Precast Concrete Pavement (PCP) Overview
• INDOT is testing implementation of an innovative pavement treatment approach for Concrete Pavement and Rehabilitation, Precast Concrete Pavement (PCP). This method is being utilized in several states.

• The US 40, Richmond project is the first INDOT PCP Prototype project. The project has been designed to utilize the Fort Miller proprietary system. See project website for more information. (https://www.in.gov/dot/div/contracts/slab/30397.htmlINDOT Vision)

• Use of PCP is a tool for improving and increasing the effectiveness of the Department’s pavement operations. The goal is to fully development in house expertise.

• Future projects are being evaluated and will involve testing different PCP systems. Interstate rest areas are being considered as good prototype projects for development of the PCP with other roadway projects to follow.

• An option for future projects will be to utilize a generic system similar to what Illinois Tollway has developed.
  – The rest area at I-74, Lizton is currently in design for PCP with a generic system. I-65 Wolcott and Kankakee are being considered for PCP currently.

• Specifications for generic systems are under development currently. These specifications will cover PCP for pavement rehabilitation projects as well as for patching.
Precast Concrete Pavement (PCP) Overview

• Long term goals or future foreseeable applications of PCP:
  
  – Determine suitability for use of PCP. This system is not just intended for use in urban environments.
  
  – Expedite concrete pavement repairs on Interstates or other state roadways. The expected advantage is shorter lane closures and better results with extended long term life of the patches.

• Important concepts for US 40, Richmond:
  
  – Why US 40 Richmond? This is an urban project with many utilities. It was designed with removable panels which will facilitate any future utility repairs. This project is suitable to test this experimental feature.
  
  – FHWA approval was obtained for the proprietary Fort Miller, Inc. Super Slab system.
  
  – It is imperative that we produce a successful project in Richmond to set the stage for continues use of PCP.
Contract R-30397
Includes
US 40 - Des. No. 0013790
US 27 – Des. No. 0100701
City of Richmond, Indiana
INDOT Greenfield District
Letting Date: February 8, 2017
Prime Contractor: Gradex

Precast Concrete Pavement - US 40 Eastbound (South A Street)
from South 3rd Street to South 11th Street, and US 40 (South 11th Street) from South A Street to East Main Street
Limits of U.S. 27 Project

Limits of U.S. 40 Project

U.S. 27 and U.S. 40 Project Limits
US 40 Eastbound (South A Street) from South 3rd Street to South 11th Street, and US 40 (South 11th Street) from South A Street to East Main Street
Begin Incidental Construction at Bridge Approach over Whitewater River

End Construction at Main St.

Intersection of U.S 40 and U.S. 27 (Northbound and Southbound) Included in U.S. 27 Project

Intersections of U.S 40 and 10th St. Richmond Stellar Streets Project (R-37463, Des. 1382810)

U.S. 40 Project Limits
Incidental Construction – US 40 Bridge over Whitewater River to 3rd St.
HMA Milling & Resurfacing (0.17 miles)
- Precast Concrete Pavement, Removable
- Total length 0.60 miles along US 40
- US 40 EB (S. A St.) from 3rd St. to 11th St.
- Three Lane Roadway Section
- New ADA Ramps, Sidewalks, Traffic Signals, Radio Interconnect
- Precast Concrete Pavement, Removable
- US 40 EB (S. 11th St.) from S. A. St. to Main St.
- One thru lane & on-street parallel parking on both sides
Project Details
U.S. 40 Mainline Pavement to be Constructed using PRECAST CONCRETE PANELS

Precast Panel Construction Begins at the E. Edge of the S. 3rd St. Intersection

Precast Panel Construction Ends at the S. Edge of the Main St. Intersection

HMA Approaches (Typical)
- 9.5” Thickness of Precast Concrete Pavement, Removable
- Proprietary Product specified:
  Super-Slab® Removable and Reusable Urban Pavement System® RUP
  Fort Miller Co., Inc.
- Precision Grading Fine Aggregate on 4” Comp. Agg. #43 Subbase
- 12,165 SYS of Precast Concrete Pavement (approximately 1,100 panels)
- 3,141 ft. (0.60 miles) total length along US 40
- ¼" tolerance for subgrade and subbase grading is required
- Precast Panel joints are not placed in wheel path
- Precast Panel joint at roadway crown (typical)
- Subgrade Treatment Type IC (12” Comp. Agg. #53)
- Subgrade Treatment Type IVA for parking lane (9” Comp. Agg. #53 on geogrid)
- All Street Approaches will utilize HMA – precast concrete only for Mainline
- 2’ Concrete Curb & Gutter – not attached to Precast Concrete Panels
- Placed after Precast Concrete Panels are in place
- Bituminous Mastic placed between precast panels and gutter to seal the joint
U.S. 40 (S. A St.)
Typical Size and Layout of Precast Concrete Panels
Large panel wt. +/-11,000 lbs (5.5 Tons)
Small panel wt. +/- 5,700 lbs (2.9 Tons)
EASTBOUND U.S.40 (S. 11TH ST.)
TYPICAL PRECAST PANEL DIMENSIONS

U.S. 40 (S. 11th St.)
Typical Size and Layout of
Precast Concrete Panels
Panel wt. +/-11,400 lbs (5.7 Tons)
- Manholes, Utility castings, and other appurtenances surveyed
- Sections of Precast Concrete Pavement to be omitted
- Cast-in-Place Concrete Pavement with Reinforcing Steel is required
Typical Maintenance of Traffic (Phase):
- Maintain access to all adjacent businesses and residences
- Do not close two adjacent streets simultaneously
- Final MOT phasing and details vary from illustrations
- Subgrade preparation to be completed prior to panel installation
- The first Phase of Panel delivery, unloading and placement was completed during daytime hours with brief 20 minute closures.
- The second phase is in progress currently.
Typical Maintenance of Traffic (Phase):
Maintain one lane of traffic on newly constructed roadway
Construct remaining portion of roadway
For More Information
Contract R-30397 website:

http://www.in.gov/dot/div/contracts/slab/30397.htm