**Need for Innovation**

Bridge engineers are seeking new ways to build better bridges, reduce work zone travel delays, and improve repair techniques thereby reducing maintenance. Additionally, owners are challenged with replacing critical bridge components (particularly bridge decks) during limited or overnight road closure periods. Precast panels manufactured from UHPC can provide significant durability improvements to bridge decks due to the high strength, extremely low permeability, and improved connection details inherent in the system. The use of this innovation will result in reduced construction time for new and rehabilitated bridges, the ability to upgrade the load-carrying capacity of existing bridges, and improved durability of bridge decks.

**Project Overview**

Coreslab Structures (Omaha), Inc., demonstrated waffle design modular panels on a bridge project in Wapello County, Iowa. The bridge deck panels will be manufactured with ultra-high performance concrete (UHPC) and installed with field cast UHPC joints which fully develop the joint reinforcement for bridge deck continuity. The demonstration bridge is 33’2” wide by 60’ long, consisting of 14 waffle slabs.

**Project Status**

Completed in November 2011, the structural performance of the bridge is being monitored by Wapello County, Iowa.

**Project Team**

Coreslab Structures (Omaha), Inc.
Lafarge North America, Inc.
Iowa DOT
Iowa State University
Wapello County, Iowa

**Contact Information**

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**Additional Information**

- Final report: http://www.fhwa.dot.gov/hf/partnerships/hf13031/chapt00.cfm
  https://connectdot.connectsolutions.com/n134083201306
- Video on project at www.fhwa.dot.gov/hf/partnerships/coreslab/index.cfm
- Webinar: Field-Cast Ultra-High Performance Concrete Connections for Prefabricated Bridge Elements and Systems; recorded April 21, 2011 at www.fhwa.dot.gov/hf/commtool.cfm
- FHWA TechNote Ultra-High Performance Concrete (pdf) at www.fhwa.dot.gov/publications/research/infrastructure/structures/11038/