

News From  
**The Colorado Department  
of Transportation**

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## **CDOT, CAPA Announce Asphalt Greening Measures on Earth Day**

*CDOT Turning Construction Green – Energy Savings to be  
Realized on Construction Projects*

STATEWIDE – An Earth Day announcement focuses on a joint effort of the asphalt industry of Colorado and the Colorado Department of Transportation. A change in contract specification requirements will result in less energy being used on certain CDOT asphalt paving projects.

Lime is added to CDOT hot asphalt mixes to create durable pavements. Currently, CDOT requires a minimum amount of water to be added to the aggregate to ensure proper performance of the blended materials. Adding water requires additional fuel to dry and produce the final hot-mix asphalt materials through the production plant. Because not all mixes require this additional moisture to ensure performance, CDOT and CAPA partnered to modify the specifications to make exceptions for those mixes.

To help reduce this energy usage, a change was made in contractor requirements. Asphalt contractors will now have more responsibility for quality control as it relates to reductions in water and fuel used the production plant.

“This change is a great example of CDOT working with the construction industry of Colorado to conserve energy and water on our highway projects without sacrificing quality,” said Thomas Peterson, P.E., executive director of the Colorado Asphalt Paving Association. “Everyone benefits when costs are reduced and energy is saved.”

It is estimated that the change will result in a 5 to 10 percent energy savings on many CDOT asphalt projects this construction season and into the future.

“We are looking forward to the anticipated savings generated by these new requirements,” said CDOT Materials & Geotechnical Branch Manager Jim Zufall.

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*CDOT Greening, page 2 of 2*

In addition to this new contractor specification, CDOT has implemented several other greening measures across the state.

### **Recycled/Reclaimed Asphalt**

CDOT allows contractors to use up to 25 percent Reclaimed Asphalt Pavement (RAP) in lower layers of pavement and up to 20 percent in the top overlay. In 2008, this resulted in 80,000 tons of RAP in asphalt mixes used on paving projects statewide: a 300 percent increase over 2007. In addition, in 2008 cold-recycling processes used by contractors enabled CDOT to reuse 95,000 tons of asphalt pavements and hot-recycling processes reused 140,000 tons of asphalt pavements.

### **Recycling & Reductions in Concrete Paving Mixes**

“In 2008 we used about 71,000 tons of recycled concrete as aggregate base coarse,” Zufall said. “We also allow flyash—a waste product from coal-fired power plants—to be substituted for cement in concrete production. We used approximately 23,000 tons of flyash in 2008.”

CDOT allows up to 10 percent limestone to be substituted for cement in concrete mixes, and is partnering with the cement industry to develop specifications that could ultimately result in even greater reductions in cement usage, possibly as high as a 40 percent reduction. Approximately 1 ton of CO<sub>2</sub> is reduced for every 1 ton reduction in the use of cement.

When producing bridge deck concrete, CDOT used approximately 90 tons of silica fume as a substitute for cement. Silica fume is a waste product of the production of silicon.

### **Researching More Greening Opportunities**

CDOT is conducting research in its northwest region (Region 4) on the use of rubberized binder in its asphalt pavement. If successful, the Department will continue to help reduce the number of waste tires in the state.

Finally, CDOT has funded a research project at Colorado State University that will investigate the use of ground-up tire rubber in highway embankments to control expansive soils.

“We’re continuously researching and re-adjusting our specifications to reduce, reuse and recycle,” Zufall said. “As a large, statewide agency we want to do our share.”

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