



Used Tire Generation, Recycling, and Reuse in Washington for 2005

Abstract

Ecology works with private sector stakeholders to annually track tire recycling and reuse rates in the state (RCW 70.95.545). The annual increase or reduction rate is provided to the Legislature in this annual update to the Scrap Tire Report, which was prepared in 2002 (<http://www.ecy.wa.gov/biblio/0207029.html>).

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Used Tire Generation, Recycling, and Reuse in Washington for 2005

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Recycling and Reuse Highlights

Used tire generation, recycling, and reuse increased from 2004 to 2005:

- Washington generated 3,216 tons more used tires in 2005.
- Reporting of recycled, reused, and disposed used tires increased by 4,713 tons.
- A total of 577,294 more used tires were reported as reused or recycled.

Estimated Used Tire Generation in 2005

Over 6.6 million vehicles licensed in Washington in 2005 generated approximately 4.9 million used tires. Based on national averages, each licensed passenger vehicle was assumed to generate one used tire for the year. Also using national averages, other vehicles, like trucks, trailers, motorcycles, were assumed to generate 0.4 or 0.25 used tires per year.

Used Tire Recycling, Reuse and Disposal in 2005

The table below tracks the reported recycling, reuse, and disposal for used tires in 2005. This information came from a combination of annual reports.

- Annual disposal reports from landfills, transfer stations, drop boxes, tire haulers, tire businesses, and tire storage sites.
- Reports and survey responses from recycling facilities.

Breakdown of Used Tires in Washington for 2005

Reported to Ecology	Tons of Used Tires ¹	Number of Used Tires ²	Percent
Retreaded ³	4,089	240,529	5%
Recycled	53,777	3,163,353	63%
Tire Derived Fuel	5,167	303,941	6%
Landfill Disposal	22,446	1,320,353	26%
Total Reported	85,479	5,028,176	100%

¹ Assumes an average weight of 34 lbs per tire: passenger car tires assumed to weigh 20 lbs; truck tires assumed to weigh 100 lbs.

² Assumes 40% of trucks use new tires and 60% of trucks use retreaded tires.

³ Retreaded tires are those that have the used tread removed and a new tread bonded to the tire casing.

The total number of used tires reported to Ecology for 2005 is greater than the number of used tires generated for the year. This is because more tires from storage sites have been recycled this year.

Of the 5,028,176 used tires reported in Washington in 2005, 5% were retreaded, 63% were recycled, 6% were used as tire derived fuel and 26% were reported as disposed of in permitted landfills.

Used Tire Generation Change from 2004 to 2005

Generation of used tires in Washington increased by 3,216 tons, or 4%, from 2004 to 2005. These estimates are based on the vehicles licensed in the state and the assumed used tires generated by vehicle type (refer to the explanation in the Used Tire Generation in 2005 subsection).

Breakdown of Used Tire Generation Changes

Estimated Generation	2004 Totals	2005 Totals	Increase
Tons of Used Tires ⁴	80,766	83,982	3,216
Total Number of Used Tires	4,750,932	4,940,128	189,196

Used Tire Recycling, Reuse and Disposal Change from 2004 to 2005

In 2005 there were 3,838 more tons of used tires reported as retreaded than in 2004, increasing from 0.3% to 5% of the annual total. Recycled tires showed an increase of 16,209 tons, increasing from 47% to 63% of the total. There were 10,233 fewer tons of tires burned for fuel in 2005 than in 2004, decreasing from 19% to 6% of the total. Used tires sent to landfills increased by 7,200 tons for 2005, increasing from 19% to 26% of the total.

Breakdown of Used Tire Recycling, Reuse and Disposal Changes

Reported to Ecology	2004 Tons Used Tires ⁴	2005 Tons Used Tires ⁴	Change in Tons
Retreaded ⁵	251	4,089	3,838
Recycled	37,568	53,777	16,209
Tire Derived Fuel	15,400	5,167	-10,233
Landfill Disposal	15,246	22,446	7,200
Unknown Uses	12,301	NA	-12,301
Total Tons of Used Tires	80,766	85,479	4,713

Reported tire use in 2004 included 12,301 tons of tires with unknown uses. This number is the difference between the estimated used tires generated by licensed vehicles and the used tires reported to Ecology. This category is not included in 2005 because the total number of used tires

⁴ Assumes an average weight of 34 lbs per tire: passenger car tires assumed to weigh 20 lbs; truck tires assumed to weigh 100 lbs.

⁵ Retreaded tires are those that have the used tread removed and a new tread bonded to the tire casing.

reported to Ecology exceeds the estimated used tires generated. This difference is likely due to more tires from storage sites being recycled this year.

Used Tire Recycling, Reuse and Disposal from 2002 to 2005

The following table provides the annual reported uses of used tires in tons and percent from 2002 to 2005.

Breakdown of Reported Uses of Used Tires from 2002 to 2005

Reported Uses	2002		2003		2004		2005	
	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent
Retreaded ⁶	1,170	2 %	12,976	18 %	251	<1 %	4,089	5 %
Recycled	27,102	52 %	27,753	38 %	37,568	55 %	53,777	63 %
Tire Derived Fuel	2,817	5 %	9,664	13 %	15,400	23 %	5,167	6 %
Landfill Disposal	21,273	41 %	22,226	31 %	15,246	22 %	22,446	26 %
Totals	52,363	100%	72,619	100%	68,464	100%	85,479	100%

In 2005 there were 2,919 more tons of used tires reported as retreaded than in 2002, increasing from 2% to 5% of the annual total. Recycled tires showed an increase of 26,674 tons from 2002 to 2005, increasing from 52% to 63% of the total. There were 2,350 more tons of tires burned for fuel in 2005 than in 2002, increasing from 5% to 6% of the total. There were 1,173 more tons of used tires reported sent to landfills in 2005 than in 2002. Due to the increase in the total number of used tires reported, this is a decrease from 41% to 26% of the total.

The greatest overall change in reported used tire use is the increase in tire recycling from 27,102 tons in 2002 to 53,777 tons in 2005, which is a 98% increase. The reported volume of tires disposed of in landfills remained relatively steady over the past 4 years, averaging about 20,300 tons. However, the percent of landfilled used tires decreased during that period. The total reported uses of used tires increased by 33,116 tons from 2002 (52,363 tons) to 2005 (85,479 tons), which is a 63% increase.

Ecology Tire Program

Ecology is developing a Tire Program to work on used tire issues in Washington State. This program currently consists of a waste tire pile cleanup program for the estimated 3.1 million tires located in unauthorized sites across the state. Tire hauler licensing enforcement will be pursued in 2007. Ecology is also evaluating the possibility of providing financial support to counties for tire storage enforcement programs and pilot recycling projects. Ecology will continue to track the reported uses of used tires and annually update the Legislature.

⁶ The increase in retreaded tires in 2003 is due to data tracking changes by the businesses that report to Ecology. The number of retreaded tires was tracked differently by business in 2003, which resulted in the reporting increase for that year