STATE OF COLORADO

Colorado Department
of Public Health
and Environment

Fourth Annual Report to the Transportation Legislation Review Committee on the Status of Waste Tire Recycling In Colorado for Calendar Year 2007

Submitted to the Transportation Legislation Review Committee
by the Division of Hazardous Materials and Waste Management
Colorado Department of Public Health and Environment
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Fourth Annual Report to the Transportation Legislation Review Committee on the Status of Waste Tire Recycling in Colorado Calendar Year 2007

This fourth annual report on waste tire recycling is transmitted to the Transportation Legislation Review Committee (the Committee) pursuant to House Bill 04-1428 and 25-17-202.7, C.R.S. The statute requires the Colorado Department of Public Health and Environment (the Department) to issue a report to the Committee on or before July 1st each year including the total number of waste tires recycled in the state according to information submitted to the department pursuant to the Regulations Pertaining to Solid Waste Sites and Facilities (6 CCR 1007-2, Sections 8.4.1(B) and 10.2.2.)

Executive Summary:

Calendar year 2007 marks the fourth year the division has compiled data related to the number of waste tires collected at end-processing facilities in the state of Colorado. End-processing facilities are facilities that recycle and reuse tires, or place tires in monofills. We anticipate the tires stored in the monofills are reused at later date for tire-derived fuel; rubber crumb for roadways, playgrounds and sports fields; or for other activities identified in Figure 3 below. The division's confidence in the accuracy of the reported data increases each year, as we annually review our survey methods in an attempt to improve the quality of the data we receive.

Colorado recycled 3,725,387 tires in 2007, equating to 82 percent of the tires generated that year. This volume represents a significant increase from the recycling rate of 73 percent in 2006. A portion of this increase in the recycling rate is likely due to an improvement in our data tracking and evaluation methodology and efforts, in conjunction with training industry in the more accurate use of our tire reporting forms.

RECYCLING 3,725,387 TIRES CAN BE EQUATED TO THE FOLLOWING:

- Preventing the use of 151,990,393 KwH of electricity; or
- Preventing the emissions from electricity used by 15,651 homes for one year; or
- Preventing the use of 274,805 barrels of oil; or
- Preventing the emissions from 21,642 passenger vehicles for one year

Using 3,725,387 tires as a substitute for raw materials is equal to preventing 118,166 metric tons of CO_2 from entering the atmosphere.

(These numbers include all methods of recycling except tires reused as tire derived fuel)

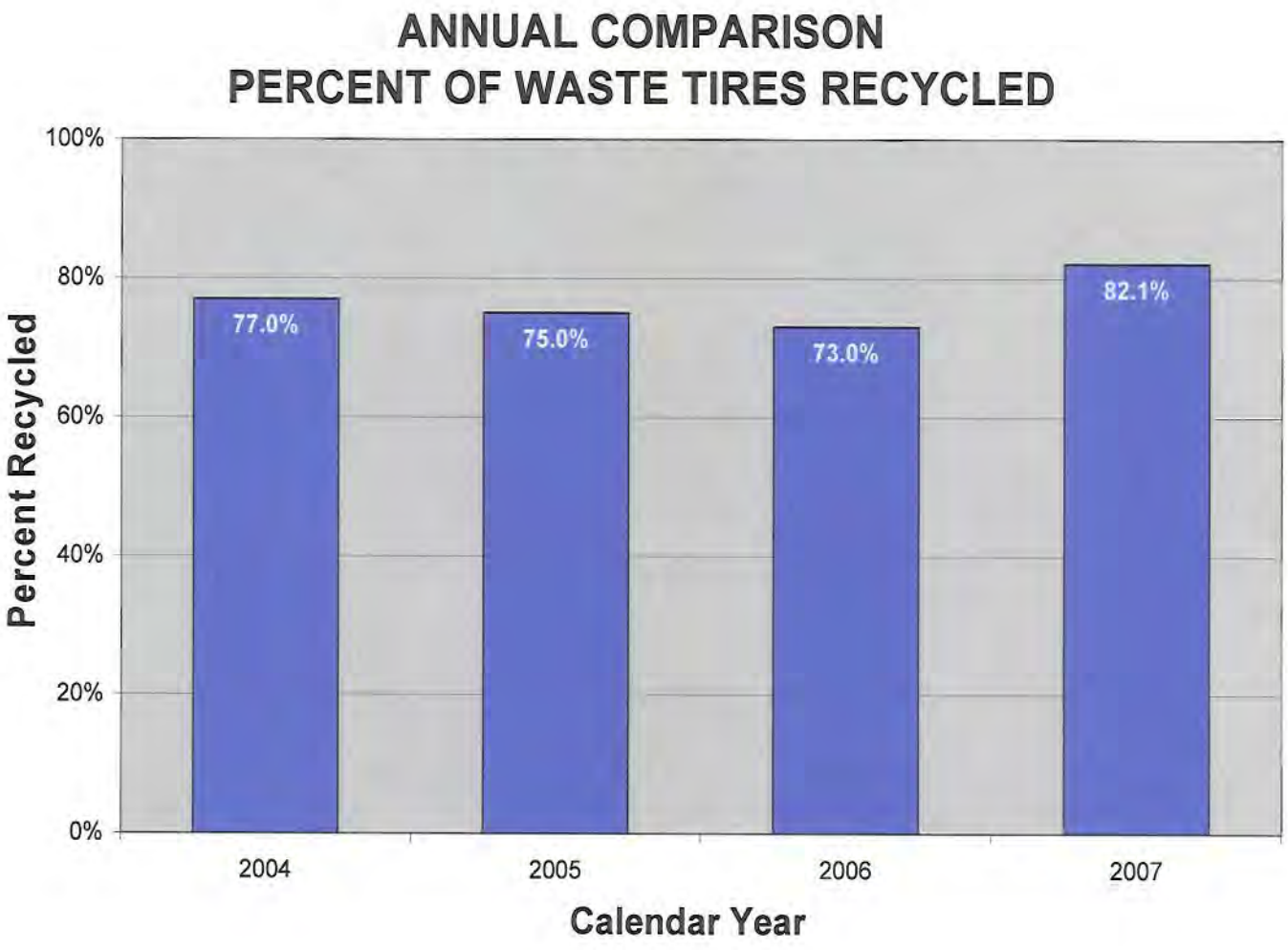
In addition, using waste tires as tire derived fuel provided the following benefits:

- Prevented the use of 22,514 tons of coal –
  - or enough natural energy resources to power 13,045 homes for one year
- Diverted 1,801,100 tires from monofill disposal

Figure 1

A total of 3,725,387 waste tires (or scrap tires) were recycled in Colorado during calendar year 2007. As shown in Figure 1 (above), 82 percent of the waste tires generated during this period were recycled. The remaining 18 percent of waste tires generated were either sent for long-term storage in a permitted tire monofill or added to inventory storage at tire recycling facilities to await further processing.

Figure 2



Based on the reported number of scrap tires received by waste tire facilities, about 4,536,903 waste tires were generated in Colorado during calendar year 2007. Considering Colorado's population of approximately 4,753,377 people, this estimated number approximates the accepted nationwide industry standard that predicts a tire generation rate of 1 waste tire/person/year.

The division gathers this information through annual reporting from waste tire collection, recycling and storage facilities. The division continued outreach efforts to educate tire facilities regarding their compliance and reporting responsibilities. Furthermore, the regulated community took significant strides to improve inventory accounting methods and reporting accuracy. Therefore, the division believes this submittal is the most accurate waste tire recycling report to date.

Figure 3

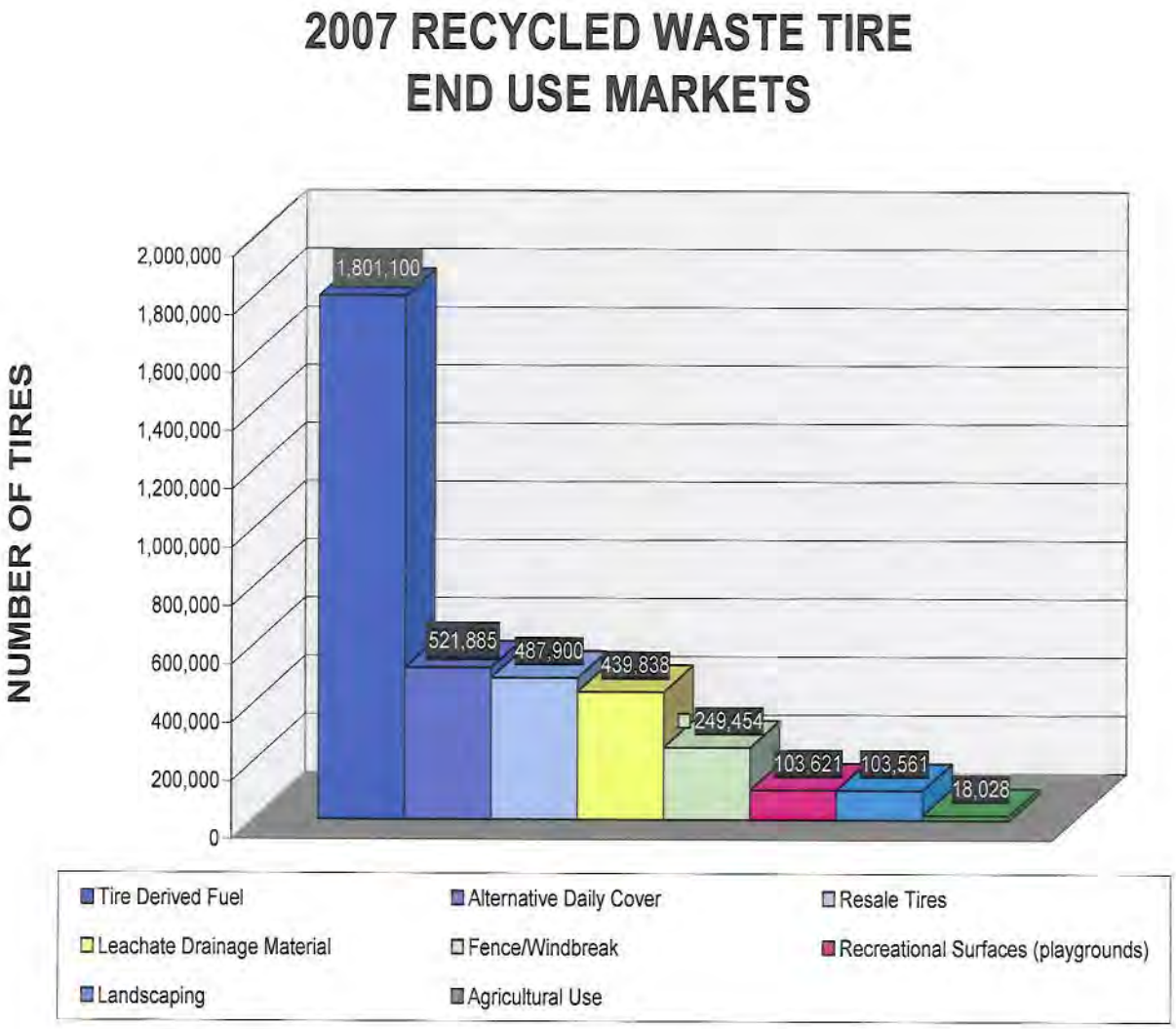


Figure 3 (above) captures the end-use markets for waste tires recycled during calendar year 2007. Of the nine end-use markets identified, the top five end-use markets included burning waste tires as tire-derived fuel, the use of tire shreds as alternative daily cover at sanitary landfills, the resale of whole tires for reuse, the use of tire bales in fences and windbreaks and the use of tire shreds as the leachate drainage layer in private and government-owned sanitary landfills.

Figure 4

Figure 4 (above) reflects the number of waste tires in storage at designated tire facilities statewide at the end of calendar year 2007. As this chart illustrates, the on-site waste tire inventory increased by 800,000 tires during the year. Some tire-handling facilities in the state increased their storage inventories while awaiting further processing and development of end-use markets. Other tire facilities decreased their storage inventory by shipping tires off-site for reuse. The number of tires going into final end-use markets increased from 2,857,057 in 2006 to 3,725,387 in 2007, representing a 30.4 percent increase in the number of end-use tires between 2006 and 2007. Accordingly, the division saw a commensurate drop in the number tires entering monofill storage.

2005 Legislation

Two bills were passed during the 2005 legislative session that directly affect the management of waste tires in Colorado. The Waste Motor Vehicle Tire Hauler Act (HB 05-1126) requires the registration of commercial transporters of waste motor vehicle tires. The intent of this legislation is to ensure transportation and delivery of waste tires to proper storage and recycling facilities and to minimize the illegal dumping of tires. Senate Bill 05-141 regulates the disposal of residentially generated waste tires. Effective July 1, 2007, this bill limits the disposal of residentially generated tires in landfills. The combined result of these bills is intended to ensure waste tires are commercially transported to appropriate facilities, and that more of these tires are ultimately recycled. Future data collection will demonstrate the net effects of these two bills.

Future Methods for Data Collection

Although great strides have been made in the assessment of the state waste tire inventory, troublesome issues remain. The division found errors in the tracking of tires between waste tire haulers and waste tire collection facilities. It appears the parties involved do not properly document the amounts of tires exchanged. This situation results in erroneous data reporting to the division, and leads to an unclear view of the flow of waste tires throughout the state.

The division is reviewing alternative methods for collecting data on waste tires. One proposed method is using a tire manifest program that requires haulers to have the waste tire generators and waste tire processing facilities provide signatures, dates and quantities for transactions. The hauler would then be responsible for sending copies of the manifests to the division each quarter.

One specific problem encountered this year was the underreporting of tires received by one of the state's largest monofills. This facility underreported by approximately 20,000 scrap tires. Problems of this nature could be addressed with proof of signatures and specific dates and quantities for deliveries if a waste tire manifest program were in place.

The division also is developing additional outreach and communication methodologies and strategies. We hope to implement these efforts over the next year in an effort to facilitate compliance with the applicable laws. As a result, we hope to improve the accounting and tracking of waste tires in Colorado.