

## Pavement

MAY 2025

### Project Title:

Partnered Pavement Research Center (PPRC) 23: Performance Related Specifications

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## Continued Support for Implementation of Performance Related Tests and Specifications for Balanced Mix Design, Increased Recycling of Asphalt Mixes, and Integration of Mix Design and Structural Design

Facilitating the adoption of Balanced Asphalt Mix Design through improved performance-related tests and specifications.

### WHAT IS THE NEED?

The Balanced Asphalt Mix Design (BMD) approach is essential for ensuring that asphalt mixes used by the California Department of Transportation (Caltrans) meet performance expectations, especially with diverse asphalt mix types and evolving industry standards. Optimizing Performance Related Tests (PRTs) is necessary to speed up the approval process, making it more efficient and cost-effective for both large-scale rehabilitation projects and routine endeavors. The project also aligns with Caltrans' commitment to sustainability by evaluating a wider range of asphalt mixes, including those with recycled materials, thus reducing life cycle costs and minimizing environmental impacts.

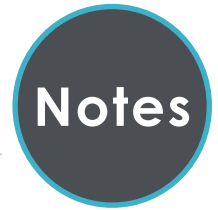
### WHAT ARE WE DOING?

This task focuses on:

- Refining existing PRTs for faster initial mix approvals and developing alternative PRTs for routine projects.
- Evaluating high recycled content and other innovative mix types using PRTs.
- Supporting full-scale asphalt rehabilitation/reconstruction projects with Performance Related Specifications (PRS).
- Developing alternative test methods for fatigue cracking.



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- Providing recommendations for BMD tests and specifications, and communication support for BMD implementation.

## WHAT IS OUR GOAL?

The primary goal of this task is to implement a BMD strategy that reduces life cycle costs, minimizes environmental impact, and enhances the sustainability of asphalt-surfaced pavements on Caltrans' state highway network.

## WHAT IS THE BENEFIT?

This task aims to streamline the asphalt mix approval process, leading to cost savings and environmental benefits. The incorporation of recycled materials in asphalt mixes will reduce life cycle costs and minimize environmental impacts, supporting Caltrans' sustainability goals.

## WHAT IS THE PROGRESS TO DATE?

- Evaluation of alternative routine performance-related tests for BMD: The test track was completed and asphalt testing began, focusing on rutting and lab evaluations. High recycled content mixes, including 40% reclaimed asphalt pavement (RAP), were verified, with additional pilot testing underway.
- Sampling and testing of new mix types: Pilot projects using various recycled and innovative asphalt mixes, including high RAP, rubberized asphalt, and fiber-reinforced mixes, are in progress. Early results show RAP in rubberized hot mix asphalt (RHMA) is promising and now a standard Caltrans option. Field surveys continue to assess long-term performance.
- Testing, analysis, and support for full-scale asphalt projects: Research on asphalt rehabilitation projects continues, with extensive testing of lab samples and full-scale test sections for cracking and fatigue. Efforts also target improvements to aging and cracking tests to better align with Balanced Mix Design recommendations.

- Development of alternative test methods: Progress continues on faster, cost-effective methods for fatigue cracking and other key performance indicators, without sacrificing accuracy.