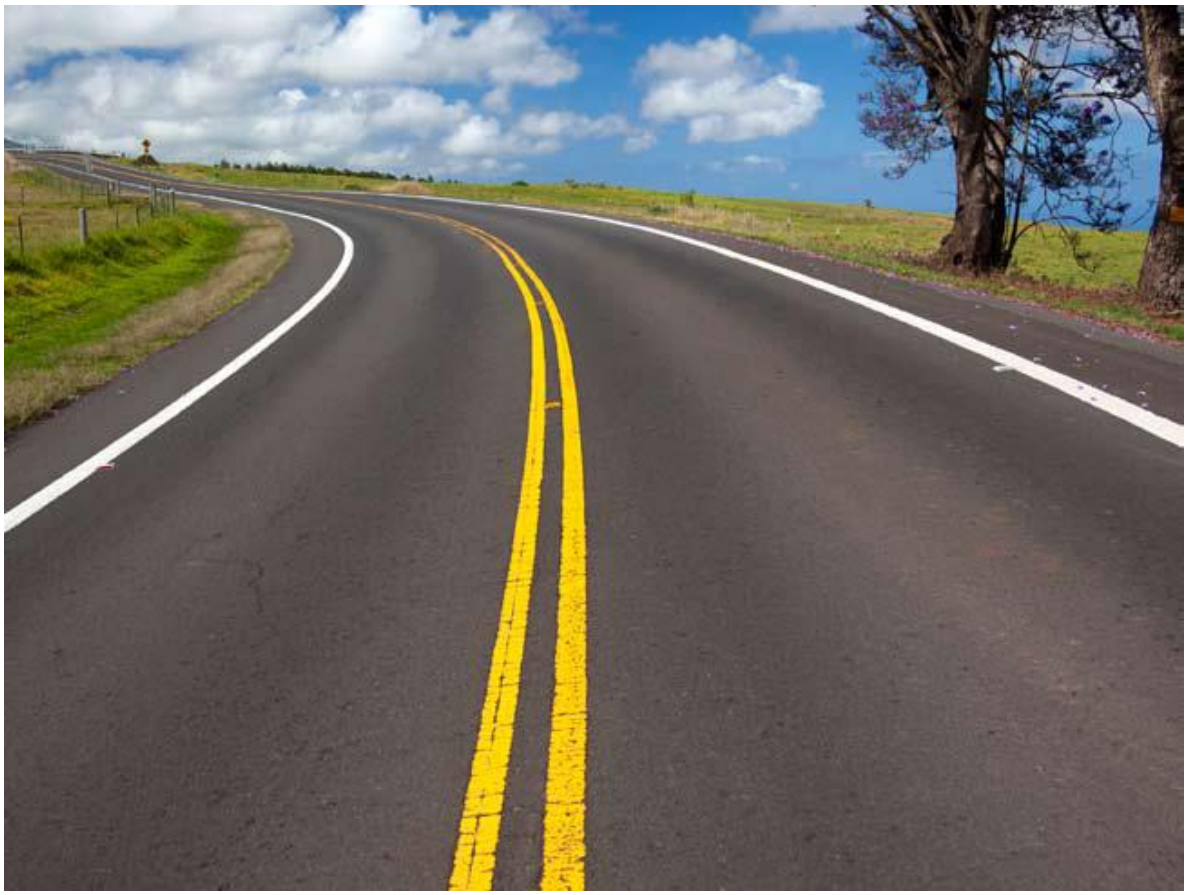
Information Series 138

Annual Asphalt Pavement Industry Survey on

Recycled Materials and Warm-Mix Asphalt Usage: 2009–2012



NATIONAL ASPHALT PAVEMENT ASSOCIATION

Annual Asphalt Pavement Industry Survey on Recycled Materials and Warm-Mix Asphalt Usage: 2009–2012

Executive Summary

The 2012 survey results show that the asphalt pavement industry continues to improve its outstanding record of sustainable practices by further increasing the use of recycled materials and warm-mix asphalt (WMA). The use of recycled materials such as reclaimed asphalt pavement (RAP) and reclaimed asphalt shingles (RAS) conserve raw materials and reduce overall asphalt mixture costs while WMA technologies improve conditions for achieving performance and long life, conserve energy, reduce emissions from production and paving operations, and improve conditions for workers.

The objective of this survey was to quantify the use of recycled materials, including RAP and RAS, and WMA produced by the asphalt pavement industry. The National Asphalt Pavement Association (NAPA) conducted a voluntary survey of asphalt mixture producers in the United States and state asphalt pavement associations (SAPAs). The survey was broken into five sections: general information, RAP, RAS, WMA, and other recycled materials. Asphalt mix producers from 48 states and Puerto Rico completed the 2012 survey. No survey information was available for the District of Columbia, North Dakota, or New Mexico. A total of 213 companies/branches with 1,141 plants are represented in the 2012 survey.

The following are highlights of the 2012 survey:

- The asphalt industry remains the country's number-one recycler by recycling asphalt pavements at a rate of over 99 percent. About 98 percent of the contractors/branches reported using RAP in 2012, the same as in 2011. The amount of RAP used in asphalt mixtures was 68.3 million tons in 2012, a 22.0 percent increase over the tons used in 2009 (56 million tons) and over a 2 percent increase over the tons used in 2011 (66.7 million tons). However total asphalt tonnage was down from 2011 to 2012, so in term of percent of total tonnage there was a 4 percent increase in the use of RAP from 2011 to 2012. Assuming 5 percent liquid asphalt in RAP, this represents over 3.4 million tons (19 million barrels) of asphalt binder conserved. Similar to 2010 and 2011, less than a 0.3 percent of RAP was sent to landfills.
- For the first time in the survey history more RAP was used than was collected. This is primarily due to less RAP being collected than in the prior two years. For 2010 and 2011 an estimated 73.5 and 79.1 million tons of RAP were accepted, respectively. For 2012, 71.3 million tons of RAP were accepted for a 10 percent drop from 2011 to 2012.
- Use of both manufacturers' scrap and post-consumer shingles increased from nearly 1.2 million tons in 2011 to nearly 1.9 million tons in 2012, a 56 percent increase. Assuming a conservative asphalt content of 20 percent for the RAS, this represents 380,000 tons (2.2 million barrels) of asphalt binder conserved. As with RAP, this is the first time the amount of scrap shingles collected was less than the amount used for all purposes. This is due to fewer scrap shingles being collected by asphalt mix producers in 2012 than the prior two years, producers buying from shingle processors, and an increase in the amount of RAS used in asphalt mixtures.
- Information on other recycled materials was obtained for the first time in this year's survey. The most commonly used materials in asphalt mixtures were blast furnace slag, steel slag, and ground tire rubber. Less commonly used recycled materials included; fly ash, bottom ash, foundry sand, cellulose fiber, and glass.
- Total tonnage of WMA is estimated at 86.7 million tons in 2012. This was over a 26 percent increase over 2012 WMA tonnage (68.7 million tons). In 2012, WMA was about 24 percent of the total asphalt mixture market. Plant foaming is used most often in producing WMA, with more than 88 percent of the market; additives accounted for about 12 percent of the market.