SHRP2 Implementation Assistance for Rapid Renewal Project R05 – Precast Concrete Pavement Technology

SHRP2 is a national partnership of three transportation organizations: the Federal Highway Administration, the American Association of State Highway and Transportation Officials, and the Transportation Research Board. Together, these partners are deploying products that will help the transportation community enhance the productivity, boost the efficiency, increase the safety, and improve the reliability of the Nation's highway system. More information about SHRP2 is available at www.fhwa.dot.gov/goshrp2.

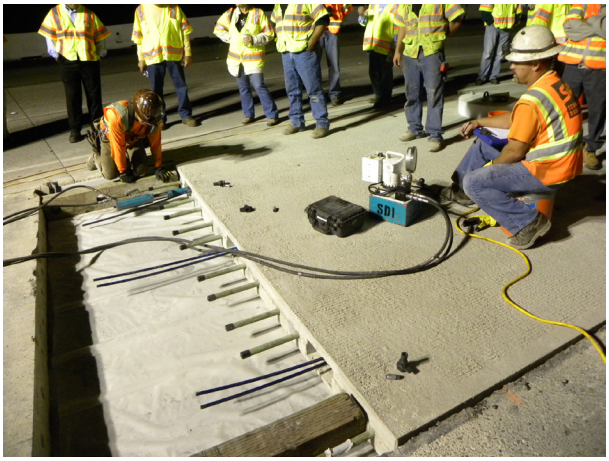
Precast Concrete Pavement Technology Implementation Assistance

The use of precast concrete pavement (PCP) technology can significantly reduce traffic impacts of roadway repair and reconstruction projects, particularly on heavily traveled routes. The technology is applicable to both small segments (enabling flexibility in construction phasing) and corridor-wide pavement reconstruction. The SHRP2 Project R05 report, Precast Concrete Pavement Technology, is available at www.trb.org/main/blurbs/167788.aspx.

On March 28, 2014, following round 3 of the SHRP2 implementation assistance program, an announcement was made of the five Lead Adopters for implementation of PCP technology. Additionally, technical assistance has been offered to 10 applicants from round 3. All of these assistance opportunities for implementation of PCP technology are shown in the table to the right.

The limited technical assistance will be provided by FHWA through a technology transfer contract with Applied Research Associates, Inc. This assistance is available to the five lead adopters as well as the additional ten applicants, and to other highway agencies on a first-call basis.

STATE	ENTITY	ASSISTANCE OPPORTUNITY
Alabama	DOT	Technical Assistance
California	DOT	Technical Assistance
District of Columbia	DOT	Technical Assistance
Hawaii	DOT	Lead Adopter
Illinois	Tollway	Lead Adopter
Kansas	DOT	Lead Adopter
Louisiana	DOTD	Technical Assistance
Maryland	SHA	Technical Assistance
Michigan	DOT	Technical Assistance
Missouri	DOT	Technical Assistance
New Jersey	DOT	Technical Assistance
New Mexico	Pueblo of Tesuque	Technical Assistance
Texas	DOT	Lead Adopter
Utah	DOT	Technical Assistance
Wisconsin	DOT	Lead Adopter



Project R05 Products

The following products were developed under SHRP2 Project R05:

- Overall findings related to viability of the PCP technology.
- Findings based on SHRP2 field testing.
- Guidelines for PCP project selection.
- Guidelines for PCP system acceptance.
- Guidelines for design of PCP systems.
- Guidelines for PCP fabrication.
- Guidelines for PCP installation.
- Implementation plan for PCP technology.
- Long-term monitoring plan for PCP projects.
- Model specifications.

Project R05 demonstrated that the PCP technology is ready for wider implementation and that many of the PCP systems available in the US can meet the needs for rapid renewal of highway systems. A review of projects constructed in the US and the SHRP2 field testing indicated that sufficient advances have been made to reliably design and construct PCP systems to achieve five key attributes of successful pavements, as follows:

1. **Constructability** – Techniques and equipment are available to ensure acceptable production rates for the installation of PCP systems.
2. **Concrete durability** – Plant fabrication of precast panels results in excellent concrete strength and durability.
3. **Load transfer at joints** – Reliable and economical techniques are available to provide effective load transfer at transverse joints in jointed PCP systems and post-tensioned PCP systems.
4. **Panel support** – Techniques to provide adequate and uniform base support conditions continue to be improved.
5. **Efficiency** – Panels are thinner than standard cast-in-place concrete and last longer because of prestressing and/or reinforcing elements in the PCP system.

U.S. Department of Transportation
Federal Highway Administration

Publication Number: FHWA-HIF-14-007

For More Information

FHWA Product Lead: Sam Tyson, (202) 366-1326, sam.tyson@dot.gov
AASHTO Technical Lead: Jameelah Hayes, (202) 624-5266, jhayes@aashto.org
Applied Research Associates, Inc.: Shiraz Tayabji, (410) 707-4902, stayabji@ara.com