



Plans of Action (POA) for Scour Critical Bridges

Problem:

Scour or stream instability causes more than half of the bridge failures in the United States annually. Hence, the Federal Highway Administration (FHWA) issued Technical Advisory T5140.23, which required all State Departments of Transportation (DOTs) to evaluate existing bridges for potential failure due to scour or stream instability. To reduce the risk of failure or to make safe those bridges which are vulnerable to scour or stream instability (i.e. scour critical), FHWA required via T5140.23 that all DOTs develop Plans of Action for implementing countermeasures and for inspecting the bridges frequently until such countermeasures were implemented. The requirement of a plan of action became codified in 2005 in FHWA Regulations 23CFR650.313e. Unfortunately, because countermeasures have not been installed at most scour critical bridges and inspections must be performed during flooding, the safety of these scour critical bridges remains of great concern.

Putting it in Perspective:

To prevent catastrophic failures of the scour critical bridges and potential loss of life, King Gee, FHWA Assistant Administrator for Infrastructure, issued a memorandum on January 4, 2008, directing FHWA Division Offices to work with the State DOTs to complete the Plans of Action. A similar memo on January 9, 2008, also directed scour evaluation of bridges with unknown foundations and the implementation of a Plan of Action, if scour vulnerability could not be assessed.

Solution:

FHWA has expanded on the directive of T5140.23 with more explanation and direction on Plans of Action in Hydraulic Engineering Circular 18 (HEC18) – Evaluating Scour at Bridges and Hydraulic Engineering Circular 23 (HEC23) – Bridge Scour and Stream Instability Countermeasures. FHWA also has developed a Plan of Action template <http://www.fhwa.dot.gov/engineering/hydraulics/bridgehyd/poatform.cfm>. A web-based training module was

also developed - NHI 135085 and is available at <http://www.nhi.fhwa.dot.gov/>.

To help interpret and give better understanding to the guidance in HEC18 and HEC 23 and the Plan of Action Template, Headquarters and Resource Center Hydraulic Engineers have facilitated meetings with Divisions and DOTs. In these face-to-face meetings, the status of the State's Plans of Action are discussed, along with options to be considered to complete the Plans of Action, including the correction of coding errors, and methods used by other States to develop and implement their Plans of Action. In addition, the experiences of other State DOTs in the development and implementation of the Plans of Action have been highlighted in our Hydraulic Engineering Conferences. Proceedings from these conferences are available.

Implementation:

Both HEC 18 and HEC 23 have been distributed to DOTs and are available online. Face-to-face meetings have been held with over 10 FHWA Division Offices and state DOTs.

Resource Center staff has also presented at inspector training workshops to explain the role of an inspector in a Plan of Action.

The goal is to have all state DOTs develop and implement Plans of Action. Results should be seen in the number of bridges coded as scour critical.

Additional Resources:

Visit the FHWA Hydraulics Webpage -
<http://www.fhwa.dot.gov/engineering/hydraulics/bridgehyd/poa.cfm>

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