# ABSTRACT

Whitehead, Julie M. M.S.C.E., Purdue University, May 2015. Probability of Detection Study for Visual Inspection of Steel Bridges. Major Professor: Robert J. Connor.


An inspector's ability to correctly identify surface and internal defects in steel bridge components is critical to protecting public safety. Ensuring that inspectors are properly trained and adequately equipped to detect these defects in locations that are difficult to access and/or in unfavorable environmental conditions must be a high priority. While the Federal Highway Administration and individual state's departments of transportation have guidelines for inspector qualifications, trainings and certifications, there is very little data that exist which can be used to quantitatively establish a given inspector's capability to detect defects in the field.

This comprehensive Probability of Detection (POD) study was conducted to establish the ability of an inspector with the current required training to locate and quantify cracks in steel bridge components.