Remote Monitoring of Fatigue Sensitive Details on Bridges OR10-041 QA1
Requisition 952
7/10/2012

Q1) What size of fatigue crack needs to be detected?

A1) That is up to the researcher to provide a threshold detectable crack width. The threshold crack width is such that there is a 99% probability of crack detection above background noise. This will vary depending on the sensitivity of the proposed system. Since the system will need validation, a good size would be the smallest crack visible under optical observation, say 0.0015 in (40 µm).

Q2) What happens if there is no crack in the structure during the 1 year evaluation period? What evidence will need to be provided to show that the system functions as intended?

A2) If there is no crack that is fine, although there should be data collected showing stress reversals. The researcher will propose the appropriate validation testing to be performed, whether lab testing, field testing, or a combination. The validation results in conjunction with the data collected on the bridge site over the 1 year evaluation period will be used to present findings.

Q3) How many potential areas will need to be monitored for fatigue cracks on the bridge? Will only one bridge need to be monitored?

A3) The monitoring will be limited to one bridge, with one or two locations on a critical fatigue prone component of the bridge to be monitored. The MDOT research panel members will provide the bridge location and critical component to be monitored.