

Long-Term Performance Evaluation of NUDECK

Description

Meta Fields

Category : Ongoing Projects

Group : Decks

Subject : Deck Panels

Abstract :

The Kearney East Bypass is the first bridge project that uses the 2nd generation of precast concrete deck system (NUDECK) and the only bridge in Nebraska with precast concrete deck panels on precast/prestressed concrete I-girders. The 2nd generation of NUDECK has several developments over the 1st generation that was implemented in Skyline Bridge in 2004 on steel I-girders. These developments include increasing the width of precast concrete deck panels from 8 ft to 12 ft, using covered individual pockets at 4 ft spacing instead of continuous open channel, eliminating deck overlay, and placing post-tensioning strands underneath the deck panels. The bridge will be constructed during the 2014-2015 construction seasons. In this research project, it is proposed to inspect, monitor, and evaluate the performance of the Kearney East Bypass bridge project for at least 3-year period, possibly 5-year period, after completion. During this period, the bridge deck is in service and exposed (no-overlay), which is an ideal condition to conduct detailed inspection for transverse joints, post-tensioning anchor zones, and deck-girder connections. Wireless gauges will be also installed to continuously monitor girder and deck deformations to confirm their behavior as composited sections. This long-term monitoring will provide vital information about the performance of the 2nd generation of NUDECK system.

Key Words :

Bridge decks, Precast concrete, Prestressed concrete bridges, Girders, Posttensioning, Inspection, Service life, Nebraska

Budget : 109007.00

Project Length : 36

Primary Sponsor Contact Info : Nebraska Department of Roads P.O. Box 94759 Highway Building
Lincoln, NE 68509-4759 USA

Project Starting Year : 2013

Project Completion Year : 2016