Impact of Deck Removal on Wide Thin Flange I-Girders

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Problem Statement

- Wide Flange concrete I-girders are commonly used in medium span bridges in the last 30 years.
- Thin and wide top flanges are susceptible to damage during deck removal.
- There are no guidelines and/or specifications on deck removal procedures in I-girder bridges

![Diagrams of I-girders with dimensions](image)
Research Objectives

• Evaluate deck removal methods (jackhammering, saw cutting, hydro-demolishing, or combinations) for re-decking bridges with wide flange concrete I-girders based on:
  • Cost
  • Time
  • Risk of damage to girder flange
  • Environmental Impacts

• Develop guidelines for recommended practice in deck removal in concrete I-girder bridges.
Existing Information

- NDOR e-mail survey to State DOTs (10 responses)
- ISU questionnaire to state DOTs (28 responses)
- UNL Contractors Workshop (Omaha, NE) Nov. 16, 2012
- UNL Research Report (Evaluating impact of deck removal on PC girders, 2014)
- ISU Research Report (Removing concrete decks on steel girders, 2014)
Proposed Research

- Conduct national survey with specific questions on specifications of hydro-demolishing, saw cutting, and jackhammering as well as acceptable damage to shear connectors, flange concrete, and repair methods.

- Analyze data and prepare a lab/field testing program

- Develop recommendations for deck removal on WF thin I-girders in AASHTO construction specifications.