Rock Products Committee
SCOPING DOCUMENT
Continuously Reinforced Concrete Pavement (CRCP)
Punchout Repair
September 9, 2013

Task Group

Pavement Preservation Task Group (PPTG)

Problem Process

☒ Annual

☐ Expedited

☐ Emerging Initiative

Title

CRCP Punchout Repair

Issue/Problem Statement

Punchouts are the most serious distress type in CRCP. Punchouts in CRCP are caused by excessive wheel loading and insufficient structural capacity of the CRCP (deficient slab thickness or subbase support). Initially transverse and longitudinal cracks form in the CRCP and eventually the cracks intersect and form a depressed block. When the longitudinal steel ruptures the block of CRCP is punched out. If punchouts are not repaired, future CRCP deterioration occurs and the ride quality is greatly reduced.

Background

Caltrans adopted CRCP as a preference for high truck traffic corridors in 2009. Standard CRCP specifications and plans have been developed and used for construction contracts. To complete implementation, the Department needs to publish standard specification and plans for repair.

Purpose

Assure that repair of punchouts will meet the intended purpose for preserving the design life of the CRCP.

Objectives/Deliverables

1. Review punchout repair by other state DOTs to see if/how they would improve California's repair methodology.

2. Develop draft specifications, plans, and guides for punchout repair.

3. Finalize standard specifications, standard plans, and guides for punchout repair.

Timeline

Start date: October 1, 2013

End date: September 30, 2014

Estimated completion date for each deliverable:

1. Comparison of nationwide practice:	October 1, 2013 to December 1, 2013
2. Draft specifications, plans, and guidance:	December 2, 2013 to July 1, 2014
3. Finalize specifications, plans, and guidance:	July 2, 2014 to October 30, 2014

Benefits

The CRCP repair methods must be established and standardized. Quality repairs will extend CRCP service life and decrease the life cycle cost. If punchout areas are not repaired, the pavement further deteriorates and the entire lane must be replaced. Use of standard plans and specifications reduces construction cost and the risk of inconsistent and low quality work.

Impacts

- Updated Highway Design Manual standards for CRCP.
- New CRCP Standard Plans.
- New specification in Section 41.

Resource Requirements

Caltrans:

Pavement:	0.30 PY
DES METS:	0.05 PY
Construction:	0.15 PY
Districts:	0.10 PY
DES-OE:	0.15 PY

Industry: 0.15 PY

FHWA: 0.15 PY

Impediments to Completion of Deliverables

- Insufficient staffing to investigate issues.
- The July 2013 moratorium on specification and plan changes may delay implementation.

Recommendation and Approval

This scoping document for CRCP Punchout Repair was prepared by the Pavement Preservation Task Group to address a priority issue that has Statewide significance and is within the Rock Products Committee mission. The Task Group Co-Chairs have determined the scope, resources required and timeline for delivery of this project to ensure that the deliverables are achievable in a timely manner.

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Approval Date: November 18, 2013