



Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

September 17, 2012

CIRCULAR LETTER 2012-18

BRIDGE SCOUR MONITORING SYSTEM

COUNTY ENGINEERS/SUPERINTENDENT OF HIGHWAYS
MUNICIPAL ENGINEERS/DIRECTOR OF PUBLIC WORKS
CONSULTING ENGINEERS

The intent of this Circular Letter is to make local bridge owners and bridge Program Managers aware of a new bridge scour monitoring system that the Illinois Department of Transportation (IDOT) is implementing.

The National Bridge Inspection Standards (NBIS) require owners to monitor structures with known or potential scour deficiencies. In order to comply with the NBIS and the Federal Highway Administration's *23 Metrics*, the department has contracted with USEngineering Solutions to provide a web-based bridge scour monitoring service called *BridgeWatch®* to monitor structures on the state and local system. The *BridgeWatch®* system monitors rainfall events in the drainage areas associated with the specified structures and predicts when the rainfall has created a predetermined storm event. Where available, stream gauge data will also be monitored by the system for verification of stream flows and the magnitude of the events.

Structures with a Scour Critical Evaluation rating [Illinois Structure Information System, Item 113] of 1, 2, 3, 4, or 7 will be monitored. This monitoring service will be used as a tool to help you in implementing your scour Plans of Action (POA) when required. Agencies with structures meeting this criterion will be contacted by the IDOT Local Bridge Unit, notifying them a structure in their jurisdiction has been entered into the monitoring system.

Other structures not meeting the criterion may also be monitored. While the capacity of the system is limited, it is anticipated there will be room for additional structures after all the scour critical structures are entered. Local agencies interested in monitoring these other bridges should contact the Local Bridge Unit.

When *BridgeWatch®* predicts the predetermined storm event has occurred, users will receive a Warning or Alert based on the following chart.

Scour Rating	Storm Event			
	10 Year	25 Year	50 Year	100 Year
4 or Less	Warning	Alert		
7			Warning	Alert

Warnings are notifications to users that a scour critical bridge in their inventory has passed the specified storm event. No response is required, but the warning is provided as advance notice of a possible alert.

Alerts are notifications to users that a scour critical bridge in their inventory has passed the specified storm event. Users are required to inspect the structure to determine if it has been adversely impacted by the storm event. If the structure has been adversely impacted by the storm event, appropriate action should be taken to assure the safety of the public. Users are required to document the conditions at the site (date, time, water level, bridge condition, approach roadway condition, etc.). This information is then entered into *BridgeWatch*® by the user.

The following maximum response times are recommended, but may be adjusted at the discretion of the bridge Program Manager:

- Scour Rating of 4 or less: 2 hours
- Scour Rating of 7: 48 hours

Warnings and alerts are sent via electronic medium, such as text message, e-mail and fax. Currently the system is not set up to make calls to a land line.

The storm event thresholds shown in the above chart were chosen to get the system operational and may be revised in the future. If the scour POA calls for monitoring or other action at different storm events (or water levels corresponding to different storm events) than those specified here, please contact the Local Bridge Unit to discuss adjusting the thresholds assigned to the structure.

Due to the range of conditions causing a structure to have a scour rating of 4, the storm event triggering a warning or alert may be modified for site specific conditions upon approval of the Local Bridge Unit. Likewise, if a given structure experiences several storm events without producing any scour concerns, the specified storm event triggering a warning or alert may be modified with approval of the Local Bridge Unit.

If users determine *BridgeWatch*® has not adequately estimated the predicted storm event for a given rainfall, the Local Bridge Unit should be contacted so adjustments to the system can be made.

Each agency with a structure requiring monitoring is required to provide at least one contact person who is to be notified when the predetermined storm event is predicted to have occurred. The contact information shown below should be provided for each "user" of the system who is to be contacted during a storm event. If different structures have different users, the corresponding structure numbers should be provided for each user. The Program Manager will be notified whenever a warning or alert is sent and their contact information should be provided as well if they are not identified as the user.

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Requested Contact information:

First Name
Last Name
E-mail address
Fax Number
Cell Number
Cell Phone Provider
Pager (if applicable)
Pager Provider (if applicable)

Each agency will be provided with a username and password to enter information into the system after each alert.

If an agency has a local emergency management agency that they would like to be notified whenever warnings or alerts are issued, they should supply their contact information as well.

Please note, contact information is being collected, but no warnings or alerts will be sent out until a trial period is conducted using structures on the state system. After the trial period is completed, bridge owners on the local system will be notified.

If a local agency has a structure entered into the *BridgeWatch*® system, and either the Scour Critical Evaluation rating is revised or the structure is replaced, the Local Bridge Unit should be notified at the same time the status or coding information is provided to the local IDOT district. This will allow the structure to be removed from the monitoring system and avoid any unnecessary warnings or alerts.

The requested contact information and any questions should be directed to Mr. Curt Evoy at (217) 785-8748 or Curt.Evoy@Illinois.gov.

Sincerely,



James K. Klein, P.E., S.E.
Acting Engineer of Local Roads and Streets



D. Carl Puzey, P.E., S.E.
Acting Engineer of Bridges and Structures

cc: Dan Brydl, FHWA - Illinois Division
Gary Iles, Illinois Department of Natural Resources
Elias Ajami, Illinois State Toll Highway Authority
Bryan Smith, Township Officials of Illinois
Danny Hanning, Township Highway Commissioners of Illinois (Huntsville, Schuyler County)