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**Risk-Based Prioritization and Multi-Objective Optimization for
Long-Term Network-Level Preservation Planning of Bridges in Iowa**

Transportation agencies are under increasing demand to spend their limited dollars in the most efficient manner possible. Development of Bridge Management Systems (BMS) to assist transportation agencies has been a slow and argues process. A systematic risk based approach is needed to quantify future bridge needs. The Iowa D.O.T Bridge Office was approached by Infrastructure Data Solutions, Inc. (IDS) in early 2014 with a proposal to perform risk-based project prioritization and multi-objective optimization with a new software system they were developing.

The system uses historic data from the National Bridge Inventory (NBI) to perform deterioration modeling to provide a 20 year optimized list of projects at different funding levels and condition targets. This presentation will show the decision making process when selecting bridge projects to be programmed. I will show what the future needs for maintaining the bridge inventory are, based on the program output.