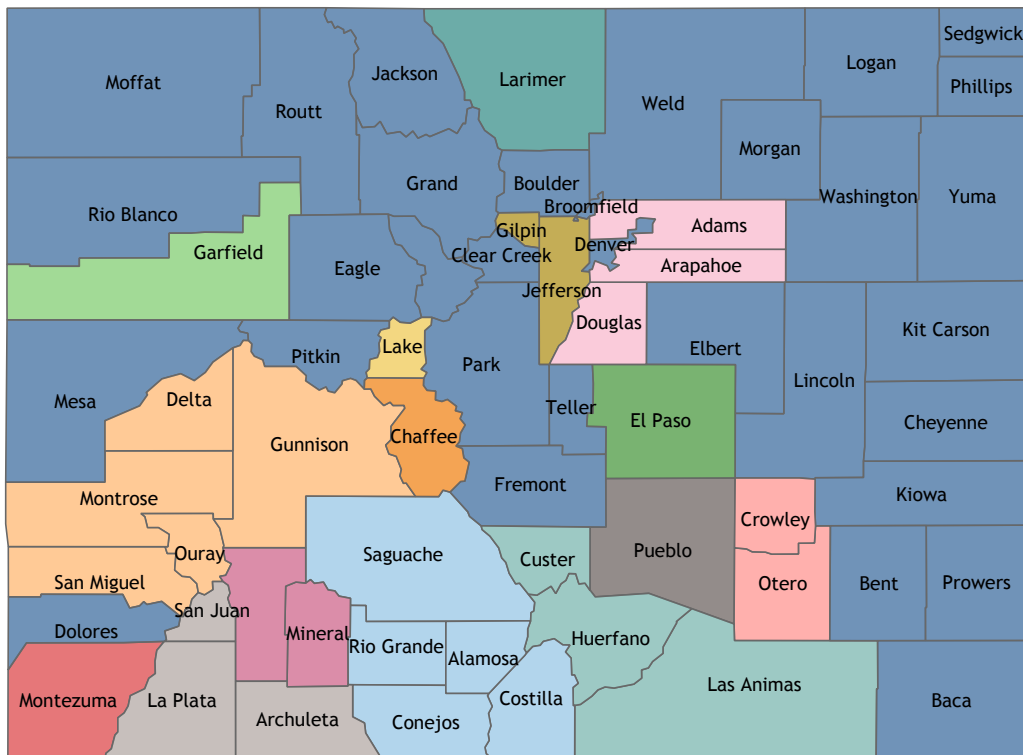
Waste Tire Inspection Grants

In 2018, 15 local health agencies participated in the Waste Tire Inspection grant program, in which local governments conducted waste tire inspections on behalf of the department. Local partners conducted **1,137 inspections** and technical assistance visits in 2018. The majority of these inspections and visits were of waste tire generators (e.g., retail tire shops), but many waste tire haulers and illegal waste tire sites were also evaluated.

Common issues identified by the local health agencies included a) facilities unregistered with the department, b) failure to submit the waste tire fee, c) generators not using a registered waste tire hauler, d) incomplete or no manifests kept on site, e) violating waste tire storage limits, f) litter and vegetation control and g) decals not being posted onsite. **The total amount reimbursed to local agencies in 2018 was \$145,811.**

The department's goal is to have partnerships with local governmental agencies in every county to conduct these inspections. These inspections help ensure that waste tires are properly managed in the state. The department conducted outreach in 2018 to promote this grant opportunity to local governmental agencies by presenting and exhibiting at the Colorado Environmental Health Association Annual Education Conference and presenting at the Local Environmental Health Directors Quarterly Meeting. The department will continue to conduct outreach to local health and other governmental agencies to expand the program statewide.

Inspection grants map



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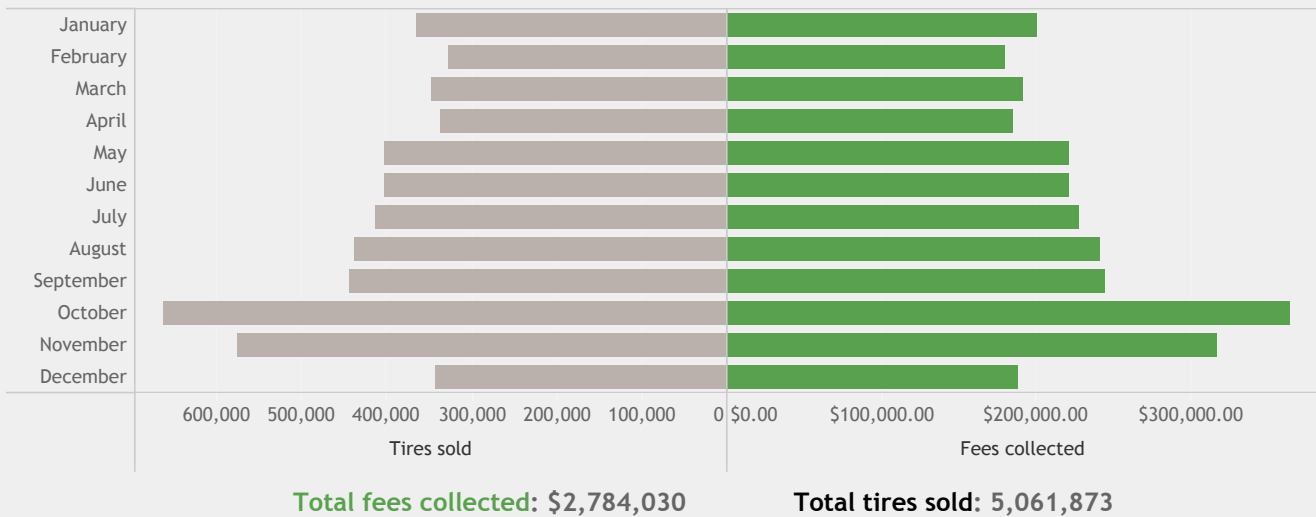
Fee and Registrants

Waste Tire Fee

The program collects a \$0.55 waste tire fee on the sale of each new motor vehicle tire and new trailer tire. In 2018, there were 1,721 active accounts for retailers who collect the waste tire fee. Nineteen of these accounts were on-line retailers. Three hundred and fifty-eight accounts were inactivated due to closure of the retailer or the retailer discontinued selling new tires. Additionally, the program added 404 new waste tire fee accounts. The graphic below shows the total number of new tires sold in the state and the total waste tire fees collected.

Due to the change in the law, on January 1, 2018 the \$1.50 waste tire fee went down to \$0.55. The program started notifying retailers in August in 2017 to prepare for this fee decrease. Notification postcards and emails were sent from August 2017 to December 2017 to retailers about this fee. The department's webpage and telephone on-hold message continued to provide information on the fee decrease until early 2018. Program staff and county contract inspection partners continued notifying retailers about the fee change through 2018.

Tires sold and fees collected per month, 2018



Inspections

Program staff conducted 233 waste tire inspections and compliance assistance visits in 2018. Of these 233 visits, 85 waste tire generator facilities selling new tires were evaluated for compliance with the requirements for submittal of the waste tire fee. Because of these inspections, new tire fee accounts were established for those facilities who had not previously submitted the waste tire fee. Additionally, the program issued thirty-two compliance advisories (informal enforcement actions) and eight compliance orders (formal enforcement actions for non-compliance with waste tire laws and regulations).

Program staff continued to process and issue waste tire registrations. The program issued 515 waste tire registrations in 2018. In addition, 2,744 businesses were registered with the waste tire program in 2018, ranging from waste tire generators to waste tire collection facilities.

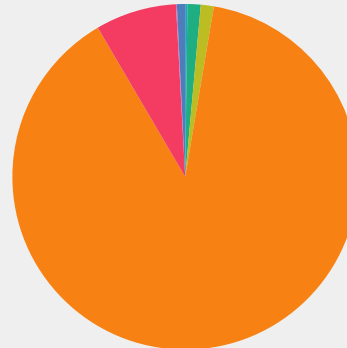


Waste tire registrants by type

2744 Total waste tire registrants

515 Total waste tire registrations processed and issued

Waste tire processors Waste tire collection facilities



- Mobile waste tire processors
- Waste tire collection facilities
- Waste tire end users
- Waste tire generators
- Waste tire haulers
- Waste tire monofills
- Waste tire processors

*One registrant can be registered in multiple categories.

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2018 Waste Tire Conference



Waste Tire Conference

In October 2018, the department hosted the fifth-annual Waste Tire Conference was held in Greenwood Village, Colorado. Twenty-two speakers provided the latest information on waste tire management, waste tire fire prevention and enforcement, laws and regulations, market development and beneficial end use of waste tires. Presentations included an overview of the U.S. tire recycling industry, trends in recycled rubber products, an update on the crumb rubber in synthetic turf studies from the EPA, tire-derived aggregate usage in heat-pump systems, finding a second life for tires and a state regulator panel discussion. There were 150 conference attendees, including waste tire processors, retailers and end users, state and local regulators, transportation officials, landfill operators, equipment dealers, and industry consultants. Additionally, there were 11 vendors that exhibited and displayed their products.

US Scrap Tire Workgroup

The US Scrap Tire Workgroup met before the conference. The workgroup is an unincorporated association of diverse stakeholders from state regulatory agencies, industry, academia and other interested parties who work cooperatively to address critical scrap tire issues facing the country. The workgroup discussed pyrolysis processing and products, an overview of a Colorado monofill, how to investigate illegal waste tire dumping, training opportunities from the Colorado Local Technical Assistance Program and updates from the six US Scrap Tire Workgroup subcommittees. Based on positive feedback, a sixth waste tire conference is scheduled for 2020.



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Milestone of 1 million waste tires cleaned up

The Colorado Department of Public Health and Environment has now removed more than 1 million tires from illegal tire dump sites as part of a program to reduce the negative impacts waste tires can cause to public health and the environment.

Three large cleanups in 2018 removed nearly 100,000 tires. In addition, the department supported a fourth project that was one of the largest waste tire cleanups in the program's history, which took place in Bennett. That cleanup alone removed nearly 150,000 illegally disposed waste tires.

"CDPHE provided critical assistance to the State Land Board for the tire removal near Bennett," said Matt Pollart, North Central District manager for the State Land Board. "Thanks to the Waste Tire Program, this parcel of state trust land will contribute to the funding of K-12 education in Colorado for years to come." Half the money the State Land Board generates through leasing trust lands goes to the Building Excellent Schools Today program.



The department oversaw the removal of 27,000 tires from this location near Leadville.



Soccer fields built with a base of recycled crumb rubber from waste tires.