

## Pavement

**NOVEMBER 2024**

**Project Title:**

Partnered Pavement Research Center (PPRC) 23: Mechanistic-Empirical Design

**Task Number:** 4226

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## Piloting of Cold Recycling and New Asphalt Base Designs and Interlayers for Concrete Pavements

Develop recommendations for designing new hot mix asphalt (HMA) bases and interlayers, including high recycled asphalt pavement (RAP) content and recycled tire rubber.

### WHAT IS THE NEED?

This task aims to improve the design and performance of jointed plain concrete pavement and continuously reinforced concrete pavement. The objective is to develop recommendations for designing new hot mix asphalt (HMA) bases and interlayers, including high recycled asphalt pavement content and recycled tire rubber. The California Department of Transportation (Caltrans) is involved in this task to enhance the sustainability of asphalt bases, optimize pavement design, and improve economic, user, and environmental advantages, with the aim of facilitating statewide implementation.

### WHAT ARE WE DOING?

The main focus of this task is to develop recommendations for designing new HMA bases for jointed plain concrete pavement and continuously reinforced concrete pavement. Interlayers (bond-breakers) to be used between jointed plain concrete pavement slabs and lean concrete bases are considered. The new HMA may include high recycled asphalt pavement content and/or recycled tire rubber.

This task includes the following subtasks:

- Subtask 1: Monitoring of concrete slab test track
- Subtask 2: Laboratory testing of standard concrete pavement bases
- Subtask 3: Design and testing of improved base materials and interlayers
- Subtask 4: Pilot implementation in the field



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## WHAT IS OUR GOAL?

The main goal of this task is to develop recommendations for designing sustainable HMA bases for jointed plain concrete pavement and continuously reinforced concrete pavement. This involves optimizing designs, testing with high recycled asphalt pavement content and recycled tire rubber, conducting performance evaluations, and implementing pilot projects in the field. The main aim is to enhance the overall performance and sustainability of California's pavement systems.

## WHAT IS THE BENEFIT?

The benefits of this task include implementing sustainable asphalt bases; optimizing pavement designs for better performance; reducing maintenance costs; improving user satisfaction through smoother and safer roads; minimizing environmental impacts; and improving pavement infrastructure practices statewide.

## WHAT IS THE PROGRESS TO DATE?

The research team has completed the laboratory testing of standard concrete pavement bases.

Continuous monitoring of the concrete slab test track is required.

Twenty-five percent of the work has been accomplished.

The activity will continue into the next quarter. Design and testing of base materials and interlayers are also scheduled to resume.