IMPLEMENTING PLANS OF ACTION

MDOT Bureau of Bridges and Structures
Rich Kathrens, P.E.
Bridge Safety Inspection Engineer
<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/13/2005</td>
<td>Updated NBIS rule enacted that pertains to Scour POA implementation</td>
</tr>
<tr>
<td>01/13/2006</td>
<td>FHWA’s Target date for implementing requirements of updated NBIS</td>
</tr>
<tr>
<td>02/14/2008</td>
<td>MDOT receives letter from FHWA notifying them of Non-Compliance</td>
</tr>
<tr>
<td>07/17/2008</td>
<td>MDOT sent Letter to all Local Agencies requesting evaluation of item 113.</td>
</tr>
<tr>
<td>12/31/2009</td>
<td>Deadline for All Bridges over Water to be Evaluated for Scour</td>
</tr>
<tr>
<td>12/31/2010</td>
<td>Deadline for all Scour Critical Bridges to have Scour POA’s Implemented</td>
</tr>
<tr>
<td>02/01/2011</td>
<td>FHWA implemented the 23 Metrics Metric 18: Inspection Procedures – Scour</td>
</tr>
<tr>
<td>03/2015</td>
<td>OAG Finding Scour Plan of Actions did not contain all recommended information.</td>
</tr>
<tr>
<td>06/02/2015</td>
<td>MDOT provided guidance for management of bridges vulnerable to scour</td>
</tr>
<tr>
<td>03/2016</td>
<td>MDOT updated MiSIM Chapter 6, and updated the MiBRIDGE Scour POA.</td>
</tr>
</tbody>
</table>
Metric #18: Inspection procedures – Scour Critical Bridges

2013 Compliance (C): All of the following must be met for C:
• All bridges over water have a documented scour evaluation.

• All bridges that are scour critical, scour vulnerable, or have unknown foundations have a scour POA prepared to monitor and/or address critical findings.

• All bridges are monitored in accordance with the POA, as appropriate.

2017 Compliance (C): All of the following must be met for C:
• All bridges over water have a scour evaluation as indicated by NBI scour coding.

• All sampled bridges have a documented scour evaluation assessing scour vulnerability.

• All sampled bridges that are scour critical or with unknown foundations have a scour POA.

• All sampled bridges subject to a triggering event are monitored in accordance with the POA.
Metric #18: Compliance Criteria Evaluation

- All bridges over water have a scour evaluation as indicated by NBI scour coding.

### Metric 18 – Inspection procedures – Scour Critical Bridges

<table>
<thead>
<tr>
<th>Bridges Evaluated for Scour</th>
<th>Michigan</th>
<th>Date of report: May 24, 2016</th>
</tr>
</thead>
</table>

#### Bridges Evaluated for Scour

<table>
<thead>
<tr>
<th>Compliance Deficiencies Identified</th>
<th>✔</th>
<th>✗</th>
<th>Trend*</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previously identified, unresolved bridges - Item 113 = 6 or T</td>
<td>7,873</td>
<td>0</td>
<td>✔</td>
<td>100%</td>
</tr>
<tr>
<td>Newly identified bridges*** - Item 113 = 6 or T</td>
<td>7,795</td>
<td>1</td>
<td>99.987%</td>
<td></td>
</tr>
<tr>
<td>Previous year - Item 113 = 6 or T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Bridges requiring POAs - Item 113 = 2, 3, U

<table>
<thead>
<tr>
<th>Item 113 Code</th>
<th>Most Recent</th>
<th>Previous Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>22</td>
<td>17</td>
</tr>
<tr>
<td>4</td>
<td>22</td>
<td>17</td>
</tr>
<tr>
<td>5</td>
<td>220</td>
<td>1242</td>
</tr>
<tr>
<td>6</td>
<td>253</td>
<td>2564</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>42</td>
</tr>
<tr>
<td>8</td>
<td>224</td>
<td>241</td>
</tr>
<tr>
<td>9</td>
<td>3240</td>
<td>3178</td>
</tr>
<tr>
<td>U</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>N</td>
<td>395</td>
<td>397</td>
</tr>
<tr>
<td>Over Water</td>
<td>7,873</td>
<td>0</td>
</tr>
</tbody>
</table>
Metric #18: Compliance Criteria Evaluation

- All sampled bridges have a documented scour evaluation assessing scour vulnerability.
- All sampled bridges that are scour critical or with unknown foundations have a scour POA.

Waterway Data: 57%
Scour Evaluations: 84%
Metric #18: Compliance Criteria Evaluation

- All sampled bridges **subject to a triggering event** are **monitored** in accordance with the POA.
HIGH FLOW EVENTS / SCOUR INSPECTIONS

- June 23-26, 2017
- Scour critical bridges first
STREAM GAUGE – TITTABAWASSEE RIVER SOUTH OF M-20
M-20 OVER NORTH BRANCH OF CHIPPEWA RIVER
M-20 OVER NORTH BRANCH OF CHIPPEWA RIVER
M-20 OVER NORTH BRANCH OF CHIPPEWA RIVER
M-20 OVER NORTH BRANCH OF CHIPPEWA RIVER
M-20 OVER TITATABAWASSEE RIVER
Estimating cover over footings
M-20 OVER TITTABAWASSEE RIVER AFTER THE FLOOD
M-20 OVER TITTABAWASSEE RIVER
STREAM BED ELEVATIONS
JUNE 24, 2017 – TITTABAWASSEE RIVER BEHIND THE H HOTEL (MIDLAND)
M-30 OVER CARROLL CREEK (NOT SCOUR CRITICAL)
US-10 OVER STURGEON CREEK

Thursday (June 22\textsuperscript{nd})

Friday (June 23\textsuperscript{rd})
US-10 OVER STURGEON CREEK

Thursday (June 22\textsuperscript{nd})

Friday (June 23\textsuperscript{rd})
DEEPER PRO+
ELEVATION MARKERS

- PAINTED ON THE MAJORITY OF THE SCOUR CRITICAL BRIDGES
- ACTUAL ELEVATIONS AT EACH SITE
QUICK LUBE AND CAR WASH?
QUESTIONS?