

## Pavement

NOVEMBER 2024

### Project Title:

Evaluation of Fine Dry Rubberized Asphalt Mixes and Inclusion in Performance-Related Specifications

**Task Number:** 4215

**Start Date:** November 7, 2023

**Completion Date:** September 30, 2026

### Task Manager:

Junxia Wu  
Transportation Engineer  
[Junxia.Wu@dot.ca.gov](mailto:Junxia.Wu@dot.ca.gov)

## Evaluation of Fine Dry Rubberized Asphalt Mixes and Inclusion in Performance-Related Specifications

To evaluate use of fine dry rubber in dense-graded hot mix asphalt (HMA) and to develop design criteria, guidance, and specifications.

### WHAT IS THE NEED?

This task intends to develop recommendations for incorporating recycled tire rubber in dense-graded HMA. This includes achieving sustainable asphalt mixes with potential cost savings, improved pavement performance, and environmental benefits. The task builds on previous research, addressing a need for more effective and eco-friendly practices in asphalt technology, benefiting the California Department of Transportation (Caltrans) and contributing to the advancement of sustainable infrastructure solutions.

### WHAT ARE WE DOING?

This project work includes evaluating rubber technologies for adding recycled tire rubber to HMA, developing new HMA designs that maximize the use and performance benefits of recycled tire rubber, and validating the constructability based on a pilot project.

This task includes the following subtasks:

- Laboratory testing of HMA with rubber.
- Developing improved HMA designs with rubber.
- Pilot implementation in the field.

### WHAT IS OUR GOAL?

The goal of this task is to develop recommendations for using recycled tire rubber in dense-graded HMA, and to suggest specification language for implementation in balanced mix design, where the same or better life cycle cost and environmental impact can be achieved.



DRISI provides solutions and knowledge that improves California's transportation system.



## WHAT IS THE BENEFIT?

The use of recycled tire rubber may reduce the cost of HMA production because the recycled tire rubber can be used as an asphalt binder extender, and it is cheaper than the asphalt binder. The use of recycled tire rubber is expected to make asphalt mixes more sustainable too. Moreover, the addition of rubber to HMA is expected to enhance the performance of asphalt pavement by improving resistance to cracking and rutting.

## WHAT IS THE PROGRESS TO DATE?

The research team has made the following progress to date:

- Laboratory testing of rubberized HMA has been completed.
- Optimization of rubberized HMA design is ongoing.
- Coordination of the Brooks-Levee Road Rubberized Hot Mix Asphalt-Dense Graded (RHMA-D) pilot is ongoing, with construction anticipated in November 2024.